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EGYPT NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

مصر

تقرير النمو الحضري و بيانات التنمية الحضرية

EGYPT

Urban Growth and Urban Data Report

ADVISORY COMMITTEE FOR RECONSTRUCTION
MINISTRY OF DEVELOPMENT
ARAB REPUBLIC OF EGYPT

PNAAT-480
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Urban Growth and Urban Data Report

مصر

تقرير النمو الحضري و بيانات التنمية الحضرية

Prepared for:
Advisory Committee for Reconstruction
Ministry of Development

مقدم إلى
اللجنة الاستشارية للتعمير
وزارة التعمير و الدولة للاسكان و إستصلاح الأراضى

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The Arabic Summary of the Urban Growth and Urban Data Report is presented as a preface to the main English report.

FALSE COLOR LANDSAT
SATELLITE IMAGE MOSAIC OF EGYPT
FROM 950 km ALTITUDE
REMOTE SENSING CENTER-CAIRO-EGYPT

GRAPHIC DESIGNER-CONSULTANT
Siamak Bayat - Makou, Washington D.C.

الحصول على البيانات والمعلومات الخاصة بحقوق ملكية الاراضى الحضرية (ص ٥١٠-٥١٢).

الباب العاشر: الوضع القانونى الحالى لعمليات الحفاظ على الاراضى الزراعية

بادئ ذى بدء - يصنف التقرير الاراضى الزراعية الى خمسة أنواع رئيسية هى : الاراضى الواقعة خارج حدود المدن، والاراضى الواقعة داخل حدود المدن وتلك الواقعة فى نطاق سلطة هيئة المجتمعات العمرانية الجديدة، والاراضى المملوكة ملكية عامة، والاراضى التى يتم استصلاحها فى اطار الخطة القومية لاستصلاح الاراضى. ثم يتناول الوضع القانونى للحفاظ على الاراضى الزراعية فى الفصلين التاليين:

أ - الاطار القانونى (ص ٥١٢)

يتناول هذا الفصل - بالتحليل - أحكام القانون رقم ٥٩ لسنة ١٩٧٣ المعدل للقانون الاساسى للاصلاح الزراعى رقم ٥٣ لسنة ١٩٦٦ والخاص بمنع اقامة أية مبانى أو منشآت فوق اراضى زراعية دون الحصول على ترخيص بذلك من وزارة الزراعة (المادة ٢). كذلك يوضح التقرير أنواع العقوبات المفروضة على المخالفين كما يركز على ظاهرة تجريف الاراضى الزراعية والعقوبات المنصوص عليها بشأنها. وفيما يتعلق بقانون المجتمعات العمرانية الجديدة، فقد أشار التقرير أيضا الى ما ورد به من أحكام بشأن الحفاظ على الاراضى الزراعية (المادتان ٣ و ٤٦).

ب - الاجراءات الادارية (ص٥١٢ - ٥١٤)

يناقش التقرير مدى فعالية الاجراءات الادارية الخاصة بالحفاظ على الاراضى الزراعية والصعوبات التى تكتنف تحقيق الفعالية لهذه الاجراءات. فيعرض أولا، لاجراءات تنفيذ الاحكام القانونية على المستوى القومى من خلال لجان وزارة الزراعة وأساليب عمل هذه اللجان ومدى فعاليتها كذلك يتناول بالتحليل دور المحافظ - والحكم المحلى بصفة عامة - بشأن هذه القضية كما يشير التقرير الى ما تمثله نصوص قانون الايجارات من عقبات فى سبيل ازالة المبانى التى تمثل تعديا على الاراضى الزراعية.

وبالاضافة الى ما سبق، يتناول هذا الفصل المشكلات المتعلقة بالوقت الذى يستغرقه تنفيذ الاجراءات الادارية الخاصة بازالة التعديات على الاراضى الزراعية.

وأخيرا، يتناول التقرير بعض الاوضاع الخاصة - أو المتميزة - فى مجال قضية الحفاظ على الاراضى الزراعية وهى تلك المتعلقة بكل من الاراضى الواقعة تحت سلطة هيئة المجتمعات العمرانية الجديدة والاراضى المستصلحة حديثا وأيضا الاراضى الزراعية الواقعة داخل نطاق حدود المدن والتى تعد من وجهة نظر النظام الضريبى أراضى حضرية ولكن لكونها أراضى زراعية فهى تستلزم الحصول على ترخيص من وزارة الزراعة بالبناء فوقها.

ب – الحالات المستثناه من قواعد تحديد الايجارات (ص ٥٠٣)

يشير التقرير الى الحالات التى استثناها القانون من الاحكام التى يتضمنها بشأن تحديد الايجارات والتى قام بحصرها فيما يلى: الشقق المفروشة (المادتان ٣٩ و ٤٥) ، وشقق التمليك (المادة ٦٨) والتأجير للاجانب (المادة ٣٩) بالاضافة الى مشروعات الاسكان التى تتم باستخدام رأس المال العربى والاجنبى (المادة ٤٨)٠

ج – حالات خرق القانون (ص ٥٠٣، ٥٠٤)

يحتوى هذا الفصل على اشارة موجزة لصور خرق القانون، والتى تتم بالاتفاق بين كل من المالك والمستأجر حيث ركز على صورتين أساسيتين أولاهما قيام علاقة تأجيرية دون التزام بقواعد الايجارات الواردة بالقانون، أما الصورة الثانية فهى ظاهرة الخلوات التى يتم دفعها قبل قيام علاقة التأجير. وبصدد هذه الظاهرة الاخيرة يشير التقرير الى العقوبات المنصوص عليها فى القانون (المواد ٢٥و ٢٦و ٧٧)٠

الباب الثامن: الضرائب على الملكية

يتناول الباب الثامن أحكام القانون رقم ٥٦ لسنة ١٩٥٤ المعدل، والخاصة بفرض الضرائب على المبانى بالمناطق الحضرية على أساس القيمة الايجارية٠ كما يشير الى القانون رقم ٣٤ لسنة ١٩٧٨ بشأن فرض ضريبة على الاراضى الفضاء والقانون رقم ٢٢٢ لسنة ١٩٥٥ الخاص بفرض ضرائب التحسين فى حالة القيام بمشروعات عامة لتحسين وضع المنطقة المقام بها المبنى٠ ويعرض التقرير للاحكام الخاصة بالحالات السابقة كما يلى:

أ – الضرائب على أساس القيمة الايجارية – العوائد (ص ٥٠٤، ٥٠٥)

يناقش هذا الفصل أسس تقدير الضريبة المستندة الى القيمة الايجارية للمبنى، وذلك كما وردت فى القانون رقم ٥٦ لسنة ١٩٥٤ (المادة ٣) والمدى الذى يتراوح خلاله سعر الضريبة٠ كما يتناول بايجاز الهيكل الادارى الخاص بتحصيل هذا النوع من أنواع الضرائب٠

ب – الضرائب الاضافية (ص ٥٠٥)

يقوم التقرير بحصر هذه الضرائب – وعددها ستة – فيما يلى: ضريبتى الدفاع والامن القومى وضرائب البلدية (الخدمات العامة) كما يشير الى أساس تحديد سعر هذه الضرائب٠

ج – ضريبة التصرف فى الاموال المنقولة (ص ٥٠٥)

يوضح التقرير سعر هذه الضريبة٠

د – ضريبة التحسين (ص ٥٠٥)

ترد الاحكام الخاصة بفرض هذه الضريبة فى القانون رقم ٢٢٢ لسنة ١٩٥٥ (المادة ٢)٠ ويشير هذا الفصل تحديدا الى الحالات التى تستوجب فرض هذه الضريبة٠

الباب التاسع: القوانين الخاصة بحقوق ملكية الاراضى فى المناطق الحضرية

أ – خلفية تاريخية (ص ٥٠٦، ٥٠٧)

يبين هذا الفصل تطور ظاهرة الملكية الخاصة للاراضى منذ القرن الماضى وذلك بهدف توضيح الاساس التاريخى الذى تستند اليه أنماط الملكية الحالية للاراضى فى المناطق الحضرية٠ كما يشير بصفة خاصة الى الاثر العكسى الذى يحدثه ارتفاع نسبة اراضى الاوقاف على عملية التنمية الحضرية نظرا للقيود المفروضة على استخدام الدخول المتحصل عليها من هذه الاراضى٠

ب – الموقف الحالى لملكية الاراضى الحضرية (ص ٥٠٧–٥٠٩)

يتناول الفصل الخاص بالموقف الحالى صور ملكية الاراضى الحضرية وهى: الملكية الخاصة والاوقاف والملكية العامة٠ وفيما يتعلق بالملكية الخاصة، يركز التقرير على الاختلافات بين حقوق الملكية الخاصة للاراضى الحضرية فى مصر وبين نظيراتها فى القانونين الانجليزى/الامريكى والفرنسى وتتمثل أهم الاختلافات التى تناولها التقرير فيما يلى: حق الشفعة، الملكية المشتركة (المشاع)، الفصل بين ملكية الاراضى وملكية المبانى المقامة عليها، بالاضافة الى حق الملكية بوضع اليد. أما بالنسبة لاراضى الاوقاف، فقد عرض التقرير لمفهوم الوقف كما قام بتوضيح صور الاختلاف والمشكلات المتعلقة بكل من نوعى الاوقاف، الخيرية والاهلية والتطور الذى شهدته السياسة العامة تجاه هذه الاوقاف٠ أما الملكية العامة فقد عرض التقرير لصورتيها الاساسيتين: دومين الدولة والدومين العام، حيث اوضح أسس التمييز بينهما وأغراض كل منهما٠

ج – تسجيل الاراضى (ص ٥٠٩)

يعرض هذا الفصل لتطور نظام تسجيل الاراضى منذ عهد محمد على والاتجاهات الحالية لتعديله والصعوبات التى تكتنف علمية تقدير المساحات الفعلية من الاراضى المسجلة٠

ثم يتناول بقدر من التفصيل القوانين المنظمة لعمليات مصادرة الاراضى المملوكة ملكية خاصة فى المناطق الحضرية وذلك لاغراض تخطيطية محددة، فيشير التقرير الى الاحكام الرئيسية الواردة – فى هذا الشأن – بكل من القانونين ٥٧٧ لسنة ١٩٥٤ (المواد ٢و ١٣و ١٥و ١٧و ١٨و ٢٠و ٢٢و ٢٣) و ٢٧ لسنة ١٩٥٦ (المواد ٦و ١٣ و ١٩–٢١)٠ أما فيما يتعلق بالاراضى المملوكة بواسطة الدولة، فقد عرض التقرير لسلطة الدولة فى تقرير الاستخدامات الخاصة بها وذلك فى ضوء أحكام القانون رقم ٩٩ لسنة ١٩٠٢ وقانون الحكم المحلى رقم ٤٣ لسنة ١٩٧٩ (المادة ٢٨)٠ كذلك يشير التقرير الى أحكام القانون رقم ٥٤٩ لسنة ١٩٧٦ فيما يتعلق بالسماح للمحافظين ببيع أراضى دومين الدولة، ولسلطات كل من وزارة التعمير (والهيئة العامة للمجتمعات العمرانية الجديدة) بشأن تقرير الاستخدامات الخاصة بالاراضى العامة٠ وبالنسبة لاراضى الاوقاف، فقد تم التركيز على دور اللجان المكونة من المحافظين ووزارتى الاوقاف والتعمير بشأن تقرير استخداماتها والتصرف فيها٠

وترد فى نهاية هذا الباب قائمة مفصلة بالمصادر التى استند اليها فريق الدراسة فى

هـ – الاحكام الخاصة بالتنفيذ (ص ٤٩٩)

يشير هذا الفصل الى احدى الميزات الهامة لقانون التخطيط ومقتضاها تعدد الاساليب التى يتيحها لضمان فعالية تنفيذ الاحكام الواردة به. وتفسيرا لذلك ، يتناول بالمناقشة احكام المواد ٣٣ و ٤٣ و ٤٧.

الباب الخامس: المجتمعات العمرانية الجديدة

(القانون رقم ٥٩ لسنة ١٩٧٩)

يناقش الباب الخامس (ص ٤٩٩،٥٠٠) القانون رقم ٥٩ لسنة ١٩٧٩ الذى أنشئت بمقتضاه هيئة المجتمعات العمرانية الجديدة والتى تعد حاليا الهيئة الحكومية الوحيدة المسئولة عن انشاء وادارة المجتمعات العمرانية التى تقوم خارج حدود المدن والقرى القائمة . وفى هذا الصدد يعرض التقرير لوظائف الهيئة ومسئولياتها الواردة فى المواد ٥ و ٦ و ٩ و ١٣ و٥٠ . كذلك يعرض للسلطات المخوله للهيئة والمرتبطة بممارستها للوظائف والمسئوليات المحددة بالقانون (المادة ١٢). أما مصادر تمويل أنشطة الهيئة فيعرض لها التقرير من واقع احكام المادتين (٣١) و (٣٢). وفيما يتعلق بالاحكام الخاصة بالمشروعات التى يقيمها الافراد فى ظل قانون المجتمعات العمرانية الجديدة ، فقد تناولها التقرير ايضا بقدر من الايجاز (المواد من ١٨ الى ٢٥).

الباب السادس: القوانين الاخرى المؤثرة فى استخدامات الاراضى

يتناول التقرير القوانين الاخرى المؤثرة فى استخدامات الاراضى من خلال تصنيف هذه الاستخدامات كما يلى:

أ – الصناعة والتجارة (ص ٥٠٠،٥٠١)

يعرض هذا التقرير للاحكام الاساسية لاربعة من القوانين المنظمة لعملية توطن المنشآت الصناعية وتنظيم انشطتها وهذه القوانين هى: القانون رقم ٢٨ لسنة ١٩٧٩ وقانون الحكم المحلى رقم ٤٣ لسنة ١٩٧٩ والقانون رقم ٢١ لسنة ١٩٥٨ المعدل وأيضا القانون رقم ٤٥٣ لسنة ١٩٥٤ المعدل. كذلك يشير التقرير الى القانون رقم ٣٣ لسنة ١٩٥٧ المتضمن للاحكام المنظمة لانشطة الباعة الجائلين.

ب – المناطق التجارية الحرة – الخاصة والعامة (ص ٥٠١)

يتناول التقرير – فى هذا الشأن – احكام القانون رقم ٤٣ لسنة ١٩٧٤ المعدل بالقانون رقم ٣٢ لسنة ١٩٧٧ بشأن تنظيم المناطق التجارية الحرة ويميز بين الاحكام الخاصة بالمناطق التجارية الحرة العامة (المواد ٣٣ و ٣٦ و ٣٧ و ٤٦ و ٤٧ و ٤٩ و ٥٠ – ٥٦) وبين تلك الخاصه بالمناطق التجارية الحرة الخاصه (المادتان ٣٠ و ٣١)

ج – المناطق السياحية والتاريخية (ص ٥٠١)

يبين هذا الفصل السلطات الممنوحه لوزارة السياحة بشأن انشاء مناطق سياحية بعد الحصول على موافقة مجلس الوزراء . وترد الاحكام الخاصة بذلك والتى يعرض لها التقرير على نحو مختصر، فى القانون رقم ١ لسنة ١٩٧٣. كذلك يبين الامتيازات الممنوحة للمنشآت القائمة فى ظل هذا القانون. كما يشير التقرير الى القرار الصادر عام ١٩٦٥ بشأن فرض الرقابه والتنظيم على النواحى العمرانية بمناطق الاثار الفاطمية فى القاهرة.

د – المقابر (ص ٥٠١)

ويتناول تنظيم اقامتها القانون رقم ٥ لسنة ١٩٦٦.

هـ – البرك والمستنقعات (ص٥٠١)

يعرض التقرير لاهم ما تضمنه القانون رقم ٥٧ لسنة ١٩٧٨ بهذا الشأن.

و – الطرق العامة (ص ٥٠١،٥٠٢)

يناقش هذا الفصل أهم ما ورد بالقانون رقم ٨٤ لسنة ١٩٦٨ بشأن قواعد انشاء الطرق العامة. كما يعرض فى هذا الصدد لاحكام القانون رقم ٤٠ لسنة ١٩٥٦ (المادة ٩) ولقرار رئيس الجمهورية رقم ٣٩٥ لسنة ١٩٥٦ .

ز – الصرف الصحى والنظافة العامة (ص٥٠٢)

يحتوى التقرير على تحليل لنصوص القانون رقم ٩٣ لسنة ١٩٦٢ المفسر بالقرار الوزارى رقم ٦٤٩ لسنة ١٩٦٢ بشأن عمليات الصرف الصحى فى المدن والمحافظات .

كذلك يشير الى ما تضمنه القانون رقم ٣٨ لسنة ١٩٦٧ من تفويض لمجالس المحافظات بانشاء صناديق للنظافه تمول من خلال تحصيل ٢٪ من قيمة ايجار المساكن .

ح – مياه الشرب (ص ٥٠٢)

يشير التقرير فى هذا الصدد الى القانون رقم ٢١ لسنة ١٩٧٨ الخاص بوضع الاشتراطات المتعلقه بعملية تنقية المياه طبقا لمواصفات وزارة الصحة.

ط – المنشآت العامة (ص ٥٠٢)

ينظم اقامتها القانونين ٣٧١ و ٣٧٢ لسنة ١٩٥٦. كما يشير التقرير الى ما تناوله القانون رقم ٦٦ لسنة ١٩٥٦ من منع لوضع الملصقات على المنشآت العامة والاثرية.

الباب السابع: علاقة المالك بالمستأجر وتحديد الايجارات

(القانون رقم ٤٩ لسنة ١٩٧٧)

أ – الاحكام العامة (ص ٥٠٢)

يبدأ هذا الفصل بتوضيح غلبة نظام السكن التأجيرى بالقاهرة والاسكندرية والمدن المصرية الاخرى. كما يعرض لتطور نظام تحديد الايجارات منذ عام ١٩٤٤. ثم يشير الى القانون رقم ٤٩ لسنة ١٩٧٧ باعتباره القانون الاساس فى تحديد علاقات المالك والمستأجر فيحوى عرضا موجزا بشأن أحكامة العامة والخاصة بقواعد تحديد الايجارات والاسس التى تبنى عليها الزيادة فى هذه الايجارات (المواد ١٠و ١١و ١٥و ٦١) وحالات انهاء علاقة التأجير (المادة ٣١) وحالات الازالة (المادتان ٤٩و ٥٤).

الباب الثانى: قوانين واجراءات تقسيم الاراضى

(القانون رقم ٥٢ لسنة ١٩٤٠ والقانون رقم ٢٩ لسنة ١٩٦٦).

أ ـ الاحكام العامة (ص ٤٩٤)

يوضح هذا الفصل الاحكام العامة للقانونين بشأن تقسيم الاراضى واتاحتها للبيع أو للايجار أو تخصيصها لغرض البناء.

ب ـ الاشتراطات (ص ٤٩٤)

يشتمل الفصل الخاص باشتراطات التقسيم على توضيح النقاط التالية والواردة فى القانون رقم ٥٢ لسنة ١٩٤٠: الحد الادنى لعرض الشارع، المساحات المخصصة للاستخدامات العامة، النسبة المسموح بالبناء عليها من اجمالى مساحة قطعة الارض، ثم الحد الادنى لمساحة قطعة الارض. وترد الاشتراطات المشار اليها فى المواد ٤و ٥و ٦ من القانون.

ج ـ احكام الرقابة والتنفيذ (ص ٤٩٤، ٤٩٥)

يناقش هذا الفصل الاحكام الواردة بالقانون بشأن فرض الضوابط على عمليات التقسيم وتنفيذ الاحكام الخاصة بشأنها وهى الاحكام الواردة فى المواد ١٢و ١٦و ١٩.

د ـ الاحكام الاكثر تشددا ـ للمناطق المخططة بالقاهرة (ص ٤٩٥، ٤٩٦).

تتمثل المناطق التى وردت هذه الاحكام بشأنها فى مناطق المعادى ومصر الجديدة ومدينة نصر والحى السكنى الجديد بحلوان. ويشير التقرير الى الاحكام الخاصة الموضوعة بالنسبة لهذه المناطق فيما يتعلق بالاشتراطات المشار اليها فى الفصل ب أعلاه.

هـ ـ عمليات التقسيم غير القانونية (ص ٤٩٦)

يوضح التقرير الاسباب الرئيسية لهذه العمليات وأهمها ضعف فعاليات تنفيذ الاحكام والتزايد السكانى السريع. كما يتضمن الاشارة الى

القانون رقم ٢٩ لسنة ١٩٦٦ والخاص بتقنين كافة التقسيمات القائمة فيما عدا ما يتعلق بحالات معينة على وجه التحديد. كذلك يشير الى القانون الذى أقر أخيرا لتقنين التقسيمات التى تمت حتى عام ١٩٨٠.

الباب الثالث: أحكام البناء

يناقش هذا الباب أحكام القانون رقم ١٠٦ لسنة ١٩٧٦ الخاص بتنظيم عمليات البناء والتشييد والذى حل موضع القانون رقم ٤٥ لسنة ١٩٦٢ (بالرغم من استمرار القرار التنفيذى الخاص بالاخير) وتتناول المناقشة الجوانب التالية:

أ ـ الاحكام العامة (ص ٤٩٦، ٤٩٧)

يناقش التقرير فى هذا الشأن الاحكام الواردة بالمواد ١و ٢و ٤و ٥و ٦و ١٢و ١٥و ٢٦و ٢٧و ٣٣. وتتناول هذه الاحكام بصورة عامة المسائل المتعلقة باستخراج تراخيص البناء والمدة المسموح بالبناء خلالها بدءا من الحصول على الترخيص، والمتطلبات اللازم توافرها لاعتماد التصميمات الخاصة بالمبانى بالاضافة الى الرسوم الخاصة بالحصول على التراخيص.

ب ـ الاشتراطات (ص ٤٩٧)

يتناول هذا الفصل الاشتراطات الخاصه بارتفاعات المبانى والاسقف وفتحات التهوية والاضاءة والمصاعد والحراسة.

ج ـ أحكام الرقابة والتنفيذ (ص ٤٩٧)

يشير التقرير الى التشدد الغالب على طبيعة الاحكام الواردة بالقانون فيما يتعلق بفرض الضوابط وضمان فعالية التنفيذ. كما يتضمن الاشارة الى الاحكام الخاصة بهذا الشأن، وهى الاحكام الواردة فى المواد ١٦و ٢١و ٢٢و ٢٤.

الباب الرابع: قانون التخطيط المقترح

يناقش الباب الرابع قانون التخطيط العمرانى الذى أعدت مسودته وزارة الاسكان والتعمير وقدم الى مجلس الشعب لاول مرة فى عام ١٩٧٣ ثم أعيدت مناقشته فى عام ١٩٨١. وتتناول فصول هذا الباب القانون المقترح على النحو التالى:

أ ـ الاحكام الخاصة بالتخطيط (ص ٤٩٨)

يوضح هذا الفصل الاجراءات الاساسية المقترحة لوضع الخطط الرئيسية لمناطق التعمير وعلاقتها بالقواعد الخاصه باستخدامات الاراضى. ويبرز فى هذا الصدد دور كل من المجالس المحلية للمدن والهيئة العامة للتخطيط العمرانى (المواد ١و ٣و ٤).

ب ـ عمليات التقسيم (ص ٤٩٨)

يناقش هذا الفصل الجزء الثانى من القانون المقترح والذى سيتقرر ـ فى حالة التصديق عليه ـ احلاله محل القانون رقم ٥٢ لسنة ١٩٤٠ فيما يتعلق باشتراطات التقسيم. ويركز العرض الوارد فى هذا الفصل على التغيرات المقترح ادخالها على الاحكام الخاصة بتنظيم عمليات التقسيم (المواد ١١ و ١٣ و ١٤ و ١٥ و ١٧ و ٢٣ و ٢٩).

ج ـ اشتراطات عملية البناء (ص ٤٩٨، ٤٩٩)

يركز التقرير على ما يتسم به القانون المقترح من تخفيف لشدة الاحكام الواردة بالقانون رقم ٥٢ لسنة ١٩٤٠ بشأن الاشتراطات الخاصه بعمليات البناء، حيث ترد الاحكام الخاصة بذلك فى المادتين ١٠ و ٤١ من القانون المقترح.

د ـ احكام الرقابه (ص ٤٩٩).

تتم المقارنة أيضا فى هذا الشأن ـ بين القانون الحالى والمقترح حيث يبرز التقرير احكام المواد ١٦ و ١٨ و ٢٢ من الاخير.

ب – ادارة محافظة القاهرة فى ظل التشريع العام (ص ٤٨٣)

يوضح هذا الفصل عدم خضوع الادارة فى محافظة القاهرة لنظام تشريعى خاص رغم المحاولات التى بذلت فى هذا الاتجاه. ثم يشير الى أحكام القانون رقم ١٢٤ لسنة ١٩٦٠ بشأن السماح بتقسيم المدن الكبرى الى أحياء، وأيضا الى ما تضمنه القانون رقم ٥٢ لسنة ١٩٧٥ من خطوات أوسع فى سبيل منح مجالس الاحياء مدى أوسع من السلطات. ويتضمن الجدول (٧–١) بيانا بحجم وتوزيع السكان وعدد الاقسام الادارية فى أحياء محافظة القاهرة عام ١٩٧٩.

ج – المجلس الشعبى المحلى لمحافظة القاهرة (ص ٤٨٣)

يشتمل الفصل الثالث على ايضاح موجز لوسيلة اختيار أعضاء المجلس الشعبى المحلى لمحافظة القاهرة وهيكل هذا المجلس ونظام التصويت بداخله ومدى فعالية القرارات الصادرة عنه، بالاضافة الى توضيح للاختلافات بين المجالس المحلية والمجلس الشعبى للمحافظة فيما يتعلق بالنقاط السابقة.

د – المجلس التنفيذى (ص ٤٨٤)

يشير التقرير الى هيكل المجلس التنفيذى للمحافظة ومسئولياته والسلطات المخولة له.

هـ – المحافظ (ص ٤٨٤)

يتناول هذا الفصل – بالتحديد وظائف ومسئوليات المحافظ باعتبار وجوده على رأس المجلس التنفيذى للمحافظة.

و – الهيكل التنظيمى (ص ٤٨٤)

تظهر من الشكل (٧–١) ملامح الهيكل التنظيمى لمحافظة القاهرة، والذى يمكن تلخيص مكوناته فيما يلى: المحافظ والوحدات العاملة تحت اشرافه المباشر، ومساعدى المحافظ، وسكرتير المحافظة ومساعديه، والادارات الفنية المختصة بالمجالات المختلفة (الصحة، التعليم، الاسكان والتعمير،... الخ) أما الشكل (٧–٢) فيوضح الهيكل التنظيمى لواحد من أحياء القاهرة الرئيسية وهو حى غرب القاهرة، وذلك باعتباره مثالا لنظائره من أحياء القاهرة الاخرى.

ز – توزيع الاختصاصات بين المحافظة والاحياء (ص ٤٨٤–٤٨٧)

يتناول هذا الفصل بايجاز صور توزيع الاختصاصات بين المحافظة والاحياء وذلك بالنسبة لكل من المهام البلدية والوظائف الاجتماعية (جدول ٧–٢)

ح – الهيئات والشركات العامة المحلية (ص ٤٨٧)

يتم فى هذا الفصل حصر الهيئات العامة العاملة تحت الاشراف المباشر لمحافظ القاهرة وهى: الهيئة العامة للمجارى والصرف الصحى بالقاهرة الكبرى، الهيئة العامة لمياه الشرب بالقاهرة الكبرى، الهيئة العامة للنقل بالقاهرة، أما الشركات العامة العاملة أيضا تحت اشراف المحافظ فهى شركة المعادى للتعمير، وشركتا مصر الجديدة ومدينة نصر للاسكان والتعمير.

ط – العاملون بمحافظة القاهرة (ص ٤٨٨)

يتضمن هذا الفصل اشارة الى عدد العاملين بمحافظة القاهرة عام ١٩٨٠ وتوزيعهم بين الادارات المختلفة، وذلك كما يتضح من الجدولين (٧–٣) و (٧–٤)

ى – تمويل انشطة المحافظة (ص ٤٨٨، ٤٨٩)

يصنف التقرير مصادر تمويل أنشطة محافظة القاهرة الى مصدرين أساسيين: موازنة المحافظة المدرجة بالموازنة العامة، والصناديق الخاصة وفيما يتعلق بالايرادات من المصدر الاول، فان الجدول (٧–٥) يقوم بتقسيمها الى: ايرادات محصلة محليا، ومنح من الحكومة المركزية وقروض. ويظهر الجدول (٧–٦) ايرادات ونفقات المحافظة خلال عام ١٩٧٩ موزعة بين الادارات المختلفة أما بصدد الايرادات من المصدر الثانى، فيصنفها التقرير الى ما يلى: ايرادات محصلة من صندوق التنمية والخدمات المحلية بموجب القانون رقم ٥٣ لسنة ١٩٧٥ (جدول ٧–٧) وأخرى محصلة من صندوق النظافة بموجب القانون رقم ٣٨ لسنة ١٩٦٧ (جدول ٧–٨).

الجزء السادس
الاطار القانونى للتنمية الحضرية

يناقش الجزء السادس – بايجاز – الوضع القائم بالنسبة للادوات القانونية المستخدمة فى مجال التنمية الحضرية بمصر.

الباب الاول: مقدمة

يبدأ هذا الباب بتعريف الانواع المختلفة من الادوات القانونية المستخدمة فى دول العالم لتنظيم عملية التنمية الحضرية، والتى تتراوح بين الرقابة المباشرة والرقابة غير المباشرة. كما يؤكد على أهمية توافر الاجهزة الكفؤه والكفيلة بوضع النظام القانونى موضع التنفيذ على نحو سليم، وأيضا على أهمية دور المجتمع ذاته فى ضمان نجاح التنفيذ. ويتضمن هذا الباب الفصلين التاليين:

أ – الموقف الحالى (ص ٤٩٣)

يشير هذا الفصل الى ظاهرة التغيير والتعديل المستمر التى تتسم بها عملية التخطيط بالنسبة لكافة الانشطة فى مصر، وأيضا الى المركزية التى تميز هذه العملية بالرغم من وجود ثمانية أقاليم تخطيطية فى ظل نظام الحكم المحلى. كذلك يبرز المشكلات التى يعانى منها العاملون فى الجهاز الادارى. كما يؤكد على بعض النقاط الهامة المتعلقة بالاطار القانونى للتنمية الحضرية وأهمها: محدودية فعاليات التنفيذ، كبر امكانيات فرض الضوابط والرقابة على المستوى المحلى بالمقارنة بنظيراتها على المستوى القومى، و أيضا صعوبة تطبيق الاجراءات والقواعد التى تتعارض الى حد ما – مع العرف السائد فى المجتمع وذلك حتى بالرغم من فعالية امكانيات التنفيذ فى هذا الشأن.

ب – قائمة بالقوانين المؤثرة فى عملية التنمية الحضرية (ص ٤٩٣، ٤٩٤)

تدرج فى هذا الفصل قائمة بأهم القوانين المتعلقة باجراءات السماح بعمليات تقسيم الاراضى والانماط المحددة لاستخدامات تلك الاراضى.

الباب السادس: اللامركزية والحكم المحلى

ينقسم هذا الباب الى الفصول التالية :

أ - خلفية تاريخية (ص ٤٦٣،٤٦٤)

تبين هذه المقدمة تطور نظام الحكم المحلى فى مصر منذ فترة ما قبل ثورة ١٩٥٢. كما يشير الى القوانين الصادرة لتنظيم أسلوب الحكم المحلى فى مصر وهى القوانين ١٢٤ لسنة ١٩٦٠ و٥٧ لسنة ١٩٧١ و١٢٤ لسنة ١٩٦٠ و٥٢ لسنة ١٩٧٥ وأخيرا القانونين٤٣ لسنة ١٩٧٩ و٥٠ لسنة ١٩٨١.

ب - وحدات الحكم المحلى (ص ٤٦٤)

يوضح الشكل (٦-١) الهيكل التنظيمى لوحدات الحكم المحلى كما نص عليه فى القوانين الصادرة فى الاعوام ١٩٦٠ ، ١٩٧١ ، ١٩٧٥ ، ١٩٧٩ ، ١٩٨١ كما يحتوى الجدول (٦-١) على بيان بعدد وتوزيع وحدات الحكم المحلى فى محافظات مصر البالغ عددها ستة وعشرون محافظة.

ج - الهياكل المركزية والاقليمية للحكومة المحلية (ص ٤٦٤-٤٦٦)

يبين الفصل الثالث من هذا الباب تطور هيكل الحكومات المحلية فى مصر والتغيرات التى أدخلت على تكوين هذا الهيكل خلال الفترة الممتدة من عام ١٩٦٠ حتى الان. ويوضح الشكل (٦-٢) الوضع الذى يوجد عليه الهيكل التنظيمى للحكومة فى مصر عام ١٩٨١. بينما يشتمل الشكلان (٦-٣) و (٦-٤)

على بيان بالهيكل التنظيمى لكل من الامانه العامة للحكم المحلى وجهاز اعادة بناء وتنمية القرية المصرية ، على التوالى.

كما يعرض هذا الفصل للاهداف والمسئوليات الرئيسية التى يضطلع بها كل من جهاز التعاون الانتاجى والصناعات الحرفية ومعهد الحكم المحلى (الذى أدمج اخيرا فى معهد الادارة العامة) والمعهد القومى للتنمية الادارية (الذى يعرف الان بأكاديمية السادات للعلوم الادارية) كذلك يعرض بصورة مختصرة لدور لجان التخطيط فى الاقاليم التخطيطية الثمانى وهياكلها التنظيمية

والمسئوليات التى ينبغى أن تضطلع بها وذلك فى ضوء ما ورد بالقانون الاخير للحكم المحلى.

د - المحافظ (ص ٤٦٦،٤٦٧)

يناقش هذا الفصل التطور التاريخى لدور المحافظ فى ظل النظم المختلفة للحكم المحلى خلال الاعوام العشرين الماضية ويركز فى هذا الشأن على التعديلات التى أدخلت بموجب القانون الاخير للحكم المحلى على طبيعة السلطات المخولة للمحافظ ومسئولياته.

هـ - هيكل ووظائف المجالس المحلية (ص ٤٦٧)

تمثل المجالس المحلية موضوع الفصل الخامس ، حيث يتم التركيز أيضا على التطور الذى طرأ على هيكل هذه المجالس فى ظل القوانين المتعاقبه للحكم المحلى كما يشتمل هذا الفصل على توضيح للاختصاصات والصلاحيات الممنوحه للمجالس المحلية الان.

و - الموارد المالية (ص ٤٦٧-٤٧٠)

يشتمل هذا الفصل على بيان تفصيلى بمصادر الايرادات المتاحة لوحدات الحكم المحلى فى مصر كما يقوم بتصنيف الايرادات تبعا لمصدرها ، أى سواء تم توفيرها من خلال الضرائب المحصلة بواسطة الحكومة المركزية أو من خلال الضرائب المحلية.

ويحتوى الجدول (٦-٢) على مقارنة بين الزيادة فى الايرادات تبعا لكل من المصدرين المشار اليهما.

ز - قضايا الحكم المحلى فى مصر (ص ٤٧٠،٤٧١)

يلخص هذا الفصل القضايا والمشكلات التى يواجهها نظام الحكم المحلى فى ثمانى هى: عدم استقرار التشريعات المنظمة للحكم المحلى، وعدم وضوح المعايير التى يتم بمقتضاها رسم حدود الوحدات المحلية ، وعدم فعالية الادوار التى تلعبها الاقسام الفرعية (المراكز) والاحياء الحضرية فى ظل النظام الحالى نتيجة لعدم وجود توزيع محدد للاختصاصات أو السلطات أو الموارد المالية ، وأيضا، ما يمثله نظام تعدد الرئاسات من تفاقم للتعقيدات الادارية والبطء وضعف الفعالية اللذين تتسم بهما نظم الاتصال الحالية ، ومشكلة

التفاوت وعدم الاتساق بين هياكل ووظائف وحدات الحكم المحلى بمستوياتها المختلفة ، وضعف اسهام المواطنين فى نظام الحكم المحلى بالرغم مما ينص عليه قانون الحكم المحلى الصادر عام ١٩٧٩، حيث تعزى هذه المشكلة الى نظام قائمة الحزب فى الانتخابات والمنصوص عليه فى القانون الصادر عام ١٩٨١. أما المشكلة السابعة من مشكلات الحكم المحلى فتتلخص فى التغيير المستمر للقيادات والعاملين بأجهزة الحكم المحلى، وذلك كما يتضح من جدول (٦-٤) الامر الذى ينجم عنه افتقاد القيادات القادرة على الحركة واتخاذ المبادرات الايجابية فى مجال الحكم المحلى. وأخيرا، فان اتجاهات الحكومة المركزية نحو الحكومات المحلية تنطوى - ضمنا - على الميل للقضاء على أية أدوار فعالة للاخيرة

ح - مقارنة بين قوانين الحكم المحلى

(ص ٤٧١ - ٤٨٢)

تحتوى الجداول (٦-٥) الى (٦-٩) على مقارنة بين قوانين الحكم المحلى الصادرة فى الاعوام ١٩٦٠، ١٩٧١، ١٩٧٥، ١٩٧٩، ١٩٨١ من ناحية الجوانب التالية : أساليب تشكيل وحدات الحكم المحلى، الهياكل المركزية والاقليمية لنظام الحكم المحلى، مهام ومسئوليات مكتب المحافظ، هيكل ووظائف المجالس المحلية وأخيرا، الموارد المالية المتاحة على مستوى المحافظة.

الباب السابع: الملامح الادارية لمحافظة القاهرة

يشتمل الباب السابع على عشرة فصول، تتلخص محتوياتها فيما يلى:

أ - خلفية تاريخية (ص ٤٨٣)

تتضمن الخلفية التاريخية اشارة الى نمو محافظة القاهرة منذ بداية القرن العشرين. كما تشتمل على تقييم لفعالية دور اللجنة العليا لتخطيط اقليم القاهرة والمكونة فى ظل القانون رقم ٤٣ لسنة ١٩٧٩.

المصرى بدءا من عام ١٩٦٠ وحتى عام ١٩٧٩. ويتضمن الشكل (٣-١) وصفا للعملية التخطيطية فى ظل القانون رقم ٧٠ لسنة ١٩٧٣، وأيضا فى ظل قانون الحكم المحلى، بينما يشير الشكل (٣-٢) الى الهيكل التنظيمى لوزارة التخطيط. كذلك يناقش هذا الفصل دور بنك الاستثمار القومى فى العملية التخطيطية، والمصادر الرئيسية لموارد هذا البنك، واخيرا يركز على مشكلة الاقليمية واللامركزية فى عملية التخطيط.

أما الفصل الثانى (ص ٤٢٩) فقد خصص لتحليل عملية اعداد الموازنة ولدور وزارة المالية فى هذا المجال. وفى هذا الصدد، يتضمن الشكل (٣-٣) صورة لعملية اعداد الموازنة بدءا من المحافظات، ومرورا بالوزارات المختلفه، ثم انتهاء بوزارة المالية. كما يبين الشكل (٣-٤) اجراءات اعداد الموازنات المالية للحكومة المركزية وللمحليات. أما الشكل (٣-٥) فيبرز الهيكل التنظيمى لوزارة المالية، بالوضع الذى كان عليه هذا الهيكل فى يناير ١٩٨١.

ويحتوى الفصل الثالث من هذا الباب (ص ٤٣٠، ٤٣١) على عرض موجز للوظائف الرئيسية لوزارة الاقتصاد والتعاون الاقتصادى، وأهمية الدور الذى تقوم به هذه الوزارة بالنسبة لعملية التخطيط واعداد الموازنة. كما يناقش الهيكل التنظيمى للوزارة والذى يوضحه أيضا الشكل (٣-٦).

كما يرد وصف للنظام الخاص بوضع سياسات العمالة فى الفصل الرابع (ص ٤٣١، ٤٣٢). اذ يتناول هذا الفصل الهيكل التنظيمى لكل من الجهاز المركزى للتنظيم والادارة ووزارة القوى العاملة والتدريب، وذلك كما يظهر من الشكلين (٣-٧) و (٣-٨) على التوالى. كما يتضمن توضيحا للفارق بين مهام كل منهما فى هذا المجال بالاضافه الى الاشارة لاهم المشكلات الخاصه بوضع السياسة العامة للقوى العاملة والتى ينجم جزء منها عن التداخل بين وظائف الهيئتين. وفيما يتعلق بالحلول المطروحه فى هذا الشأن، يركز التقرير على التعديلات الواردة بالقانون الجديد للعاملين بالدولة (القانون رقم ٤٧ لسنة ١٩٧٨). ويحتوى الجدولان (٣-١) و (٣-٢) على البيانات المتعلقه باعداد الوظائف المطلوب توفيرها من جانب وزارة القوى العاملة وتلك الخاصة بمستويات الاجور فى عام ١٩٧٨.

وتمثل وزارة التعمير موضوع الفصل الخامس (ص ٤٣٢-٤٣٨)، حيث يتناول التقرير - على نحو تفصيلى - الادوار الرئيسية والهيكل التنظيمى للوزارة والاجهزة التابعة لها. كما يتضمن هذا الفصل اشارة الى الوزارات الاخرى المعنية بصورة مباشرة بسياسات التنمية وهى وزارات الصناعة والثروة المعدنية، والسياحة، والزراعة، والرى، واستصلاح الاراضى.

ويتضح من الشكل (٣-٩) الهيكل التنظيمى لوزارة التعمير. أما أهم الاجهزة التابعة للوزارة والتى ورد تحليل لوظائفها الرئيسية وهياكلها التنظيمية فهى الهيئة العامة للتخطيط العمرانى (شكل ٣-١٠) والجهاز المركزى للتعمير (شكل ٣-١١) واللجنة الاستشارية للتعمير والهيئة العامة لتنمية بحيرة السد العالى، وصندوق البحوث والدراسات بالوزارة (شكل ٣-١٢) ومركز بحوث الاسكان والبناء والتخطيط العمرانى (شكل ٣-١٣) وهيئة المجتمعات العمرانية الجديدة.

وتحتوى الصفحات (٤٣٩-٤٥٠) على وصف للاهداف والوظائف الرئيسية والهياكل التنظيمية لكل من وزارات التنمية والاجهزة التابعة لها، وهى وزارات: الدولة لاستصلاح الاراضى (شكل ٣-١٥) والزراعة (الشكلان ٣-١٦ و ٣-١٧) والرى (الشكلان ٣-١٨ و ٣-١٩) والصناعة والثروة المعدنية (الشكلان ٣-٢٠ و ٣-٢١) والسياحة (شكل ٣-٢٢).

أما الفصل السادس (ص ٤٤٢-٤٤٧) فقد أفرد لتحليل الاهداف والمهام الرئيسية والهياكل التنظيمية للوزارات المعنية بتوفير البنية الاساسية، وهى الوزارات التالية:

- وزارة الدولة للاسكان (شكل ٣-٢٣) والاجهزة التابعة لها وهى: الهيئة العامة للمجارى والصرف الصحى (شكل ٣-٢٤) والهيئة العامة لمياه الشرب (شكل ٣-٢٥) والهيئة العامة لتعاونيات البناء والاسكان (شكل ٣-٢٦) والجهاز التنفيذى للمشروعات المشتركة (شكل ٣-٢٧).

- وزارة النقل والمواصلات والنقل البحرى والاجهزة التابعة لها (الشكلان ٣-٢٨ و ٣-٢٩).

- وزارة الكهرباء والطاقة (شكل ٣-٣٠).

كما يتضمن الفصل السابع (ص ٤٤٧-٤٥٠) اشارة الى اهداف ووظائف وهياكل وزارات التعليم والصحة والشئون الاجتماعية والتموين والتجارة الداخلية، وهى الوزارات التى ترتبط مسئولياتها على نحو مباشر بمجال الخدمات الاجتماعية (الاشكال ٣-٣١ الى ٣-٣٤ على التوالى).

الباب الرابع: الوحدات الاقتصادية العامة على المستوى القومى

يحتوى هذا الباب على فصلين يتناول أولهما (ص ٤٥١) التطور التاريخى لهيكل الاقتصاد المصرى من حيث طبيعة القطاع المسيطر على النشاط الاقتصادى، أى سواء اكان قطاعا عاما أو خاصا، وذلك منذ الفترة التى سبقت قيام ثورة يوليو ١٩٥٢ مباشرة وحتى الوقت الحالى.

أما الفصل الثانى (ص ٤٥١، ٤٥٢) فيشتمل على عرض تفصيلى للهيكل الحالى للوحدات الاقتصادية العامة فى ظل القانون رقم ١١١ لسنة ١٩٧٥ والخاص بالغاء المؤسسات العامة واتباع أسلوب التجميع القطاعى للوحدات الاقتصادية (شكل ٤-١). كما يتضمن هذا الفصل اشارة موجزة لوظائف المجالس العليا التى تم تشكيلها بالنسبة للقطاعات المختلفه.

ويشتمل الباب الرابع على شكل يوضح الهيكل العام للوحدات الاقتصادية العامة. كما يتضمن جدولين، يشير أولهما بايجاز الى الشركات الاقتصادية العامة مصنفة تبعا للقطاع الذى تنتمى اليه وموقعها وعدد العاملين بها. أما الجدول الثانى (ص ٤٥٤ - ٤٦٢) فهو يبرز تفصيلا - كافه البيانات التى وردت على نحو موجز فى الجدول الاول.

الباب الخامس: هيئة قناة السويس

تمثل هيئة قناة السويس موضوع الباب الخامس من هذا الجزء، حيث يتم التركيز على الجوانب الرئيسية لهيكلها التنظيمى (شكل ٥-١)، وأسلوب ممارسة انشطتها، ودرجة الاستقلالية التى تتمتع بها فى هذا الشأن. كما يشير التقرير الى الاهمية التى تمثلها أنشطة الهيئة بالنسبة للاقتصاد القومى المصرى بصورة عامة.

المبانى السكنية بمصر. وقد استمدت المعلومات الواردة بهذه المناقشة من مسودة التقرير النهائى لدراسة "قطاع الاسكان غير الرسمى – المعروض والقضايا المتعلقة بالسياسة" ويجدر التنويه بأن الدراسة المشار اليها قد تضمنت تحليلات للاسكان غير الرسمى فى أربع مناطق بالقاهرة الكبرى وبنى سويف. كذلك، يشير تقرير النمو الحضرى والبيانات الحضرية الى عمليتى مسح اخريين لقطاع الاسكان غير الرسمى بالاقسام التى يقطنها ذوو الدخل المنخفض فى القاهرة الكبرى وحلوان. وقد تم تلخيص البيانات الواردة بهما فى الجدول (٧–٤). أما الجدولان (٧–٥) و (٧–٦) فيشيران الى اعداد الاسر التى لا تتصل مساكنها بشبكات مياه الشرب، وتكاليف الاسكان، والايجار، والمبالغ التى تدفع عادة كخلو بالنسبة للنوعيات المختلفة من الوحدات السكنية.

الباب الثامن: تمويل عمليات البناء الا ـنى

يناقش الباب الثامن اسلوبين مختلفين من اساليب تمويل عمليات البناء الاسكانى، أولهما: تمويل القطاع الرسمى المعتمد على التحويلات التى يقوم بها البنك المركزى لتمويل هذه الانشطة، وثانيهما: تمويل القطاع غير الرسمى الذى يتم من خلال مدخرات القطاع العائلى والتى يتمثل الجزء الاكبر منها فى تحويلات المصريين العاملين بالخارج.

أ – تمويل اسكان القطاع الرسمى (ص ٤١٧)

يوضح الجدول (٨–١) موازنات بنوك الرهن فى مصر خلال الفترة ١٩٧٥–١٩٨٠ حيث تمثل هذه البنوك بالاضافة الى البنك المركزى مصدر تمويل الاسكان الرسمى، وقد استخلصت بيانات الجدول من دراسة صندوق النقد الدولى عن: "جمهورية مصر العربية – التطورات الاقتصادية الحديثة"، ١٩٨١. ويشير التقرير الى أن البيانات الواردة بهذه الدراسة بشأن بنوك الرهن فى مصر مستمدة بدورها من بيانات البنك المركزى المصرى.

ب – مؤسسات تمويل عمليات البناء الاسكانى (ص ٤١٧–٤١٩)

يشير التقرير الى أهم هذه المؤسسات وهى: البنك العقارى المصرى، الهيئة العامة لتعاونيات البناء والاسكان، وبنك الاسكان والتعمير (المنشأ حديثا). كذلك يبين التقرير الدور الجديد الذى

يلعبه البنك العربى للاراضى فى عمليات تمويل البناء الاسكانى. ويحتوى الجدول (٨–٢) على بيانات بشأن مصادر الاموال المتوافرة لدى هيئة تعاونيات البناء والاسكان. أما الجدول (٨–٣) فيبين الحد الاقصى وشروط القروض الممنوحة بواسطة الهيئة.

ج – التوسع فى التمويل (ص ٤١٩)

يناقش هذا الفصل التطور الذى شهدته عمليات التمويل ووضع المؤسسات المعنية بذلك ومدى كفاية التمويل الممنوح وشروطه، بالاضافة الى امكانيات التوسع فى هذا التمويل سواء من خلال المدخرات الخاصة أو موارد القطاع العام.

الباب التاسع: الخطة القومية للاسكان ١٩٧٩

يتضمن الباب التاسع (ص ٤١٩، ٤٢٠) ملخصا لأهم ملامح الخطة القومية للاسكان التى قامت بوضعها وزارة الاسكان فى عام ١٩٧٩ استهدافا لاتاحة اطار الشامل اللازم لتوفير الاعداد المطلوبة من الوحدات السكنية، ورفع مستوى الطاقة الانتاجية لعملية التشييد. وفى هذا الصدد، يشير التقرير الى ماتضمنته الخطة من تركيز على المناطق الحضرية واحتياجاتها من الوحدات السكنية حتى عام ٢٠٠٠. كما يوضح الاسلوب الذى تنبته الخطة عند القيام بالتنبؤ بالاحتياجات المستقبلية من الوحدات السكنية ونصيب كل من القطاعين العام والخاص فى تحقيق الاهداف الواردة بالخطة. كذلك يفصل التقرير التكاليف الاجمالية للخطة الى تكاليف خاصة بالوحدات السكنية ذاتها وتكاليف أخرى تخصص لتوفير البنية الاساسية اللازمة. ويوضح الجدول (٩–١) الاحتياجات من الوحدات السكنية خلال الفترة ١٩٧٦–٢٠٠٠ والواردة فى الخطة القومية للاسكان، مقسمة تبعا للمحافظات. أما الجدول (٩–٢) فيتضمن تصنيفا للوحدات السكنية المدرجة بالخطة تبعا لنوعيتها. كذلك، يشتمل الجدول (٩–٣) على التكاليف ومصادر الايرادات المقدرة لتمويل برنامج الخطة القومية للاسكان للفترة ١٩٨١–١٩٨٥، بينما يشير الجدول (٩–٤) الى الاحتياجات من الوحدات السكنية خلال نفس الفترة وشروط التمويل.

وفى نهاية هذا الباب يشير التقرير الى اعتماد الخطة فى تقديراتها على توقعات الجهاز المركزى للتعبئة العامة والاحصاء بالنسبة للسكان والواردة آنفا فى الباب الثانى من الجزء الثانى بهذا التقرير.

الجزء الخامس
الادارة والتنمية الحضرية

يلخص الجزء الخامس من التقرير الملامح الاساسية لهيكل الحكومة المصرية، وينقسم الى الابواب التالية:

الباب الاول: مقدمة

تشير المقدمة (ص ٤٢٥) الى الاهمية التى أولتها الخطة الخمسية القومية ١٩٧٨ – ١٩٨٢ لدور الجهاز الادارى فى نجاح برامج وسياسات التنمية.

الباب الثانى: الاطار الدستورى

يعدد هذا الباب (ص ٤٢٥ – ٤٢٧) الهيئات الدستورية القائمة فى ظل الدستور الدائم الصادر عام ١٩٧١، وهذه الهيئات هى: رئيس الجمهورية ومجلس الشعب (ويتبعه الجهاز المركزى للمحاسبات وجهاز المدعى العام الاشتراكى) ومجلس الشورى ومجلس الوزراء والسلطة القضائية. كما يتناول بقدر من التفصيل الدور المنصوص عليه فى الدستور لكل من هذه الهيئات. كذلك يتضمن هذا الباب اشارة الى التعديلات التى أدخلت على الدستور الدائم فى عام ١٩٨٠.

ويوضح الشكل (٢–١) هيكل الجهاز التنفيذى للحكومة القومية فى مصر، أما الشكل (٢–٢) فيشير الى هيكل مجلس الوزراء والى اللجان والوحدات التابعة له.

الباب الثالث: هيكل الحكومة القومية

يناقش الباب الثالث وظائف الوزارات الرئيسية المعنية بسياسة التنمية الحضرية، وهى تتلخص فى الوظائف التالية: التخطيط والميزانية وسياسات العمال والتنمية والبنية الاساسية.

ويتناول الفصل الاول من هذا الباب (ص ٤٢٨) تطور الوظيفه التخطيطية للجهاز الحكومى

الفنية والتعليمية ، وأخيرا ، العمر والجنس . كما يوضح التقرير أهمية التفاعل بين الخصائص السابقة فى تحديد امكانيات الاسرة أو قابليتها للتحرك المكانى والاقتصادى.

د – ملخص لخصائص المجموعة المستهدفة (ص ٤٠٢،٤٠٣)

يشير شكل (٤–١) الى العلاقة القائمة بين خصائص الاسرة من ناحية – وبين قابليه هذه الاسرة أو امكانياتها للتحرك الاقتصادى والاجتماعى – من ناحية أخرى. الا ان التقرير يبين أن المؤشرات الواردة بهذا الشأن تتسم بالعمومية الى حد كبير بينما لايوجد مجال لاضفاء قدر اكبر من الدقة سوى من خلال جهود بحثية متواصلة. كذلك يوضح التقرير ان النتائج الواردة بشأن تحديد المجموعات المستهدفة تعد خطوطا عامة يمكن للحكومة الاسترشاد بها اذا ما استهدف التأثير – من خلال سياسة حضرية قومية – فى سلوك هذه المجموعات .

الباب الخامس: بيانات التعداد العام للاسكان عام ١٩٧٦

أ – الرصيد الاسكانى (ص ٤٠٤)

يتضمن هذا الفصل تحليلا للرصيد الاسكانى المتاح بالمناطق الحضرية (جدول ٥–١) وبالمستوطنات الرئيسية (جدول ٥–٢). كما يشمل مقارنة بين معدلات نمو هذا الرصيد خلال الفترة ١٩٦٦–١٩٧٦ وبين متوسط معدل النمو السكانى خلال نفس الفترة فى المحافظات المختلفه .

ب – حالة الرصيد الاسكانى (ص ٤٠٤ – ٤٠٩)

يشير التقرير الى عدم تضمن التعداد العام للاسكان لاية بيانات حول حالة الرصيد الاسكانى القائم أو عمر مكوناته . وبالتالى ، فلايتسنى – فى هذا الشأن – سوى القيام بعملية تقدير تقريبى للحالة العامة لهذا الرصيد ، وهو ما قام به فريق الدراسة ويتم عرضه فى هذا الفصل.

وقد تناول التقرير حالة الرصيد الاسكانى من ناحية مدى اتصال الوحدات السكنية بشبكات البنية الاساسية ، والاعمار الفعلية لهذه الوحدات ، وتوزيع الوحدات السكنية تبعا لعدد الغرف . ويتضمن هذا الفصل الجداول (٥–٣) الى (٥–٧) التى تشير الى البيانات التالية : متوسط عدد أفراد الاسرة فى الحضر ومعدلات اشغال الغرف فى عامى ١٩٦٠ و ١٩٧٦ ، نسبة الوحدات السكنية الخالية فى المناطق الحضرية ، تصنيف المبانى السكنية ومبانى العمل فى المناطق الحضرية تبعا لاتصالها بشبكات البنية الاساسية ، نسبة الاسر المتصلة مساكنها بشبكات البنية الاساسية فى عدد من المستوطنات الحضرية ، اعداد الوحدات السكنية بهذه المستوطنات . وكما يتضح من عنوان هذا الباب ، فقد استخلصت البيانات الواردة به من التعداد العام للاسكان عام ١٩٧٦ ، بالاضافه الى التحليلات التى قام بها فريق الدراسة للبيانات التى تم الحصول عليها .

ج – الاسكان فى المدن الكبرى (ص ٤٠٩،٤١٠)

يعرض هذا الفصل لحالة الرصيد الاسكانى القائم بالمدن الرئيسية ، ويدلل على سلامة التقييم من واقع البيانات الواردة بالجداول السابقة (٥–١ الى ٥–٧). كما يجدر التنويه بأن التحليل الوارد فى هذا الفصل يشتمل على مقارنة بين حالة الاسكان فى كل من المدينتين الرئيسيتين (القاهرة والاسكندرية) وبين نظائرهما فى المستوطنات الحضرية الاخرى.

الباب السادس : قيم الاراضى فى المناطق الحضرية

يشير هذا الباب (ص ٤١١) الى عدم توافر احصاءات شاملة عن التغيرات التى طرأت على أسعار الاراضى فى المناطق الحضرية بالدولة . ولكن بالرغم من ذلك، فهو يؤكد على الاتجاهات الملحوظة والخاصة بالاتجاه نحو الارتفاع المطرد فى أسعار الأراضى نظرا لعدم وجود رقابة حكومية على هذه الاسعار ولضغوط التنمية الحضرية فى المناطق المختلفة . ويشتمل الجدول (٦–١) على أمثلة للارتفاعات فى أسعار الأراضى بمناطق مختلفة من القاهرة الكبرى. أما الجدول (٦–٢) فيحتوى على بيان بتطور أسعار الاراضى فى مناطق الاستيطان غير الرسمى خلال الفترة ١٩٦٣ – ١٩٨٠. وقد استمدت بيانات الجدول الاول من الهيئة العامة للاسكان (دراسة استخدامات الاراضى الحضرية بمصر) وأيضا من دراسة اعادة تأهيل وتوسيع شبكة الصرف الصحى بالقاهرة التى قامت باعدادها AMBRIC للهيئة العامة للمجارى والصرف الصحى عام ١٩٨٠. أما بيانات الجدول الثانى فقد تم الحصول عليها من دراسة الاسكان غير الرسمى بمصر (يناير ١٩٨٢). والتى قام باعدادها:

Abt Associates, Dames & Moore

الباب السابع: انتاج المبانى السكنية (١٩٦٠–١٩٧٩)

أ – اسكان القطاع العام (ص ٤١٢، ٤١٣)

يناقش هذا الفصل بايجاز نوعية المبانى السكنية التى يقوم بتشييدها القطاع العام فى مصر. ومرد هذا الايجاز أنه قد سبقت مناقشة تفصيلية لمشروعات اسكان القطاع العام بالجزء الثالث من هذا التقرير تحت عنوان "خصائص مشروعات الاستيطان".

ب – اسكان القطاع الخاص الرسمى (ص ٤١٤)

يشير الجدول (٧–١) الى اسهام القطاع الخاص غير الرسمى فى عمليات تشييد المبانى السكنية فى كل من الريف والحضر بمصر خلال الفترة ١٩٦٠–١٩٧٦، بينما يبين الجدول (٧–٢) مكونات عملية انتاج المبانى السكنية بواسطة القطاع الرسمى خلال نفس الفترة. وقد استخلصت بيانات الجدول الاول من تقرير للبنك الدولى عن "القطاع الحضرى القومى"، فبراير ١٩٨١. أما بيانات الجدول الثانى فتستند الى كتاب المؤشرات الاحصائية الذى يصدره الجهاز المركزى للتعبئة العامة والاحصاء وايضا الى البيانات الصادرة عن وزارة الاسكان والبنك الدولى. كما يوضح الجدول (٧–٣) توزيع انتاج المبانى السكنية تبعا لنوع القطاع وفئات الدخل التى يوجه لها هذا الانتاج.

ج – اسكان القطاع الخاص غير الرسمى (ص ٤١٤–٤١٦)

يناقش هذا الفصل على نحو أكثر تفصيلا من المناقشات الواردة فى الفصلين السابقين بهذا الباب – دور القطاع الخاص غير الرسمى فى انتاج

وقد تم وضع تقدير دخل الاسرة فى عام ٢٠٠٠ بالربط بين دخل الاسرة فى عام ١٩٧٩ وبين توقعات دراسة السياسة القومية للتنمية الحضرية بشأن الناتج القومى الاجمالى حتى عام ٢٠٠٠ (على أساس معدل نمو سنوى قدره ٧٪) ، وذلك كما يتضح من الجدولين (٢-٤)، (٢-٥) المتضمنين للنتائج التى تم التوصل اليها باستخدام هذا الاسلوب . ويقارن الشكل (٢-٢) بين التوزيع الافتراضى للدخل الاسرى فى كل من عامى ١٩٩٠ و ٢٠٠٠ وبين التوزيع الحالى المستند الى بيانات عام ١٩٧٩ .

هـ - تأثير الدعم على توزيع دخل الاسرة عام ١٩٧٩ (ص٣٩٢ - ٣٩٤)

يتضمن هذا الفصل مجموعة الجداول (٢-٦ الى ٢-١١) التى تشتمل على البيانات التالية : قيمة الدعم للسلع الغذائية والطاقة فى عام ١٩٧٩، نصيب سكان الحضر من دعم السلع الغذائية والطاقة عند مستويات مختلفه للانفاق الاسرى ،توزيع الدعم على السلع الغذائية والطاقة فى عام ١٩٧٩ ، نصيب سكان الحضر من دعم السلع الغذائية والطاقة عند مستويات مختلفه للانفاق الاسرى ، توزيع دعم الطاقة فى الحضر بين مستويات مختلفة للانفاق الاسرى ، دعم الطاقة كنسبة من انفاق الاسرة . كما يشتمل هذا الفصل على الشكل (٢-٣) الذى يبين أثر نوعية دعم السلع الغذائية والطاقة على توزيع الدخل النقدى للاسرة فى عام ١٩٧٩.

ويشير التقرير الى أن البيانات السابقة تعد تلخيصا لتقرير أعدته وكالة التنمية الدولية الامريكية عن "دعم السلع الغذائية والطاقة بمصر".

و - ملكية الاصول الرأسمالية والثروة (ص ٣٩٤-٣٩٦)

يبين هذا الفصل مكونات الاصول الرأسمالية والثروة لدى الاسر المصرية ، كما يشير بايجاز - الى بعض التقديرات الموضوعه لهذه المكونات والتى يؤكد فريق الدراسة عدم دقتها لصعوبه حصر مكونات الثروة لدى القطاع العائلى ، وبصفه خاصة مايتمثل منها فى شكل اكتناز ، سواء فى صورة سائلة (المدخرات النقدية المحتجزة بالمنازل) أو فى صورة شبه سائله (المجوهرات). كذلك يؤكد التقرير صعوبة تقدير الحجم الحقيقى لتحويلات المصريين العاملين بالخارج ، ويشير فى هذا الصدد الى تقديرات وكالة التنمية الدولية الامريكية لهذه التحويلات . أما ملكية الاسر للسلع المعمرة فقد استندت تقديرات فريق الدراسة لها الى دراسة "ادارة الصرف الصحى" التى قام بها مكتب شريف الحكيم ومشاركوه بالتعاون مع نوركونسلت NORCONSULT فى فبراير ١٩٨١.

الباب الثالث: هيكل ومعدلات ضريبة الدخل

يشتمل هذا الباب على شرح لملامح نظام الضرائب المباشرة حيث يوضح الوعاء الضريبى، ونسب الخصم ، والاعفاءات المقررة أو المسموح بها للاعباء العائلية بالنسبة لكل من الضرائب التالية :

أ - الضريبة على القيم المنقولة (ص ٣٩٦،٣٩٧)

ب - الضريبة على الاجور والمرتبات (ص ٣٩٧ وجدول ٣-١)

ج - الضريبة على أرباح المهن غير التجارية (ص ٣٩٧ وجدول ٣-٢)

د - الضريبة العامة على الايراد (ص ٣٩٧،٣٩٨ وجدول ٣-٣)

ثم يتناول التقرير فى الفصلين التاليين تحليلا لاداء الجهاز الضريبى على النحو التالى:

هـ - الاداء الفعلى خلال الفترة ١٩٧٤ - ١٩٧٩ (ص ٣٩٨،٣٩٩)

يشير هذا الفصل الى تطور اجمالى الايرادات الضريبية خلال الفترة المشار اليها (جدول ٣-٤) كما يبين تطور قيمة هذه الايرادات كنسبة مئوية من الناتج المحلى الاجمالى خلال نفس الفترة . أما الايرادات من ضرائب الدخل - بصفه خاصة - فقد تم ادراجها فى الجدول (٣-٦)، بينما يظهر الجدول (٣-٧) عدد ممولى الضريبة خلال الفترة ١٩٧٣ - ١٩٧٩ .

و - التحصيل والمتأخرات الضريبية (ص ٣٩٩،٤٠٠)

يتضمن هذا الفصل تقييما لاداء الجهاز الضريبى بمصر من خلال التركيز على كفاءة عملية التحصيل وقيمة المتأخرات (المستحقات) الضريبية مصنفة الى ايرادات بالامكان تحصيلها وأخرى لايعتقد أن بالامكان تحصيلها . ويتضح ذلك من الجدول (٣-٨).

الباب الرابع: تعريف المجموعة المستهدفه بالسياسة القومية للتنمية الحضرية

يحتوى هذا الباب على الفصول التالية :

أ - مقدمة (ص ٤٠٠)

تشمل المقدمه تعريفا للمجموعة المستهدفة مع اعطاء أمثلة لذلك . كما تشير هذه المقدمة الى التعقيد الذى يشوب عملية التعريف هذه عندما ينطوى الامر على برنامج أو سياسة متكاملة أو متعددة الجوانب . كذلك ، توضح الاهمية الماسة لتحديد المجموعة المستهدفه عند وضع أى برنامج أو سياسة توخيا للحفاظ على الموارد وخاصة النادرة منها.

ب - تعريف المجموعة المستهدفه بالسياسة القومية للتنمية الحضرية (ص ٤٠٠،٤٠١)

يبين هذا الفصل أهمية تحديد المجموعات المستهدفه بأية سياسة قومية للتنمية الحضرية ، نظرا لتعقد السياسات من هذا النوع. كما يؤكد عدم جدوى وضع تصنيف واحد للمجموعات المستهدفه ، وان كان من الممكن وضع نموذج عريض يستند الى فكرتين أساسيتين قوامهما : التحرك المكانى والتحرك الاقتصادى.

ج - خصائص الاسرة ذات التأثير فى تكوين المجموعة المستهدفة (ص ٤٠١،٤٠٢)

يحتوى هذا الفصل على حصر لخصائص الاسرة التى تحدث تأثيرا فى عملية تشكيل - أو بالاحرى - تحديد المجموعات المستهدفه . وتتمثل هذه الخصائص فيما يلى: دخل الاسرة ، ملكية الاصول الرأسمالية (المدخرات والاراضى والمبانى والاعمال)، المهارات

الحضرية فى مشروعات مدن العاشر من رمضان والسادات و٦ اكتوبر و١٥ مايو ومشروع اسكان حلوان الجديد ومشروعات التنمية بالاسماعيلية والسويس بالاضافه الى المتوسطات الفردية لتكاليف التنمية فى مشروعات اسكان ذوى الدخل المنخفض بالقاهرة والاسكندرية وأسيوط. كما يتضمن الجدول (٦-١٨) تحليلا مقارنا للمتوسطات الفردية للتكاليف الاستثمارية بالمشروعات المشار اليها. أما الجدول (٦-١٩) فيشير الى "الاصول المجمدة" الناتجه عن تشييد البنية الاساسية بالمدن الجديدة.

ح - الاسترداد المخطط للتكاليف (ص ٣٧٩-٣٨١)

يعرض هذا الفصل بالتحليل لمكونين اساسيين من مكونات عملية استرداد التكاليف، أولهما: استرداد التكاليف الرأسمالية الخاصة بالتشييد من خلال بيع الاراضى، وثانيهما: استرداد تكاليف التمويل عن طريق القروض. وبصورة موجزة، فقد تناول التقرير مسألة استرداد التكاليف الخاصة بمشروعات التنمية من خلال التركيز على النقاط الرئيسية التالية: استرداد التكاليف فى المدن الجديدة وفى مشروعات الاسكان التعاونى، المتوسط الفردى لاسترداد التكاليف فى مشروعات التنمية، استرداد التكاليف فى مشروعات التطوير. كذلك، فقد فصل التقرير البرنامج الكامل والتحليل المقارن للاسترداد المخطط للتكاليف فى مشروعات الاستيطان وذلك كما يتضح من الجدول (٦-٢٠)

ويضم التقرير فى نهاية الجزء الثالث قائمة بليوجرافية توضح مصادر البيانات الخاصة بالمدن والمجتمعات الجديدة و المشروعات الايضاحية والخدمات الخاصة بعملية التنمية الحضرية ومشروعات المياه.

الجزء الرابع
الأسرة والاسكان

الباب الاول: خصائص الاسرة

ينقسم الباب الاول الخاص بتناول خصائص الاسرة الى الفصول التالية:

أ - متوسط حجم الاسرة (ص ٣٨٧، ٣٨٨)

يشير التقرير الى ظاهرة تزايد متوسط حجم الاسرة المصرية خلال الفترة ١٩٦٠ - ١٩٧٦. وقد تم تحليل هذه الظاهرة فى ضوء عاملين اساسيين أولهما: نوع الاسرة، حيث تم التركيز فى هذا الصدد على ظاهرة العائلة الكبيرة بالريف المصرى وبالمدن نتيجة لازمة الاسكان، وثانيهما: عدد الاطفال الاحياء.

ب - معدل نمو عدد الاسر (ص ٣٨٨، ٣٨٩)

يبين الجدولان (١-١) و (١-٢) عدد الاسر ومتوسط معدل الزيادة السنوية فى هذا العدد ومتوسط حجم الاسرة فى كل من المحافظات الريفية والمدن ذات الحجم السكانى ٥٠٠٠٠ نسمة فاكثر وذلك خلال الفترة ١٩٦٠ - ١٩٧٦.

ج - توزيع الاسر تبعا للحجم (ص ٣٨٩)

يتضح توزيع الاسر تبعا للحجم من البيانات الواردة بالجدول (١-٣). ويشير الجدول الى اتساع المدى الذى يتراوح خلاله حجم الاسرة المصرية.

الباب الثانى: تقديرات دخل وانفاق الاسرة الحضرية

أ - مقدمة (ص ٣٨٩)

تشير المقدمة الى استناد غالبية البيانات الواردة بهذا الباب الى آخر مسح للانفاق الاسرى قام به الجهاز المركزى للتعبئة العامة والاحصاء فى عام ١٩٧٤-١٩٧٥. اذ اعتمدت التقديرات الخاصة بالسنوات التالية لذلك على نتائج هذا المسح، حيث تم تحديثها اساسا باستخدام معدلات التضخم.

وقد قام فريق الدراسة بجمع البيانات المتاحه من عمليات المسح الخاصه بدخل وانفاق الاسرة بهدف وضع تقدير لهما خلال عام ١٩٧٩/١٩٨٠. كما استلزم ذلك الاخذ بتقدير وكاله التنمية الدولية الامريكية لانفاق الاسرة فى عام ١٩٧٩ ثم مقارنته بالبيانات الاخرى المتاحه للتعرف على مدى الواقعية التى يتسم بها هذا التقدير (جدول ٢-١).

ب - مقارنة بين بيانات كل من عامى ١٩٧٥ و ١٩٧٩ (ص ٣٨٩، ٣٩٠)

يحتوى الجدول (٢-٢) على مقارنة بين تقديرات وكالة التنمية الدولية الامريكية للدخل فى عام ١٩٧٥ بنظيراتها لعام ١٩٧٩. وقد تم تعديل بيانات ١٩٧٩ الى بيانات سنة الاساس ١٩٧٥ أخذا فى الاعتبار لعامل التضخم المعبر عنه فى صورة الرقم القياسى لاسعار المستهلكين. وقد استخلص الاخير من الكتاب الاحصائى السنوى الذى أصدره الجهاز المركزى للتعبئة العامة والاحصاء فى يوليو ١٩٧٩. ثم طبقت نتيجة تعديل البيانات على كافة منحنيات الدخل والانفاق بهدف توضيح المعدل الحقيقى لنمو الدخل والانفاق خلال فترة السنوات الخمس.

ج - المقارنة مع مجموعات أخرى من البيانات (ص ٣٩٠، ٣٩١)

يشير هذا الفصل الى ما تم من تقديرات مختلفه للدخل فى مناطق صغيرة خلال السنوات القليلة الماضية. وقد قام فريق الدراسة بمراجعة هذه التقديرات لتحقيق الاتساق بينها وبين تقدير وكالة التنمية الدولية الامريكية. ويلخص الجدول (٢-٣) هذه التقديرات. أما الشكل (٢-١) فيشير الى توزيع الاسر الحضرية والوظائف الحضرية بالقطاع العام تبعا للدخل السنوى فى عام ١٩٧٦.

د - تقدير دخل الاسرة حتى عام ٢٠٠٠ (ص ٣٩١، ٣٩٢)

يستهدف هذا التقدير بيان مدى قدرة القطاع العائلى على الاسهام فى التكاليف المرتبطة بتوفير خدمات البنية الاساسية والاسكان مستقبلا

ينبه الى ضرورة أن يؤخذ فى الاعتبار أن التكاليف الواردة ليست التكاليف الفعلية ،وذلك نتيجة لتغير معدلات التنمية وسياساتها.

كما يوضح التقرير أنه ، لوضع البيانات فى صورة تمكن من المقارنة، فقد استخدم مقياس الكفاءة الكلية للاستثمار عند مستويات مختلفه للمعايير العمرانية ، وذلك لتقييم الاساليب المختلفه التى يمكن من خلالها خدمة سكان الحضر بمصر مستقبلا .

ب – معايير كفاءة استخدام الاراضى (ص ٣٦٣)

يبين هذا الفصل أهمية معايير كفاءة استخدام الاراضى لتوفير الخدمات الحضرية بمستويات تكلفة تتفق ومقدرة كلا من الحكومة والمستفيدين . ولتحديد هذه الكفاءة استخدمت المؤشرات التالية :
نصيب الفرد من الاراضى المستخدمه لاغراض حضرية متنوعه (جدول ٦–١) ، والكثافات السكانية فى المجتمعات الجديدة (جدول ٦–٢) ، والكثافات السكانية فى مشروعات اسكان ذوى الدخول المنخفضه فى المدن الكبيرة .

ج – الاسكان (ص ٣٦٦، ٣٦٧)

يلخص الجدول (٦–٣) الحلول الخاصه بمشكلة الاسكان ، والتى تتم الاشارة اليها بالدراسات التطبيقية ، كما يحتوى على تقدير للمجموعات التى يمكن خدمتها من خلال سياسات الاسكان الحالية . ويقسم التقرير مشروعات الاسكان الى النوعيات الثلاثة المتميزة : الاسكان لذوى الدخول المنخفضة (الاقتصادى)، والاسكان لذوى الدخول المتوسطة (المتوسط) والاسكان لذوى الدخول المرتفعة (الفاخر).

د – المرافق (ص ٣٦٨–٣٧١)
١– معايير المياه والصرف الصحى :
يلخص الجدول (٦–٤) المتوسط الفردى (لكل أسرة) للموارد المالية اللازمة للاستثمار فى شبكات المياه والصرف الصحى ، وهذه التقديرات نتاج لدراسة قام بها البنك الدولى حول أفضل السبل الفنية لتوفير المياه والتخلص من المخلفات بالدول النامية . أما الجدول (٦–٥) فيشير الى نسبة التدفق عند الذروة الى متوسط التدفق اليومى بشبكات المياه والصرف الصحى. كذلك ، يلخص الجدول (٦–٦) البيانات الخاصة بمعايير البنية الاساسية المادية فى دراسات مدن العاشر من رمضان والسادات و٦ اكتوبر و١٥ مايو ومشروع اسكان حلوان الجديد ومشروع التنمية بالسويس .

٢– المعايير المقترحة للمياه والصرف الصحى ببعض المدن: بالاضافه الى ما سبق ، يتضمن هذا الفصل المعايير المقترحة للمياه والصرف الصحى بالقاهرة الكبرى والاسكندرية ومدن القناة ، وذلك كما يتضح من الجدول (٦–٧). كما يبين الجدول (٦–٨) المتوسط الفردى للتكاليف الرأسمالية لشبكات المياه والصرف الصحى ولتكاليف التشغيل والصيانة بتلك المدن. أما الجدول (٦–٩) فيحتوى على ملخص لمعايير المياه والصرف الصحى والمتوسط الفردى للتكاليف ومعدلات النمو السنوى بهذه التكاليف.

٣– الايرادات المتوقعة من شبكات المياه والصرف الصحى: يشتمل الجدول (٦–١٠) على البيانات المتعلقة بتوقعات انفاق الاسرة فى عام ١٩٨٤ على الاستهلاك من المياه والصرف الصحى بالقاهرة الكبرى/حلوان ، وذلك بهدف توضيح مدى ملاءمة هيكل التعريفه المستخدم لهذين المرفقين وقد اعتمد التقرير فى استخلاص هذه البيانات على دراسات الادارة والرسوم .

٤– الاستثمارات فى المشروع الاقليمى للمياه : يشمل المشروع دراسة شبكات المياه فى المحافظات المصرية (٢٤ محافظة). ويوضح جدول (٦–١١) المحافظات ذات الاولوية فى مجال اعادة تأهيل الشبكات القائمة ، واستهلاك المياه بها واجمالى التكلفه الناتجه عن عمليات اعادة التأهيل هذه . وقد تم تحديد الاولويات الواردة بالجدول فى ضوء مدى التدهور الذى تعانى منه الشبكات الحالية للمياه بالمحافظات المختلفه .

٥– اجمالى الاستثمارات المقدرة لشبكات المياه والصرف الصحى: يوضح الجدول (٦–١٢) الاستثمارات الاجمالية المقدرة لمدينتى القاهرة والاسكندرية ومدن القناه كل على حدة،وبالنسبة لباقى المدن مجتمعة .

هـ – التحليل المقارن للخدمات الاجتماعية (ص ٣٧١، ٣٧٢)

١– التعليم : يتناول هذا الفصل – من خلال التحليل المقارن – مستوى الخدمات التعليمية مصنفة تبعا لنوعيات المدارس والمعايير العمرانية المتبناه للمنشآت التعليمية بالاضافة الى متوسط تكلفة الوحدة وذلك كما يتضح من الجدول (٦–١٣). كما بنيت تقديرات الاحتياجات من المنشآت المدرسية الموضحه بالجدول على معايير اجمالى عدد الطلبه والمستخلصة من بيانات وزارة التعليم ، وقد تم ادراج هذه المعايير بالجدول (٦–١٤).

٢– معايير الخدمات الصحية : يبين الجدول (٦–١٥) عينة من المعايير التخطيطية الحالية للخدمات الصحية. وتشمل هذه العينة المعايير الخاصه بمدن العاشر من رمضان والسادات و ١٥ مايو واسكان حلوان الجديد. كما تتعلق أساسا بخدمات الرعاية الصحية العامة والمستشفيات الخاصة والمراكز العلاجية والعيادات الخاصه . وقد تم ادراج هذه المعايير كى يصبح بالامكان مقارنتها مع نظيرها المتمثل فى المتوسط الحضرى العام، بهدف تقييم مستوى الخدمات الصحية فى حضر مصر بصورة عامة .

و – المعايير العمرانية والتكاليف بالمناطق الصناعية (ص٣٧٢، ٣٧٣)

يبين التقرير مصادر بيانات التكاليف الخاصة بالمناطق الصناعية والواردة فى الجدول (٦–١٦). وتتمثل هذه المصادر أساسا فيما يلى: الخطط الرئيسية للمدن الجديدة (العاشر من رمضان والسادات والعامرية الجديدة و٦اكتوبر) بالاضافه الى خطة منطقة الصناعات الخفيفه بالسويس . كذلك فقد تم استخلاص جانب من هذه البيانات من واقع تكاليف العطاءات الخاصة باقامة البنية الاساسية فى المرحلة الاولى لكل من مدينتى السادات والعاشر من رمضان. أما المعايير الواردة بالجدول فهى التالية : عدد المنشآت الصناعية ، عدد العاملين بهذه المنشآت ، متوسط مساحة الارض للعامل ، الاستهلاك من المياه والصرف الصحى والكهرباء ، متوسط تكلفه البنية الاساسية بالنسبة لكل منشأة ، ومتوسط التكلفه الاجمالية لكل عامل من واقع بيانات كل من الخطط الرئيسية وتقديرات العطاءات فى عام ١٩٨٠.

ز – المتوسطات الفردية لتكاليف التنمية الحضرية (ص ٣٧٣–٣٧٩)

يحتوى الجدول (٦–١٧) على التقديرات الخاصة بالمتوسطات الفردية لتكاليف التنمية

ج – تحليل دقة اللاندسات (ص ٢٦١ ، ٢٦٢)

تشير التحليلات اللاحقة لفريق دراسة السياسة القومية للتنمية الحضرية الى امكانية الاعتماد على بيانات اللاندسات لملاءمة درجة الدقة التى تتسم بها. الا أنها – من ناحية أخرى – تنبه الى وجود بعض العوامل المؤثرة فى نتائج التحليل الذى تم اجراؤه. وترد هذه العوامل فى التقرير بقدر من التفصيل. كما يوضح فريق الدراسة فى نهاية هذا الفصل الدروس المستفادة من هذه المحاولة.

د – النتائج المستخلصة من بيانات اللاندسات (ص ٢٦٢)

يلخص الجدولان (٤–٢) و (٤–٣) السابق الاشارة اليهما – التغيرات التى حدثت بالنسبة للاستخدامات العامة للاراضى وقد صنفت البيانات تبعا للمحافظات والمستوطنات الحضرية الرئيسية. كما ترد فى نهاية هذا الفصل خرائط اللاندسات (ص٢٦٣ – ٢٨٧) التى قام باعدادها لفريق الدراسة مركز تطبيقات التكنولوجيا بجامعة نيومكسيكو ويتمثل الهدف الاساس من هذه الخرائط فى اظهار توسع ٢٥ منطقة حضرية (مختارة) فوق الاراضى الزراعية. كما تقارن الخرائط وضع المناطق الحضرية فى عام ١٩٧٢ (أو عام ١٩٧٣ بالنسبة لبعض المستوطنات) بوضعها فى عام ١٩٧٨.

الباب الخامس : الملامح الاساسية للمحافظات والمستوطنات

يتناول الباب الخامس الملامح الاساسية للمحافظات والمستوطنات بمصر من خلال الفصلين التاليين:

أ – امكانيات النمو والطاقة الاستيعابية (ص ٢٨٩–٢٩٧)

يشتمل هذا الفصل على مقدمة توضح الهدف من التحليل ، والمتمثل فى التعرف على اكثر المواقع ملاءمة لتوطين الاستثمارات وذلك فى ضوء العائد الاقتصادى وقدره المستوطنة على استيعاب اعداد اضافية من السكان مستقبلا دون التعدى على الاراضى الزراعية. وقد ركزت الدراسة – فى هذا الصدد على المستوطنات التى بلغ حجمها السكانى ٥٠ ٠٠٠ نسمة فاكثر عام ١٩٧٦.

وقد تم قياس امكانيات نمو المستوطنة باستخدام معدلات نمو السكان والعمالة ، بالاضافة الى امكانيات حصول المستوطنة على مدخلات العملية الانتاجية من غير عنصر العمل ، وسهولة اتصالها بالاسواق.

أما الطاقة الاستيعابية للمستوطنة فقد تم النظر اليها فى صور ثلاث: الطاقة الاستيعابية الرأسية ، ويعنى بها زيادة الكثافة ، والطاقة الاستيعابية الافقية ، وتشير الى توسع المستوطنة فوق الاراضى المتاخمة لحدودها، وأخيرا الطاقة الاستيعابية للبنية الاساسية بالمستوطنة.

كذلك ، فقد تضمن هذا الفصل ترتيبا للمستوطنات تبعا لطاقتها الاستيعابية.

وتشتمل الجداول الواردة فى هذا الفصل على البيانات التالية : المستوطنات ذات الحجم السكانى اكثر من ٥٠ ٠٠٠ نسمة ، مؤشر نمو السكان بالمستوطنات الرئيسية ، مؤشرات امكانيات حصول المستوطنات على المدخلات من غير عنصر العمل وسهولة الاتصال بالاسواق ، القدرة على استيعاب السكان داخل نطاق الحدود القائمة فى عام ١٩٧٦، ترتيب المستوطنات فى ضوء طاقتها الاستيعابية ، الحد الادنى لمعايير استهلاك المياه والصرف الصحى (تبعا لحجم المستوطنه)، وأخيرا ، ترتيب معدلات الطاقة الاستيعابية للبنية الاساسية.

كما يتضمن الفصل عددا من الاشكال التى تشير الى ما يلى: مصفوفة امكانيات النمو الاقتصادى بالمستوطنات ، مجموعات الكثافة والاحجام السكانية بالمستوطنات الحضرية ، اختيارات التوسع العمرانى فى اطار الحدود القائمة عام ١٩٧٦ ، النسبة من السكان التى يمكن خدمتها بواسطة الشبكات الحالية للمياه والصرف الصحى والنسبة من الاسر التى تتصل مساكنها حاليا بهذه الشبكات. كذلك تتضمن الاشكال الواردة بالفصل توضيحا للطاقة الاستيعابية الصافية لشبكات المياه والصرف الصحى عند مستويات الكثافة المرتفعة والمتوسطة الفردية لتكاليف هذه الشبكات.

ب – ملاحظات حول الملامح الاساسية للمحافظات والمستوطنات (ص ٢٩٧–٣٦٣)

يوضح هذا الفصل المصادر الرئيسية للبيانات التى تم الحصول عليها عن المحافظات والمستوطنات الحضرية. وتتمثل هذه المصادر فيما يلى: التقارير والنشرات والدراسات الصادرة عن الجهاز المركزى للتعبئة العامة والاحصاء ، واهمها: المؤشرات الاحصائية للاقاليم ، والتعداد القومى العام للسكان والاسكان ، واحصاء العمالة بالعينة – جمال حمدان: شخصية مصر ، القاهرة ، عالم الكتب ، ١٩٨٠ – والمقابلات والدراسات الميدانية والتحليلات التى قام بها فريق الدراسة.

كما يشتمل الفصل على الجدول (٥–٨) الذى يوضح المحافظات والمستوطنات الحضرية التى تم اختيارها لتوضيح ملامحها الاساسية. أما الشكلان (٥–٧) و (٥–٨) فيحتويان على مصفوفتى الطاقة الاستيعابية وامكانيات النمو الاقتصادى بالمستوطنات،ثم ترد فى الصفحات التالية بهذا الفصل (٣٠١–٣٦٢) الخرائط والجداول التى تشير الى الملامح الاساسية والبيانات الخاصة بكل محافظة ومستوطنة على حدة ، وتشتمل على مايلى: الظواهر الطبوغرافية ، والسكان ، والهجرة والعمالة والطاقة الاستيعابية ، والمؤسسات ، وتوزيع الانشطة بين القطاعين العام والخاص بالاضافة الى نوعية الانشطة الاقتصادية الحالية.

الباب السادس: خصائص مشروعات الاستيطان

يشتمل هذا الباب على الفصول التالية :

أ – مقدمة (ص ٣٦٣)

تشير المقدمة الى احتواء الباب على دراسات تطبيقيه للمعايير والتكاليف المتضمنة فى أربعة عشر من مشروعات الاستيطان الحديثة ، بالاضافة الى احتوائه على بيانات احصائية وافية عن ثمانى مشروعات منها . وقد جمعت البيانات الخاصة بالمعايير والتكاليف من الخطط الرئيسية للمدن ، ومن خلال مناقشة برامج التنمية والتكاليف الواردة فى عطاء ات الشركات المنفذة لهذه البرامج ، وأيضا من المتخصصين فى وزارة التعمير . الا أن التقرير

السكان خلال الفترة ١٩٢٧–١٩٧٦ كما يشير جدول (٢–٢) الى توزيع سكان الحضر خلال نفس الفترة ، مصنفين تبعا لحجم المستوطنة . أما جدول (٢–٣) فيبين نسبة اجمالى سكان المستوطنات الحضرية ذات الاحجام المختلفة الى الحجم الاجمالى للسكان بمصر .

ب – توزيع المستوطنات الحضرية فى علاقتة بعدد السكان الريفيين (ص٢٤٣)

يوضح هذا الفصل قوة علاقة الاعتماد المتبادل بين المستوطنات الحضرية – من ناحية – وبين المناطق الريفية المتاخمة لها من ناحية أخرى . وفى هذا الصدد ، يشير الجدول (٢–٤) والشكل (٢–١) الى النصيب النسبى التراكمى للمستوطنات الحضرية من السكان ، وتوزيعهم بين المراكز الواقعة فى نطاق هذه المستوطنات .

ج – ترتيب المستوطنات الحضرية تبعا للحجم (ص ٢٤٣–٢٤٧)

يتضمن التقرير ترتيبا تنازليا للمستوطنات الحضرية فى ضوء حجم السكان وذلك للسنوات ١٩٤٧ و ١٩٦٠ و ١٩٦٦ و١٩٧٦ (الجدول ٢–٥). ويوضح العرض بناء على ذلك الترتيب – انعكاسات انتقال السكان بين المستوطنات على ترتيب المستوطنات الحضرية من حيث الحجم . كما يبين الجدول (٢–٦) توقعات الاتجاه بالنسبة لحجم السكان فى كل من عامى ١٩٨٥ و ٢٠٠٠ وذلك بالنسبة للمستوطنات ذات الحجم السكانى اكثر من ٥٠٠٠٠ نسمة فى عام ١٩٧٦ . كما يحتوى هذا الفصل على الشكل (٢–٢) الذى يشير الى ترتيب المستوطنات الحضرية والتوزيع النسبى لسكان الريف والحضر بين المراكز الواقعة فى نطاق هذه المستوطنات .

د ... اعتبارات الاولية (ص ٢٤٧–٢٥٠)

يوضح التقرير ما تنطوى عليه ظاهرة سيطرة المستوطنات الحضرية الكبيرة على تلك الاصغر منها من مفهوم "الاولية" فى علاقات المستوطنات بعضها ببعض . كما يشير الى وجود ثلاثة أنواع من الاولية بمصر ، وهى: الاولية القومية ، والاولية الاقليمية والاولية المحلية . ويبين الجدول (٢–٦) اعتبارات الاولية المشار اليها فى علاقة المستوطنات الحضرية بعضها ببعض ، وذلك خلال الفترة ١٩٤٧–١٩٧٦.

الباب الثالث: نماذج المستوطنات الحضرية

بادىء ذى بدء ، يبين هذا الباب أن نمو وتطور المستوطنات الحضرية يعد دالة فى العديد من العوامل ، التاريخية والجغرافية والاقتصادية والادارية والديموجرافية والاجتماعية والثقافية . وبالتالى، فان التفاعل المتبادل بين هذه العوامل هو الذى يضفى على كل مستوطنة طبيعتها المميزة .

كما يؤكد التقرير عدم وجود طريقة واحدة مثلى يمكن بمقتضاها وضع نماذج للمستوطنات الحضرية . ولكن فى ضوء هدف الدراسة المتمثل فى رسم سياسة قومية للتنمية الحضرية ، فقد استخدم فريق الدراسة مجموعة مركبة من عوامل الموقع والنشاط الرئيسى للمستوطنة وحجمها السكانى.

أ – الموقع (ص٢٥١)

تم اختيار الموقع كعامل فى تحديد نماذج المستوطنات ، باعتباره يعكس البيئة الجغرافية للمستوطنة ومدى قربها من مصادر الثروات الطبيعية ومن المستوطنات الاخرى، ومناخها ... الخ. وتعد هذه جميعا من العوامل المحددة لحجم وكثافة المستوطنة وامكانية اجتذابها للسكان والانشطه . وقد قسم التقرير المستوطنات الحضرية المصرية – فى ضوء الموقع الذى تحتله الى: مستوطنات ساحلية – مستوطنات داخلية – ومستوطنات واقعة بالاطراف . ويوضح الجدول (٣–١) التقسيم المشار اليه .

ب – النشاط الرئيسى (ص ٢٥١–٢٥٦)

يشير التقرير الى تكون النشاط الرئيسى للمستوطنة من مجموعة من المتغيرات الاقتصادية التى تعبر – بصفة اساسية – عن هيكل العمالة . كما يقسم أنشطة المستوطنات الى الاقسام التالية : انشطة ادارية وحكومية – انشطة خدمية مرتبطة بالزراعة – صناعات استخراجية – صناعات تحويلية – انشطة تجارية – انشطة نقل وتخزين – وانشطة توليد الطاقة .

ج – الحجم السكانى (ص ٢٥٦)

يشير الجدول (٣–٢) الى تقسيم المستوطنات الحضرية تبعا لحجمها السكانى وذلك فى ضوء تقسيم دراسة السياسة القومية للتنمية الحضرية وعدد من الدراسات الاخرى (الموضحه بالجدول).

الباب الرابع: توسع المستوطنات الحضرية

قام الاستشارى – بناء على تكليف من وزارة التعمير بتحليل للاندسات لمنطقتى وادى نهر النيل والدلتا ، وذلك بهدف تحديد مدى التوسع الحضرى فوق الاراضى الزراعية واتجاهات نمو المدن الكبيرة . ويشتمل هذا الباب على نتائج التحليل ، بالاضافة الى خرائط اللاندسات للمدن والمحافظات . وينقسم التحليل المتضمن فى الباب الى الاقسام التالية :

أ – نظام اللاندسات (ص ٢٥٦)

يشرح التقرير – بايجاز – نظام اللاندسات، من حيث الهدف منه والنظام الذى يعمل به وأساليب تسجيل بياناته كما يوضح ذلك أيضا فى الشكلين (٤–١) و (٤–٢).

ب – منهج التحليل (ص ٢٥٧،٢٥٨)

يبين هذا الفصل الجوانب الرئيسية لمنهج تحليل اللاندسات كما ورد بالتقرير وتشمل هذه الجوانب – بصورة مختصره ما يلى: تحليل البيانات الاولية – جمع بيانات التدريب – تصنيف صور اللاندسات – وأخيرا، التصنيف الجغرافى ووضع النتائج الخاصة بالتحليل. ويبين الجدول (٤–١) المحافظات والمدن التى استكمل بالنسبة لها تحليل اللاندسات فى عامى ١٩٧٢ و ١٩٧٨ ، مع الاشارة الى الشهور التى التقطت فيها صور اللاندسات . أما الجدول (٤–٢) فيحتوى على ملخص لبيانات التوزيع الخاصة باللاندسات ، مصنفة طبقا للمحافظات ، وذلك خلال الفترة ١٩٧٢–١٩٧٨. كذلك يتضمن الجدول (٤–٣) البيانات الخاصه بالمستوطنات الحضرية خلال نفس الفترة ، وهى تعد تلخيصا لتوزيع الاراضى الموضح باللاندسات .

الا أن التقرير يشير الى أن بعض البيانات الاساسية والتى يستلزم الامر الالمام بها من جانب صانعى السياسة ومتخذى القرار ، لاتتوافر فى عدد كبير من الدول وخاصة الدول النامية .

د – المقارنة الدولية (ص ٢٢٢ – ٢٢٩)

يؤكد هذا الفصل أهمية الحاجة لاجراء المقارنات بين مصر وغيرها من الدول حتى يتاح الاساس الكافى لتبين مدى امكانية تطبيق السياسات التى لاقت من قبل نجاحا فى الدول الاخرى .

وقد اعتمد التقرير على عدد من المؤشرات الاقتصادية التى تم بموجبها ترتيب مصر ضمن مجموعة من الدول المقاربة لها من حيث الترتيب وتشمل هذه المؤشرات (الموضحه بالجدول ٤–٢) ما يلى: متوسط الدخل الفردى ومعدل نموه ، متوسط المعدل الحدى للادخار القومى ، معدل النمو السنوى للاستثمار المحلى الاجمالى ، ميزان العمليات الجارية كنسبة من الصادرات ، والعجز (أو الفائض) فى ميزان العمليات الجارية .

أما المؤشرات المختارة للمقارنة للدولية فقد تم ادراجها فى الجدول (٤–٣) وتتمثل فيما يلى: متوسط الدخل الفردى ومعدل نموه ، متوسط المعدل السنوى للتضخم ، مكونات الناتج المحلى الاجمالى ، معدل نمو الاستهلاك ، نسبة الاستثمارات المحلية الى اجمالى المدخرات ، المتوسط الفردى لاستهلاك الطاقة ، الواردات من الطاقة كنسبة من الصادرات السلعية ، متوسط معدل النمو السنوى فى كل من الصادرات والواردات ، الرقم القياسى لمعدلات التبادل التجارى ، خدمة الدين كنسبة مئوية من الناتج المحلى الاجمالى ، اجمالى الاحتياطات الدولية ، الحجم السكانى المتوقع عام ٢٠٠٠ ، متوسط معدل نمو السكان ، معدلات المواليد والوفيات والتغير النسبى فيها ، نسبة سكان الحضر الى اجمالى السكان ، نسبة عدد الاطباء الى عدد السكان ، نسبة السكان المتمتعين بمياه الشرب النقية ، عدد السعرات الحرارية التى يحصل عليها الفرد (كنسبة من العدد المطلوب) الامية بين الكبار ، عدد المسجلين بالمدارس الابتدائية والثانوية والتعليم العالى (كنسبة من اجمالى من هم فى سن الالتحاق) ، الانفاق على الدفاع كنسبة من الدخل القومى الاجمالى ، وأخيرا ، المتوسط الفردى لانفاق الحكومة المركزية . كما يوضح جدول (٦–٤) عددا من المؤشرات المختارة للدول مثل: الارض ، والكثافة السكانية ، وحجم قوة العمل ، وأطوال الطرق (بأنواعها) واعداد اجهزة التليفون والراديو والتلفزيون ، والديانات والعقائد .

هـ – المقارنات بين المدن (ص ٢٣٠–٢٣٥)

يشمل هذا الفصل مقارنة بين مدينة الاسكندرية وثلاث من المدن الاخرى ذات الاحجام السكانية المماثلة وهى: استانبول وباريس وسنغافورة كما يشتمل أيضا على مقارنة بين القاهرة وبين ثلاث مدن مقاربة من حيث الحجم وهى نيودلهى وجاكرتا وريودى جانيرو ، وذلك كما يتضح من الجدول (٦–٥) . الا ان التقرير يشير الى أن القاعدة المتاحة من المعلومات للمقارنة بين المدن ليست بنفس كفاية تلك الخاصة بالمقارنة بين الدول. وقد استمدت البيانات الخاصة بالمقارنة بين المدن من احصاء المدن الكبرى بالعالم ، ١٩٨٠ ، الذى تصدره حكومة مدينة طوكيو. كما استبعدت المتوسطات الفردية من المقارنات نظرا لعدم الاتساق بين السنوات التى جمعت عنها البيانات . أما أهم المؤشرات الواردة بالجدول فهى كما يلى: معدلات المواليد والوفيات والزيادة الطبيعية فى السكان ، معدلات وفيات الاطفال ، اعداد المدارس الابتدائية ، نسبة عدد التلاميذ الى المدرسين ، عدد المدارس الثانوية ، نسبة عدد المكتبات الى عدد السكان ، اعداد المستشفيات والعيادات ، الاستهلاك الصناعى من الكهرباء ، اعداد البرقيات المرسلة ، اعداد الاشتراكات فى مجال الخدمة التليفونية متوسط عدد رحلات الركاب ، نسبة عدد الركاب الى عدد السيارات والمقطورات ، واخيرا عدد الركاب المسافرين بطريق الجو.

الجزء الثالث
أنماط الاستيطان

الباب الاول: تعريف المستوطنات الحضرية

أ – التعريف الادارى (ص٢٣٩)

يتناول هذا الفصل التعريف الادارى للمستوطنات الحضرية ، أى التعريف المستند الى القوانين والقرارات . ويبين الجدول (١–١) المستوطنات الحضرية والريفية كما تتضح من خلال التقسيم الادارى لوحدات الحكم المحلى. كما يوضح هذا الفصل اسباب الزيادة فى عدد المستوطنات الحضرية خلال الفترة ١٩٤٧–١٩٧٦.

ب – الاعتبارات الاخرى فى تعريف المستوطنات الحضرية (ص٢٤٠)

يشير هذا الفصل الى التعارض الذى قد يحدث احيانا بين حدود المدينة بالمفهوم الادارى – وبين حدود المنطقة الضريبية. كذلك ، فهناك اعتبارات أخرى تتداخل مع التعريف الادارى من بينها اعتبار الحجم. ويشير جدول (١–٢) الى التداخل بين احجام كل من المستوطنات الحضرية والمستوطنات الريفية فى مصر . أما جدول (١–٣) فيبين نصيب كل من المستوطنات الحضرية (مصنفه تبعا للحجم) من اجمالى سكان الحضر . كذلك يوضح جدول (١–٤) توزيع سكان المستوطنات الحضرية وعدد القرى – مصنفة أيضا تبعا للحجم.

الباب الثانى: ترتيب المستوطنات الحضرية

ينقسم هذا الباب الى الفصول التالية :

أ – ملخص تاريخى للجوانب الديموجرافية (ص٢٤١–٢٤٣)

يتناول هذا الفصل نمو سكان الحضر فى مصر منذ بداية القرن الحالى. فيوضح جدول (٢–١) تطور اعداد سكان الحضر ونسبتهم الى اجمالى عدد

الحديدية ، بالاضافه الى الاشارة الى نظام هيئة السكك الحديدية المصرية وايراداتها ونفقاتها خلال عامى ١٩٧٨ ، ١٩٧٩ .

كما تم توضيح بيانات النقل بالطرق المائية فى الجدول (٥-٢٨).

كذلك ، فقد قام فريق دراسة السياسة القومية للتنمية الحضرية بعرض توقعات الدراسات المختلفه لقطاع النقل وهذه الدراسات هى: الخطة القومية للنقل ، والمرحلة الثانية من الدراسه القومية للنقل ، والمرحلة الثانية من برنامج الاستثمار فى الخطة القومية للنقل.

وتحتوى الجداول (٥-٢٩) الى (٥-٣٤) على تلخيص للتوقعات الخاصة بقطاع النقل حتى عام ٢٠٠٠ والواردة فى الدراسات المشار اليها ، حيث تبين ما يلى: تقديرات حركة نقل الركاب بين الحضر ، تقديرات حجم ملكية السيارات الخاصة ، تقديرات الناتج المحلى الاجمالى والسكان ، البرنامج الاستثمارى للنقل خلال الفترة ٧٦-١٩٨٠ ، والاستثمارات المقترحه لقطاع النقل خلال الفترة التالية (١٩٨١ - ٢٠٠٠) واخيرا ، اجمالى الاستثمارات المخصصه للنقل بين المدن حتى عام ٢٠٠٠ .

وقد اشتمل القسم الاخير من تحليل بيانات قطاع النقل على تحليل التكاليف الرأسمالية وتكاليف التشغيل والصيانة فى هذا القطاع وتحتوى الجداول (٥-٣٥) الى (٥-٤٢) على تحليل تفصيلى لهذه التكاليف ، اذ توضح: التكاليف الاقتصادية لنقل الوحدة (تبعا للوسيله) ، متوسط تكاليف التشغيل فى قطاع النقل (تبعا للوسيله) ، التكاليف الاقتصادية للشحن بالمقطورات ، التكاليف الاقتصادية للنقل المائى ، التكاليف الرأسمالية (الاقتصادية) للنقل بالسكك الحديدية وتكاليف الصيانة فى قطاع النقل بالسكك الحديدية والطرق البرية والمائية و التكاليف الاقتصادية للحفاظ على الطرق المائية والبنية الاساسية .

أما الجداول (٥-٤٣) الى (٥-٤٥) فتشمل مصفوفات القيام والوصول لكل من النقل الداخلى للركاب والشحن الجوى.

ب - الاتصالات السلكية واللاسلكية (ص٢٠١-٢٠٧)

يلخص هذا الفصل الخصائص الاساسية للنظام الحالى للاتصالات السلكية واللاسلكية ، وما يتمتع به من احتمالات نمو ، بالاضافة الى المقترحات الخاصة بتطوير هذا النظام ورفع مستوى الاداء والتنظيم به .

ويوضح الجدول (٥-٤٦) السعة الحالية لشبكة التليفونات (تبعا للاقاليم). أما الجدول (٥-٤٧) فيحوى تلخيصا لتقديرات الطلب على خطوط التليفون والتلغراف والتلكس خلال الفترة ١٩٨٠-١٩٩٩ والواردة فى خطة التنمية الخاصة بدراسة تطوير نظام الخدمة الحالى . كذلك يشير الجدول (٥-٤٨) الى الاستثمارات الرأسمالية المقدرة وتوزيع الخطوط التليفونية حتى عام ٢٠٠٠. أما الشكل (٥-١) فيوضح مواقع السنترالات الحالية والمقترحة بواسطة هيئة المواصلات السلكية واللاسلكية .

ج - الطاقة الكهربائية (ص ٢٠٧-٢١٨)

يتناول هذا الفصل الخاص بشبكات الطاقة الكهربائية فى مصر تحليلا تفصيليا للبيانات المتاحة عن هذا القطاع من قطاعات البنية الاساسية فيشير - بادئ ذى بدء - الى التطور التاريخى لاستخدام الكهرباء فى مصر ، ثم يقيم مدى سهولة الحصول على خدمات شبكات الطاقة فى انحاء الجمهورية ، وذلك كما يبين من الجدولين (٥-٤٩) و (٥-٥٠). كما يعرض التقرير تحليلا لمشروع كهربة الريف ولتنظيم قطاع الكهرباء ، وهو ما يتضح من الجدول (٥-٥١) الذى يشير الى الشركات السبعة لتوزيع الكهرباء . أما التوزيع الاقليمى للكهرباء فيمثل موضوع القسم الخامس من هذا الفصل. ويحوى الجدولان (٥-٥٢) و (٥-٥٣) بيانا بالتوليد الاقليمى للطاقة الحرارية والمائية (تبعا للمناطق) كذلك يشمل هذا الفصل عرضا لوسائل تمويل قطاع الكهرباء فى مصر ولنشاط كل من شركات التوزيع وهيئة الكهرباء المصرية ، وذلك كما يتضح من الجدولين (٥-٥٤) و (٥-٥٥). أما الجدول (٥-٥٦) فيبين التعريفه الجديدة لاستهلاك الكهرباء مصنفه تبعا لمستهلكى الجهد المتوسط والجهد المرتفع . ويوضح التقرير أوجه التفاوت الاقليمى فى تكاليف توليد الطاقة الكهربائية ، حيث يتبين ذلك من الجدولين (٥-٥٧) و (٥-٥٨) ، ثم يتناول التوقعات الواردة بشأن الاحتياجات المستقبليه من الطاقة الكهربائية ومعدلات نمو هذه الاحتياجات (الجدولان ٥-٥٩ ، ٥-٦٠). كما يتضمن الشكلان (٥-٢) و (٥-٣) مقارنة بين الاحتياجات المتوقعة لكل من الوقود المباشر والكهرباء والعلاقة بين نسبة الكهرباء الى اجمالى استهلاك الطاقة وبين متوسط الدخل الفردى. وأخيرا ، يحتوى التقرير على تحليل لبرنامج تنمية الطاقة بصورة عامة والطاقة الكهربائية ، على وجه الخصوص ، وذلك على النحو الذى يتضمنه الجدولان (٥-٦١) و (٥-٦٢) من هذا الفصل .

الباب السادس: التحليل الدولى المقارن

ينقسم هذا الباب الى الفصول التالية :

أ - مقدمة (ص ٢٢٠)

تتضمن المقدمة تعريفا بمحتويات القسم ، حيث تشير الى احتوائه على مجموعات معينة من البيانات ذات الصلة بعملية التنمية الحضرية والتى يتسنى بموجبها اجراء المقارنة بين مصر والدول الاخرى

ب - محددات البيانات (ص ٢٢٠ ، ٢٢١)

يشير هذا الفصل الى المحددات الواردة على البيانات المستخدمة فى اجراء المقارنة وأهمها: عدم كفاية التدريب المقدم للعاملين بالاحصاء ، وعدم سلامة العينات ، والاعتماد على البيانات الادارية التى يشوبها التحيز ، بالاضافة الى عدم وضوح التعريفات - وعدم دقة التحليل. ويوضح الجدول (٦-١) أمثلة على اختلاف التعريفات الخاصة بعملية التحضر بين الدول المختلفة .

ج - مصادر البيانات ومدى توافرها (ص ٢٢١-٢٢٢)

تتمثل المصادر الاساسية التى جمعت منها البيانات الخاصة بالمقارنة الدولية فى أجهزة هيئة الامم المتحدة والبنك الدولى.

أما المصادر الاخرى فتتمثل فى الاحصاءات القومية السنوية ، والدورية بصورة عامة .

٧- قنوات توزيع المنتجات الزراعية : تم الحصول على البيانات المتعلقة بتجارة هذه السلع من عدد من المقابلات الشخصية فى أسواق تجارة الجملة والتجزئة كما تم تقسيم السلع لاغراض التحليل الى محصولات رئيسية ، وخضروات وفواكه ، حيث يختلف اسلوب تسويق كل من هذين النوعين من ناحية مدى التدخل الحكومى. كما يشمل التقرير دراسة حالة لمدينة القاهرة يبين فيها ، بقدر من التفصيل ، قنوات وأساليب توزيع السلع الزراعية .

٨- الاتجاهات المستقبليه لقطاع التجارة الداخلية : يشير التقرير الى عدم توافر المعلومات الكافية عن قطاع التجارة الداخلية على نحو يمكن من تقدير اتجاهات النمو فى المستقبل. الا أن خطة مدينة السادات تشتمل على أكبر قدر متاح من التنبؤات الخاصة بهذا القطاع. وبالتالى، فقد تمت دراسة قطاع التجارة الداخلية بهذه الخطة من خلال الاقسام الفرعية التالية : تجارة جملة يشرف عليها القطاع الحكومى ، تجارة جملة يشرف عليها القطاع الخاص ، تجارة تجزئة يشرف عليها القطاع الحكومى ، وتجارة تجزئة يشرف عليها القطاع الخاص ، ثم تجارة جملة وتجارة تجزئة على المستوى الاقليمى.

٩- الاسكان الادارى بالقاهرة : تناول التقرير بالتحليل ظروف الاسكان الادارى لما له من ارتباط بعملية التنمية الحضرية . ويشير - بداءه - الى قلة وعدم شمول الدراسات التى أجريت حتى الان حول هذا الموضوع. وقد قام فريق الدراسة بجمع البيانات عن المعروض من الاسكان الادارى بالقاهرة من الهيئة العامة للاستثمار والمناطق الحرة ، وأيضا من احدى الدراسات الخاصة التى أجريت عام ١٩٧٨.

وأخيرا ، فان الجداول (٤ - ٤٤) تشتمل على البيانات التى اتيح الحصول عليها عن قطاع التجارة الداخلية بقسميه : تجارة الجملة والتجزئة وأيضا عن الاسكان الادارى. وتشمل هذه البيانات ما يلى: السكان ذوى النشاط الاقتصادى فى قطاع التجارة الداخلية ، اعداد الباعة الجائلين، التوزيع النسبى للعمالة بين الانشطة التجارية الرئيسية ، مدى تيسر الحصول على خدمات التجاره الداخلية ، التوزيع النسبى للعمالة التجارية بين القطاعين العام والخاص ، وأخيرا ، العمالة بتجارة الجملة وتجارة التجزئة فى خطة مدينة السادات (عند بلوغ حجمها السكانى ... ٥٠٠ نسمة).

د - قطاع الصناعات الصغيرة (ص ١٦٨-١٧٨)

يبدأ هذا الفصل بتعريف الصناعات الصغيرة ثم الاشارة الى الروابط القائمة والتجمعات المكانية للانشطة الصناعية الصغيرة فى القاهرة كما يوضح على وجه التحديد - الانشطة الصناعية الصغيرة المستهدفة بالسياسة الصناعية وحجم العمالة بهذه الانشطة مصنفا تبعا لنوع النشاط بالاضافة الى حجم العمالة فى قطاع الصناعة التحويلية بصورة عامة مصنفا أيضا تبعا لنوع النشاط. كذلك ، يشمل التقرير الاشارة الى المجموعات المهنية المختلفة فى قطاع الصناعات الصغيرة . كما يتناول بالتحليل انتاجية العمالة فى هذا القطاع . أما فيما يتعلق بدور الحكومة فى مجال الصناعات الصغيرة فقد تناوله التقرير من حيث الجوانب التالية : المؤسسات الحكومية المعنية بهذا المجال، والدعم المالى والدعم الفنى الذى تقدمه المؤسسات المالية والفنية الحكومية المتخصصه .

وتشتمل الجداول (٤-٤٥) الى (٤-٥٥) على البيانات الخاصة بقطاع الصناعات الصغيرة والتى يمكن ايجازها فيما يلى: العمالة فى الصناعات الصغيرة ، وتوزيعها بين منشآت القطاع الخاص (التى يعمل بها من ١ الى ٤٩ عاملا)، اعداد الحرفيين العاملين لحسابهم الخاص ، وعمال الورش والخدمات بالقطاع غير الرسمى (عدا الزراعة) ، وأخيرا توزيع القيمة المضافة والانتاجية بقطاع الصناعات الصغيرة .

الباب الخامس: الشبكات القومية للبنية الاساسية

أ - النقل (ص١٨٠-٢٠٠)

يتناول هذا الفصل بالتحليل البيانات المتعلقة بقطاع النقل فى مصر. وقد تم لاغراض هذا التحليل - تقسيم القطاع تبعا للوسيلة الرئيسية المتبعة ، حيث صنف الى: نقل بالطرق البرية ، ونقل بالسكك الحديدية ، ونقل مائى.

وبادئ ذى بدء ، ترد بالتقرير دراسة لحركة نقل الركاب والبضائع داخليا وخارجيا (من خلال الموانى والمطارات).

وتوضح الجداول (٥-١) الى (٥-٧) البيانات المتعلقة بحركة نقل الركاب والبضائع كما يلى: نقل البضائع مصنفا تبعا للوسيلة ، التنبؤات بحركة الشحن (للصادرات والواردات) خلال الفترة ١٩٨٠-٢٠٠٠ ؛ حجم حركة وصول الركاب الى مطار القاهرة الدولى ونسبة السائحين الى هذا الحجم ، النقل الجوى للركاب بين المدن . كما توضح هذه الجداول اجمالى عدد الكيلومترات المقطوعة لنقل الركاب - تبعا للوسيلة - بين الحضر بالاضافه الى متوسط عدد الكيلومترات المقطوعة لكل راكب .

وفيما يتعلق بالنقل بالطرق البرية - على وجه الخصوص فقد تناوله التقرير بالتحليل من خلال التركيز أيضا على نقل الركاب ونقل البضائع بالطرق البرية ، كما أفرد تحليل خاص للنقل بالطرق البرية من والى القاهرة.

وتتضمن الجداول (٥-٨) الى (٥-٢٣) البيانات التى أتيح لفريق الدراسة الحصول عليها بشأن حركة النقل بالطرق البرية . وتشمل ما يلى: أطوال الطرق المرصوفه ، مصنفة تبعا لتقسيم مصلحة الطرق والكبارى للاقاليم ، حالة الطرق المرصوفه ، التوزيع الاقليمى لاسطول النقل البرى التعاونى ، هيكل أسطول النقل البرى ، الاعداد المقدرة للسيارات والكيلومترات المقطوعة من خلال حركة النقل البرى ، التغير فى التوزيع النسبى لسيارات النقل بين المحافظات ، التوزيع النسبى للسيارات الخاصة وسيارات الاجره بين المحافظات ، التوزيع الاقليمى لاسطول سيارات الاتوبيس العاملة بين المدن ، الخصائص الاساسية لحركة نقل الركاب فى ضوء مسح عام على المستوى القومى ، تعريفات الركوب بسيارات النقل العام ، وأخيرا الاحجام المتوقعة لحركة نقل الركاب بالقاهرة الكبرى والمناطق الحضرية المجاورة خلال الفترة ١٩٧٥-٢٠٠٠ .

أما تحليل بيانات النقل بالسكك الحديدية ، فقد تم أيضا بتصنيفه الى نقل للركاب ونقل للبضائع. وتشير الجداول (٥-٢٤) الى (٥-٢٧) الى حجم حركة نقل البضائع والركاب بالسكك

للزراعة وأيضا المشكلات المتعلقة بتصنيف التربة. وبالاضافة الى ذلك يشير التقرير الى التنبؤات الرئيسية الخاصة بالقطاع ومن بينها ما يلى: نسبة اسهام القطاع الزراعى فى الناتج المحلى الاجمالى ، ودرجة الاكتفاء الذاتى فى المجال الغذائى ، والتنبؤات الخاصة بالمناطق الزراعية المختلفة ، بالاضافة الى تنبؤات الخطة الرئيسية للمياه.

أما فيما يتعلق بقضايا استصلاح الاراضى ، فيعرض لها التقرير بداءة – من منظور تاريخى ثم يتناول بالتحليل تكاليف استصلاح الاراضى وما تضمنته الخطط الموضوعة للاستصلاح بالنسبة للانتاجية والاحتياجات من المياه والقيود الادارية والتمويلية الواردة على هذه الخطط.

كذلك ، يتناول التقرير التوقعات الخاصة بالانتاج الزراعى ويركز على أهمية تحقيق التكامل لبرامج التنمية الريفية وذلك من خلال مناقشة للمعوقات التى تواجه هذه البرامج ولدور جهاز اعادة بناء وتنمية القرية المصرية. كما يولى التقرير اهمية خاصة للتجارب الميدانية فى خطط التنمية الريفية وللدور الذى تلعبه الموارد المحلية فى دفع هذه التنمية.

ويشتمل هذا الفصل على الجداول (٤–١) الى (٤–١٨) التى توضح الخصائص الرئيسية للقطاع الزراعى ، حيث تتضمن ما يلى: طبيعة التربة فى الاراضى المزروعة ، الانتاج الغذائى وتوقعاته حتى عام ٢٠٠٠ ، الانتاج من المحاصيل النيلية والصيفية والشتوية ، الاحتياجات من العمالة فى الاراضى المزروعة ، القنوات الرئيسية للرى ، التركيب المحصولى وتوقعاته ، الجهود المبذولة فى مجال استصلاح الاراضى حتى الان والتكاليف الرأسمالية لهذة الجهود ، تصنيف التربة فى الاراضى الجديدة ، وأيضا التوقعات الخاصة بجهود استصلاح الاراضى حتى عام ٢٠٠٠ . كما توضح الخريطة (٤–١) نوعية التربة فى الاراضى المصرية ، بينما يشير الشكل (٤–١) الى المناطق الزراعية الرئيسية بمصر.

ب – قطاع الصناعة التحويلية (ص ١٤٦–١٦١)

يشتمل هذا الفصل على مقدمة توضح المزيج الحالى للانتاج الصناعى بالاضافة الى التغيرات

التى طرأت على هيكل الناتج وتوطن الانشطة الصناعية.

كما يتناول تعريفا للصناعات ذات الامكانية للنمو على المستوى الاقليمى وذلك من خلال دراسة نمط التوطن الاقليمى للانشطة الصناعية الاساسية. وفى هذا الصدد يقسم التقرير المحافظات المختلفة الى محافظات ترتفع بها نسبة العمالة الصناعية عن المتوسط القومى ومحافظات أخرى تنخفض بها هذه النسبة عن نظيرتها على المستوى القومى.

أما فيما يتعلق بالاستثمارات الصناعية ، فقد تناول التقرير تطورها خلال النصف الثانى من السبعينيات بالاضافة الى عرض الاهداف الرئيسية والمخصصات الاستثمارية القطاعية ونمط التوطن المستهدف للاستثمارات الصناعية فى الخطة الخمسية ١٩٨٤/٨٠.

كذلك، فقد عرض التقرير للقوانين المنظمة لعملية الاستثمار الصناعى (القانون ٤٣ لسنة ٧٤ وقانون المجتمعات الجديدة رقم ٥٩ لسنة ٧٩) كما يعرض للمعوقات الادارية ولاساليب استخراج التراخيص الصناعية.

وتحتوى الجداول الواردة بهذا الفصل (٤–١٩ الى ٤–٣٦) على البيانات التالية: الاهداف القطاعية وتطور معدلات النمو الصناعى ، خصائص الصناعة التحويلية (المنشآت ، العمالة ، الاجور ، الناتج والقيمة المضافة المتحققه فى هذا القطاع خلال النصف الثانى من السبعنيات ، التوزيع المكانى للصناعات والعمالة والقيمة المضافة فى قطاع الصناعة التحويلية ، معاملات التوطن ، الاستثمارات الصناعية واداء القطاع الصناعى فى منتصف السبعنيات ، خطة الاستثمار الصناعى عام ١٩٨٠، توزيع استثمارات القطاع العام الصناعى، الاستثمارات الصناعية المخططة فى الخطة الخمسية الحالية (١٩٨٤/٨٠) ، تأثير سياسة الانفتاح الاقتصادى على الاستثمارات الخاصة ، وأخيرا بيان بالمشروعات التى تمت الموافقة على اقامتها فى ظل القانون ٤٣ حتى يوليو ١٩٨٠.

ج – قطاع التجارة الداخلية وسوق العمل فى الحضر (ص ١٦١–١٦٨)

يشتمل هذا الفصل على الاقسام الفرعية التالية:

١– مصادر البيانات: يوضح التقرير أن بيانات العمالة فى انشطة تجارة الجملة والتجزئة تم استخلاصها من بيانات التعداد العام للسكان لسنة ١٩٧٦. أما فيما يتعلق بتحليل اسهام القطاع فى نمو الاقتصاد المصرى فقد تم الاستناد الى ورقة عمل أعدتها وزارة الاقتصاد تشتمل على سلسلة زمنية للاستثمار الثابت فى كل القطاعات حتى عام ١٩٧٩/٧٨.

٢– العمالة فى قطاع التجارة الداخلية وعلاقتها بالنمو الاقتصادى: استمدت البيانات الخاصة بهذا الموضوع من تقرير لوزارة الاقتصاد عن "التطورات الاقتصادية الحديثة فى الاقتصاد المصرى" – ١٩٨١.

٣– التحضر والعمالة فى قطاع التجارة الداخلية: يوضح التقرير مدى أهمية حجم العمالة الهامشية التى تنشأ نتيجة لاطراد الهجرة من الريف الى الحضر ، وانخفاض درجة مهارة هذا النوع من انواع العمالة.

٤– مدى تيسر الحصول على الخدمات التجارية: تم قياس ذلك من خلال تقدير نسبة العمالة فى تجارة التجزئة الى الحجم الاجمالى للسكان كما يشمل التقرير مقارنة لهذه النسبة فى كل من المحافظات الريفية والحضرية والمناطق الحرة.

٥– التجارة غير الرسمية (الباعة الجائلون): يرد فى التقرير تعريف هذا النوع من أنواع التجارة كما وضعته منظمة العمل الدولية. كما يشير الى حجم العمالة فى هذا القطاع طبقا لاحصاءات الجهاز المركزى للتعبئة العامة والاحصاء.

٦– الاهمية النسبية للقطاعين العام والخاص فى مجال التجارة الداخلية: يبين التقرير التوزيع النسبى للانشطة التجارية بين القطاعين العام والخاص كما ورد فى احصاءات الجهاز المركزى للتعبئة العامة والاحصاء عام ١٩٧٦.

- وزارة المالية (الحسابات الحكومية)

- الجهاز المركزى للتعبئة العامة والاحصاء (العمالة)

أما المصادر الدولية التى استمدت منها البيانات الواردة فى التقرير فتتمثل فى دراستى البنك الدولى وصندوق النقد الدولى التاليتين:

- IBRD, Arab Republic of Egypt - Domestic Resources Mobilization and Growth Prospects for the 1980's, Report No. 3123 EGT, December 1980.

- IMF, Arab Republic of Egypt - Recent Developments, SM/81/13, January 1981

ب - استراتيجية التنمية المصرية (ص١١٧-١٢٦)

يعد هذا الفصل تلخيصا للنسخة الانجليزية من خطة التنمية ١٩٨٤/١٩٨٠ التى أعدتها وزارة التخطيط وقامت بنشرها فى نوفمبر ١٩٧٩. وينقسم ملخص الخطة الى الاقسام التالية:

١- مقدمة: توضح موقع مصر فى الشرق الاوسط وأهمية عملية السلام بالنسبة للاقتصاد القومى (الفقرات ١-٤) كما تشير المقدمة الى خطورة الضغوط السكانية وعمليات التحضر السريعة وأهمية الاسراع برفع مستويات المعيشة (الفقرات ٥-١٠).

٢- شروط التنمية: تركز الخطة فى هذا الصدد على ثلاث من الموضوعات الهامة التى بدأ الاهتمام بها منذ اعداد خطة ١٩٨٢/٧٨ وهى تحويل نسبة كبيرة من الموارد الى الاستخدامات العسكرية خلال الفترة ١٩٧٣/٦٧، وتزايد اعباء الدعم منذ عام ١٩٧٣، وأخيرا سياسة الانفتاح الاقتصادى وانعكاساتها الهامة على الادارة الاقتصادية بمصر (الفقرات ١١-١٧)

٣- الادارة الاقتصادية: يتناول التقرير ما ورد بالخطة عن دور بنك الاستثمار القومى فى محاولة اصلاح عملية ادارة التنمية بعد ما لوحظ من قصور فى الرقابة على الانفاق الاستثمارى (الفقرات ١٨-٢١).

٤- استراتيجية استخدام المعونة الاجنبية: يركز التقرير على ما جاء بالخطة من توقعات حول قصور العائد من النقد الاجنبى عن تغطية الاحتياجات الى هذا المورد وأهمية ترشيد استخدامه (الفقرات ٢٢-٣١).

٥- الادارة المالية وسياسات الاسعار والدخول: تناولت الخطة قضية الدعم فى علاقتها بالادارة المالية ومدلولاتها بالنسبة لسياسات الاسعار والاجور (الفقرات ٣٢-٣٧).

٦- الاطار العام للخطة: يشير التقرير الى أن الخطة الخمسية ١٩٨٤/٨٠ تعد استمرارا للتخطيط متوسط الاجل المتبع فى الاقتصاد المصرى. كما يوضح ما تقوم عليه الخطة من افتراضات منطقية تتسم بالتركيز على رفع معدلات التنمية والنهوض بالقطاع العام واستمرار التدفقات الرأسمالية الخارجية، خاصة فى بداية الخطة (الفقرات ٣٨-٤٣)

٧- استراتيجية النمو: يركز التقرير على توضيح ما تستهدفه الخطة من رفع معدل النمو من حول ٨٪ الى ١٠٪ سنويا (الفقرات ٤٤-٥٠).

وبالاضافة الى ما سبق فهناك عدد من الموضوعات الهامة التى وردت فى خطة التنمية والتى عمد التقرير الى ابرازها لما لها من انعكاسات على عملية التنمية الحضرية. وتتمثل هذه الموضوعات فيما يلى:

٨- التنمية الريفية (الفقرات ٥١-٥٤)

٩- الاسكان (الفقرات ٥٥-٥٧)

١٠- النمو الصناعى (الفقرة ٥٨)

١١- استراتيجية الاستثمار (الفقرتان ٥٩ و ٦٠)

١٢- التوازن العام فى الخطة (الفقرات ٦١-٦٧)

وبالاضافة الى ذلك، يرد مع ملخص الخطة عدد من الجداول (٣-١ الى ٣-٢١) التى توضح تطور عدد من المتغيرات الاقتصادية القومية خلال النصف الثانى من السبعينيات، ومن بينها: الناتج المحلى الاجمالى، الاستثمار الاجمالى، العمالة، ميزان المدفوعات، الدين العام، الايرادات الحكومية، موازنات البنك المركزى والبنوك التجارية، الارقام القياسية لاسعار المستهلكين، توقعات المعونة الاجنبية والدين العام الخارجى، النمو المستهدف للناتج المحلى الاجمالى، والتوزيع القطاعى للاستثمارات.

ج - تمويل الاستثمارات (ص ١٢٦-١٣١)

يتناول التقرير فى هذا الفصل المتطلبات الاستثمارية للخطة الخمسية للتنمية واتجاهات الادخار وتوقعاته، بالاضافة الى توقعات التمويل الاجنبى والتغيرات المطلوبة فى السياسات المالية لزيادة المدخرات الوطنية. وفى هذا الصدد، تتضمن الجداول (٣-٢٢) الى (٣-٢٧) بيانات بشأن حجم الادخار القومى ومعدلاته والميل الحدى للادخار بالاضافة الى تقدير المدخرات خلال فترة الخطة والتوقعات الخاصة بحجم هذه المدخرات فى عام ٢٠٠٠، وتطور الادخار العام.

د - التنبؤات الاقتصادية على المستوى القومى:

يتضمن الجدول (٣-٢٨) توقعات فريق دراسة السياسة القومية للتنمية الحضرية لما سيطرأ من تطور على المتغيرات الاقتصادية القومية. ويتضح المنهج المتبع فى القيام بهذه التنبؤات فى تقرير الحالة وتقرير العمل المرحلى للدراسة. أما الجداول (٣-٢٩) الى (٣-٣٢) فتعد تجميعا للتنبؤات التى قامت بها الدراسات الاخرى السابقة لدراسة السياسة القومية للتنمية الحضرية. وقد تم ادراجها لبيان المدى الذى تقع خلاله التنبؤات الخاصة بمعدل نمو الناتج المحلى الاجمالى عند القيام بالتخطيط الاقتصادى.

الباب الرابع: الملامح القطاعية للاقتصاد القومى

أ - القطاع الزراعى (ص ١٣٢-١٤٦)

يتضمن هذا الفصل خلفية تاريخية تتناول تطور القطاع الزراعى فى مصر كما يشتمل على مناقشة للقضايا الرئيسية الخاصة بهذا القطاع وأهمها تلك المتعلقة بالاسعار والمياه والصرف والعمالة والمساحات المتوافرة من الاراضى القابلة

٣ـ خصائص المهاجرين: يركز التقرير على أهمية دراسة خصائص المهاجرين حيث يمثل ذلك تحديدا للفئات السكانية المتسمة بقدرة أكبر على التحرك ، كما ينطوى على امكانية تحديد التأثيرات المختلفة التى يمارسها المهاجرون الجدد على المجتمعات التى انتقلوا اليها.

ويتضمن هذا الفصل عددا من الجداول (٢-٩ الى ٢-١٦) التى توضح اعداد المهاجرين الجدد وتوزيعهم بالاضافة الى التركيب العمرى والمهنى والتعليمى لاولئك المهاجرين ، مصنفين تبعا للمناطق التى انتقلوا اليها. كما يحتوى على عدد من الخرائط التى تبين مواطن الاقامة السابقة للمهاجرين الجدد الى القاهرة والاسكندرية والاسماعيلية وبورسعيد والسويس (الخرائط من ٢-١ الى ٢-٥).

د ـ بعض الخصائص الديموجرافية الاضافية (ص ٨٠-١٠٣)

يشير هذا الفصل الى عدد من المتغيرات الاساسية المتعلقة بالظواهر الديموجرافية التى لم تتم مناقشتها فى مواضع أخرى من التقرير . وقد جاءت البيانات الواردة بهذا الفصل بنفس الصورة التى وردت بها فى المصادر الاصلية المختلفة ، ومن ثم فهناك عدد من أوجه التباين بين التقديرات المختلفة نتيجة لاختلاف الاساليب المتبعة تبعا لاختلاف مصادر البيانات . ويمكن تلخيص أهم المتغيرات الاضافية الى وردت بشأنها بيانات فى هذا الفصل فيما يلى:

١ـ بيانات ديموجرافية : التركيب العمرى، تقسيم السكان تبعا للجنس ، وتكوين الاسر. (الجداول من ٢-١٧ الى ٢-٢٦).

٢ـ بيانات الدخل و الثروة (الجداول من ٢-٢٧ الى ٢-٣٢).

٣ـ الخصائص التعليمية (الجداول من ٢-٣٣ الى ٢-٤٣)

٤ـ الخصائص الصحية (الجداول من ٢-٤٤ الى ٢-٥٤).

هـ ـ التوقعات السكانية البديلة حتى عام ٢٠٠٠. (ص ١٠٣-١٠٦)

يستهدف هذا الفصل طرح التقديرات البديلة لحجم السكان وتوزيعهم حتى عام ٢٠٠٠ كى يتسنى تحديد الاعداد المطلوب توفير الخدمات لها فى ضوء استراتيجيات الاستيطان المقترحة. وتنحصر التقديرات البديلة التى وردت بهذا الفصل فيما يلى:

١ـ مجموعة تقديرات رابيد RAPID التى اعدتها بتكليف من وكالة التنمية الدولية الامريكية.

٢ـ تقديرات الجهاز المركزى للتعبئة العامة والاحصاء فى عام ١٩٧٢.

٣ـ تقديرات الجهاز المركزى للتعبئة العامة والاحصاء فى عام ١٩٨٠.

٤ـ تقديرات ساتين Satin

٥ـ تقديرات واتكينز Watkins

٦ـ تقديرات البنك الدولى

٧ـ تقديرات الامم المتحدة

كما يتضمن التقرير فى نهاية هذا الفصل ملخصا للتقديرات المشار اليها. وقد تم توضيح البيانات التى تضمنتها هذه التقديرات فى الجداول (٢-٥٥) الى (٢-٦٣).

و ـ توقعات دراسة السياسة القومية للتنمية الحضرية حتى عام ٢٠٠٠ (ص١٠٦ - ١١٤)

١ـ التوقعات: يشير الشكل (٢-١) والجداول (٢-٦٤) الى (٢-٦٨) الواردة فى هذا الفصل الى توقعات الحجم الاجمالى للسكان ، وذلك حسبما استمد من الافتراضات البديلة الخاصة بمدى الانخفاض فى معدل نمو السكان .

٢ـ منهج التقدير: تمثل المنهج المتبع فى تحليل مقارن للتوقعات السبع البديلة التى أشير اليها فى الفصل (هـ) أعلاه

٣ـ التوقعات الخاصة بالعمالة : تم تصنيف السكان تبعا للعمر والجنس بهدف التوصل الى تقديرات حجم العمالة حتى عام ٢٠٠٠.وتتضمن الجداول (٢-٦٩) الى (٢-٧٤) هذه التوقعات على نحو تفصيلى. كما تحتوى الاشكال (٢-١) الى (٢-٤) على توضيح لتوقعات حجم السكان والقوى العاملة وسكان الحضر والهيكل العمرى للسكان

٤ـ نمط التوقع المستند للاتجاه فى المستوطنات المختلفة : تستند توقعات الاتجاه الواردة بالتقرير والمصنفة تبعا للمناطق ومساحة المنطقة الحضرية (جدول ٢-٧٥) الى بيانات التعداد العام للسكان (١٩٧٦) كما تستند الى معدلات النمو السكانى بالمستوطنات المختلفة خلال الفترة ١٩٦٠-١٩٧٦ وأيضا الى التوقعات على المستوى القومى ـ الخاصة بحجم سكان الحضر، وقد وردت هذه التوقعات الاخيرة باعتبارها مؤشرا للمدى الذى تصل اليه أية توقعات يمكن أن ترد فى هذا الصدد.

الباب الثالث: ملامح الاقتصاد القومى الكلى

يحتوى هذا الباب على سلسلة زمنية للمتغيرات الاقتصادية على مستوى الاقتصاد القومى الكلى ، بالاضافة الى تلخيص لاستراتيجية التنمية بمصر (١٩٨٠-١٩٨٤) وتوقعات فريق دراسة السياسة القومية للتنمية الحضرية والهيئات الاخرى بشأن المتغيرات الاقتصادية القومية حتى عام ٢٠٠٠ .

أ ـ السلسلة الزمنية للبيانات (ص ١١٦)

يشير التقرير الى ان البيانات الخاصة بالمتغيرات الاقتصادية مستمدة من المصادر الحكومية . وتتمثل هذه المصادر فى الجهات التالية :

ـ وزارة التخطيط (الحسابات القومية للدولة)

ـ البنك المركزى المصرى (البيانات الخاصة بالعلاقات الاقتصادية الدولية)

الفصل مقارنة بين نسبة الانتاج الاستخراجى الى الناتج المحلى الاجمالى – من ناحية – وبين نسبة الصادرات الاستخراجية الى اجمالى الصادرات – من ناحية أخرى ، وذلك كما يتضح من جدول (١–٧).

ويحتوى التقرير على عدد من الخرائط التى توضح الموارد المعدنية المستغلة حاليا ، وهى الخرائط (١–٤) و(١–٦) و (١–٨) أما الخرائط (١–٥) و(١–٧) و(١–٩) فتبين الاحتياطى المقدر من هذه الثروات .

د – السياحة (ص ٢٤–٣١)

ترد فى هذا الفصل مناقشة لخصائص قطاع السياحة فى مصر من حيث وضعه الحالى وامكانيات تنمية هذا القطاع على نحو يحقق زيادة الايرادات السياحية وبالتالى نمو الدخل القومى. ويشتمل التقرير فى هذا الصدد على تقدير لتطور الايرادات السياحية خلال الفترة ٧٦–١٩٩٠ (جدول ١–٨) كما يبين أهم المعالم السياحية بالمناطق المختلفة سواء أكانت هذه المعالم طبيعية أو تاريخية/دينية أو معاصرة . وقد تم تلخيصها بالجدول (١–٩) وبالخريطة (١–١٠) ويتضمن الجدول المشار اليه ملخصا لمعالم الاستراتيجية المقترحة لتنمية القطاع. أما أهم الموضوعات الاخرى التى ترد فى هذا الفصل فتتضمن ما يلى: مدى جاذبية المواقع السياحية المختلفة للسياح (جدول ١–١٠) والمدخل الى تنمية سوق السياحة فى مصر (جدول ١–١١) واحتمالات النمو فى طاقة الفنادق ذات الاربع والخمس نجوم (جدول ١–١٢). كما يحتوى التقرير على تقدير لتطور العمالة والدخل بالقطاع خلال الفترة ٧٦–١٩٩٠ (جدول ١–١٣) ومقارنة لاسهام السياحة فى الناتج المحلى الاجمالى على مدى الفترة المشار اليها . وأخيرا ، يتضمن هذا الفصل تقديرا لتكاليف التنمية السياحية حتى عام ١٩٩٠ .

هـ – الموارد المائية (ص ٣٢–٦٨)

يتضمن الفصل الخاص بالموارد المائية تجميعا وتلخيصا للدراسات والبحوث والتقارير الخاصة بالموارد المائية فى مصر. ويتمثل الهدف من وراء ذلك فى توضيح حالة هذا المورد الحيوى الهام وربط ذلك بامكانيات التنمية الحضرية حتى عام ٢٠٠٠ . وقد تضمن التقرير تقسيما للاراضى المصرية الى عشرة أقاليم رئيسية يتسم كل منها بتماثل الخصائص الهيدرولوجية بين اجزائه بالاضافة الى تشابه الظروف الجغرافية لمكونات كل من هذه الاقاليم.

وبصورة عامة ، يحتوى التقرير على تلخيص للموارد المائية المتاحة لدعم عملية التنمية الحضرية فى كل من الاقاليم العشر حتى عام ٢٠٠٠ (جدول ١–١٦). كما يتضمن تقديرا للحد الاقصى للطلب اليومى على المياه (جدول ١–١٧) بالاضافة الى وصف لحالة المياه الجوفية فى الاراضى المصرية بصورة عامة (الجداول ١–١٩ الى ١–٢١). أما الجداول (١–٢٢) الى (١–٤٦) فتتناول تلخيصا لحالة الموارد المائية فى كل من الاقاليم العشر. كما يتناول عدد من هذه الجداول بعض الجوانب المتعلقة بكل اقليم على حدة ، ومن بينها: حالة المياه الجوفية ، ومشروعات الحفاظ على المياه ، وامكانيات استغلال الموارد المائية غير المستغلة فى بعض الاقاليم حتى الان. كما يتضمن الفصل عددا من الخرائط (١–١١ الى ١–٢٠) التى تتناول بدورها وصفا للخصائص الهيدرولوجية ولموارد المياه الجوفية والقنوات المائية فى الاقاليم الرئيسية المشار اليها. وكما سبقت الاشارة فقد اعتمد التقرير فى هذا الفصل على العديد من التقارير والدراسات ، التى لايتسع المجال لذكرها هنا ، وهى ترد بالتفصيل فى التقرير (ص ٦٧و٦٨).

الباب الثانى: خصائص السكان على المستوى القومى والهجرة والتقديرات السكانية

أ – مقدمة (ص ٦٩)

يتناول التقرير فى مقدمة هذا الباب تلخيصا للمشكلة السكانية فى مصر والمتمثلة فى اطراد الضغوط السكانية على الاراضى القابلة للزراعة. كما يعرض بايجاز لعدد من اهم الخصائص الديموجرافية القومية. ومن بين هذه الخصائص مايلى: الكثافات السكانية على المستوى القومى والهيكل الريفى/الحضرى للسكان ، وأثر التفاعل بين العوامل الديموجرافية والاجتماعية والاقتصادية والسياسية على هذا الهيكل .

ب – نمو سكان الحضر (ص ٦٩–٧٣)

يتناول التقرير فى هذا الفصل الموضوعات التالية :

١– مكونات النمو: الزيادة الطبيعية ، الهجرة من الريف الى الحضر ، التغير فى التعريفات الادارية ، والتغير فى حدود التقسيمات الادارية وذلك كما يتضح من الجداول (٢–١) الى (٢–٤).

٢– تفاوت النمو بين المستوطنات الحضرية : (جدول ٢–٥).

٣– التركز الحضرى فى عدد من المستوطنات: (الجداول ٢–٦ الى ٢–٨) .

ج – الهجرة الداخلية (ص ٧٣–٨٠)

يحتوى هذا الفصل على تحليل لجوانب عملية الهجرة الداخلية فى ضوء العوامل التالية :

١– نمط الهجرة : لايقتصر التقرير فى هذا الشأن على تناول الهجرة من الريف الى الحضر ، بل يشير الى أهمية صور الهجرة الاخرى وهى الهجرة من الريف الى الريف ، ومن الحضر الى الحضر ، ومن الحضر الى الريف وقد استند فى ذلك الى المسح الخاص بالهجرة الداخلية الذى اجراه الجهاز المركزى للتعبئة العامة والاحصاء عام ١٩٧٩.

٢– أسباب الهجرة : يلخص التقرير هذه الاسباب فيما يلى:

• عوامل طرد: الضغوط السكانية ، تضاؤل الفرص الاقتصادية ، انخفاض مستوى الخدمات ، والتقاليد الجامدة

• عوامل جذب: جاذبية الفرص الاقتصادية (فرص العمالة وارتفاع مستوى الاجور) وجاذبية العوامل الثقافية ، وارتفاع مستوى الخدمات التعليمية والصحية والترفيهية ، ووجود مراكز القوى السياسية.

وقد استند التقرير فى تحليل هذه العوامل أيضا الى مسح الهجرة الداخلية الذى سبقت الاشارة اليه.

٤ – الاقتصاد والنقل (ص ٥–١١)

يؤكد التقرير على اعتبار الانشطة الاقتصادية العمود الفقرى لعملية التحضر ، وأيضا على دورها كقوى رئيسية مسئوله عن التغيرات التى تتم بالنسبة لتوزيع المستوطنات الحضرية . ثم يعرض لتطور الاقتصاد المصرى منذ النصف الاول من القرن التاسع عشر فيشير الجدول (٤–١) الى أهم الصناعات التى وجدت فى مصر ابان حكم محمد على كذلك يحتوى الجدول (٤–٢) على بيان بحجم وقيمة صادرات مصر (وهى أساسا من القطن) خلال الفترة الممتدة من عام ١٨٣٨ وحتى عام ١٩١٢ . أما الجدول (٤–٣) فيوضح تطور حجم السكان والمساحات المزروعة خلال نفس الفترة. وقد اعتمد فريق الدراسة فى استخلاص البيانات المشار اليها على المصادر الاساسية التالية :

– على الجريتلى: تاريخ الصناعة فى مصر، القاهرة ، ١٩٥٢

– روبرت مابرو وسمير رضوان: تصنيع مصر، ١٩٣٩–١٩٧٣ ، اكسفورد ، ١٩٧٦ (باللغة الانجليزية وترجم الى العربية)

– روبرت مابرو: الاقتصاد المصرى ، ١٩٥٢–١٩٧٢ ، اكسفورد ، ١٩٧٦ (باللغة الانجليزية وترجم الى العربية)

وفى ضوء التطورات التى عرض لها التقرير بالنسبة للاقتصاد المصرى ، تم استخلاص التأثيرات التى مارستها تلك التطورات على توزيع وحجم المستوطنات الحضرية بمصر. ويركز التقرير فى هذا الشأن على تأثير علميات انشاء شبكات الرى والاستثمارات الخاصة فى الصناعات الزراعية والتى خضعت للادارة الاوروبية بعد هزيمة محمد على.

كذلك يشير التقرير الى دور النقل فى التأثير على عملية الاستيطان الحضرى ، فيتناول ببعض التفصيل التطور الذى شهدته شبكة النقل بالسكك الحديدية منذ منتصف القرن الماضى.

واستطرادا لعرض تأثير التطورات الاقتصادية يحلل التقرير التطورات التى شهدتها الفترة الواقعة بين الحربين العالميتين بالنسبة لمجالى الصناعة والزراعة بمصر وتأثير ذلك على حجم كل من المستوطنات الحضرية الرئيسية . وفى هذا الصدد ، يشير الجدول (٤–٤) الى بعض المؤشرات الرئيسية للاقتصاد المصرى خلال الفترة ١٩١٧–١٩٣٩ .

كما مثل تطور الاقتصاد المصرى بدءا من قيام ثورة ١٩٥٢ وحتى الان، موضوعا للقسم الاخير من هذا الباب حيث تم استعراض التغييرات الرئيسية فى مجالات التخطيط والتصنيع والتنمية الاقليمية. كما تم التركيز، بالنسبة للاخيرة ، على سياسات التحضر المتمثلة أساسا فى سياسة انشاء المدن الجديدة . ويبين الجدول (٤–٥) مستوى وتوزيع ومعدلات نمو كل من سكان الريف والحضر خلال الفترة ١٩٣٧–١٩٦٦ .

٥ – الادارة العامة (ص ١١، ١٢)

يتناول التقرير – بايجاز – طبيعة نظم الادارة العامة بمصر من حيث درجة المركزية أو اللامركزية التى تتسم بها وذلك منذ عهد الامبراطورية العثمانية مرورا بفترة الاحتلال البريطانى وحتى قيام ثورة يوليو ١٩٥٢ . وقد اعتمد فريق الدراسة فى دراسة هذا الموضوع على المصدر التالى:

Hardman, Anna, Local Government in Egypt and Its Role in Urban Transportation Planning and Implementation, Cairo University/M.I.T., 1978.

وترد فى نهاية الجزء الاول من التقرير قائمة بالمراجع التى مثلت مصادر للبيانات الواردة به .

الجزء الثانى
بيانات على المستوى القومى

الباب الاول: الظواهر والموارد الطبيعية : الارض والمناخ ، والسياحة ، والموارد المعدنية

أ – الارض (ص١٥)

يتضمن هذا الفصل توضيحا لمعالم الاراضى المصرية من حيث الموقع والمساحة . كما يشتمل على تقسيم للمساحة الكلية الى أراضى قابلة للزراعة وأخرى غير قابلة للزراعة . وعموما ، يتناول الفصل شرحا لمعالم الاراضى المصرية من خلال تقسيمها الى أربعة أقاليم رئيسية هى: وادى النيل والدلتا ومنخفض الفيوم ، والصحراء الغربية ، والصحراء الشرقية ، وشبه جزيرة سيناء . وتتضمن الخريطة (١–١) توضيحا لمعالم سطح الاراضى المصرية .

ب – المناخ (ص ١٥ – ١٩)

يشير هذا الفصل الى طبيعة المناخ فى مصر، فيوضح المدى الذى تتراوح خلاله درجات الحرارة خلال فصول العام (جدول ١–١) . كما يتناول تحليلا لطبيعة المناخ من حيث مدى الجفاف أو الرطوبة والامطار (خريطة ١–٢) واتجاهات الرياح (خريطة ١–٣) ومدى تقلب المناخ بين الفصول المختلفة .

ج – الموارد المعدنية (ص ١٩–٢٤)

يتناول التقرير ، على نحو تفصيلى وفى صورة جداول ، توضيحا لثروات مصر المعدنية وتطورها خلال الاعوام الثلاثين الماضية ، فيبين توزيع الموارد المعدنية بأنواعها المختلفة (الخامات الفلزية واللافلزية والمحاجر والملاحات) عام ٧٩ ، وذلك فى الجداول (١–٢) الى (١–٤) . كما يتضمن التقرير بيانا بتطور ثروة مصر المعدنية خلال الفترة الممتدة بين عامى ١٩٥٠ و ١٩٧٨ فى الجدولين (١–٥) و (١–٦) . كذلك ، ترد فى هذا

مقدمة

قام فريق دراسة السياسة القومية للتنمية الحضرية باعداد هذا التقرير خلال فترة الدراسة الممتدة من يوليو ١٩٨٠ الى ديسمبر ١٩٨١ وذلك بناء على تكليف من اللجنه الاستشارية للتعمير بوزارة التعمير والدولة للاسكان واستصلاح الاراضى.

وبالاضافة الى هذا التقرير فقد قامت بادكو انك ، وجماعة المهندسين الاستشاريين بكافة الدراسات الفنية اللازمة لرسم وبلورة سياسة قومية للتنمية الحضرية فى مصر. كما قام مكتب شريف الحكيم ومشاركوه بدراسة الجوانب الديموجرافية لسياسة التنمية الحضرية. وقد صيغت نتائج الدراسة فى التقارير والدراسات التالية:

١- التقرير النهائى لدراسة السياسة القومية للتنمية الحضرية، وملاحقه

٢- دليل ادارة التنمية الحضرية

٣- مقترحات بمشروعات توضيحية للتنمية (تقارير)

٤- الخطوط الرئيسية لنظام المعلومات (مشتملا على نظم تصنيف وفهرسة البيانات)

٥- أوراق عمل ومذكرات عديدة ومتنوعة تم اعدادها خلال فترة الدراسة

ويهدف هذا التقرير الى عرض البيانات التى تم تجميعها خلال فترة الدراسة مع شرح موجز لمضمون هذه البيانات والنتائج التى تم استخلاصها، دون أن ينطوى ذلك على أية توصيات أو تحليلات مستفيضه، اذ يرى فريق الدراسة أن القدر الاكبر من الاستفادة ببيانات هذا التقرير يمكن أن يتأتى من خلال قيام الباحثين المطلعين عليه باستخلاص النتائج والربط بين البيانات الواردة فى اجزائه على النحو الذى يتفق وطبيعه الابحاث القائمين عليها أو الموضوعات المهتمين بها.

وتجدر الاشارة الى أن مصادر البيانات الواردة فى هذا التقرير تعد مصادر ثانوية فى معظمها ومن ثم فقد أدرجت فى نهاية كل من اجزاء التقرير قائمة بالمصادر الاصلية للموضوعات محل الدراسة كى يقوم الباحثون بالرجوع اليها اذا ما اقتضت الحاجه ذلك.

الواردة فى هذا التقرير تعد مصادر ثانوية فى معظمها ومن ثم فقد أدرجت فى نهاية كل من اجزاء التقرير قائمة بالمصادر الاصلية للموضوعات محل الدراسة كى يقوم الباحثون بالرجوع اليها اذا ما اقتضت الحاجه ذلك.

ويشتمل تقرير النمو الحضرى وبيانات التنمية الحضرية على مقدمه وسته اجزاء رئيسية. تحتوى المقدمة على عرض لاهداف التقرير والتى يمكن تلخيصها فى خدمة جمهور الباحثين من المصريين والاجانب من خلال تزويدهم بالبيانات الاساسية المرتبطة بسياسات التنمية الحضرية فى مصر. ويوضح فريق الدراسة - فى هذا الصدد - الصعوبات التى اكتنفت محاولات الحصول على البيانات بصورة عامة والبيانات غير المنشورة على وجه الخصوص كما تحتوى المقدمة على بيان بمجالات التخصص التى يمكن للعاملين والمعنيين بها أن يجدوا مجالا للاستفادة من بيانات هذا التقرير. وهذه المجالات هى: التخطيط الحضرى والدراسات المعمارية والاقتصاد والدراسات الديموجرافية، والاجتماعية بصورة عامة كذلك يرى فريق الدراسة ان التقرير يمكن أن يكون مصدرا ملائما لحصول المسئولين الحكوميين والاكاديميين - على وجه السرعة - على البيانات المرتبطة بمجالات عملهم.

ثم تستطرد المقدمة ببيان المحددات الواردة على البيانات والتى ينبغى اخذها بعين الاعتبار من جانب مستخدمى التقرير. وتتمثل هذه المحددات أساسا فى مدى اكتمال أو - بالاحرى - شمول البيانات ودرجة حداثتها.

أما اجزاء التقرير الست والتى نعرض فى الصفحات التالية ملخصا لمحتوياتها، فموضوعاتهاما يلى:

الجزء الاول: نظرة تاريخية على حضر مصر

الجزء الثانى: بيانات على المستوى القومى

الجزء الثالث: انماط الاستيطان

الجزء الرابع: الاسرة والاسكان

الجزء الخامس: الادارة والتنمية الحضرية

الجزء السادس: الاطار القانونى للتنمية الحضرية

الجزء الأول
نظرة تاريخية على حضر مصر

١ - مقدمة (ص ٣)

يهدف هذا الجزء الى التعريف بالقوى التاريخية التى أسهمت فى تشكيل الانماط الحضرية الحالية لمصر. وبطبيعة الامر - لايعد العرض التالى سردا شاملا لتاريخ الحضارة المصرية، وانما قصد منه فحسب ان ينطوى على اظهار العوامل المؤثرة على التنمية الحضرية والتى يوجزها التقرير فى خمس هى: الارض ونمو السكان والاقتصاد ونظم النقل وانماط الادارة العامه. وقد عرض التقرير لهذه العوامل كما يتضح مما يلى:

٢ - الارض (ص ٣)

يفسر التقرير قول هيرودوت المشهور "مصر هبة النيل". فيشير الى تأثير الارض ونهر النيل على مواقع المدن المصرية على مدى عمر حضارتها الممتدة منذ ما يقرب من سبعة الاف عام. كما يشرح ملامح الاراضى المصرية من حيث المساحة والموقع وطبيعة سطح الارض والتطور التاريخى لمواقع الاستيطان البشرى، تلك الاراضى.

كذلك يشير التقرير الى ما تضمنه كتاب "شخصية مصر" الذى قام باعداده د. جمال حمدان من تحليل للبيانات التاريخية ولمورفولوجيا وادى ودلتا نهر النيل. كما يحتوى التقرير أيضا على وصف موجز لمواقع المستوطنات الحضرية الرئيسية خلال عصور التاريخ المختلفة.

٣ - نمو السكان (ص ٤)

يبين جدول (٣-١) الاتجاهات التاريخية للنمو السكانى فى مصر منذ عام ٢٠٠٠ قبل الميلاد وحتى عام ١٩٧٦ ويركز بصفة خاصة على المدن التى يفوق حجمها السكانى ٠٠ ١٠٠ نسمة، ويستند التحليل الوارد بهذا الشأن الى الدراسة التالية: رفيق فريد: "تحليل زمنى لتوزيع احجام المستوطنات والتنمية الاقتصادية، ١٨٨٢ - ١٩٦٦ الجزء الخامس: "التنمية الحضرية فى مصر المعاصرة"، ص ٢٣٤-٢٣٨.

مصر

تقرير النمو الحضري و بيانات التنمية الحضرية

مقدم إلى
اللجنة الاستشارية للتعمير
وزارة التعمير و الدولة للاسكان و إستصلاح الأراضى

إعداد
بادكو إنك
واشنطن

بالاشتراك مع
جماعة المهندسين الاستشاريين
المركز الرئيسى : ٥٠ شارع الرئيس مصطفى النحاس - مدينة نصر - القاهرة

و
شريف الحكيم و مشاركوه
القاهرة

يوليه ١٩٨٢

المنحة رقم ٠٠٤٢ - ٢٦٣ المقدمة من وكالة التنمية الدولية الأمريكية

EGYPT NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

EGYPT

Urban Growth and Urban Data Report

Prepared for:
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Prepared by:
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NATIONAL URBAN POLICY STUDY

51

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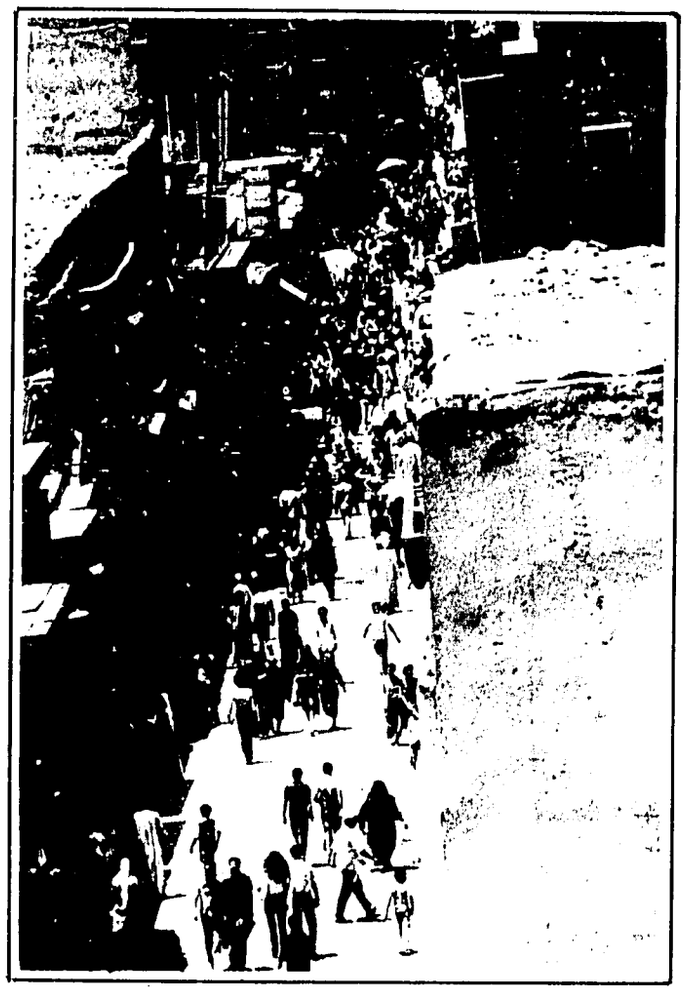

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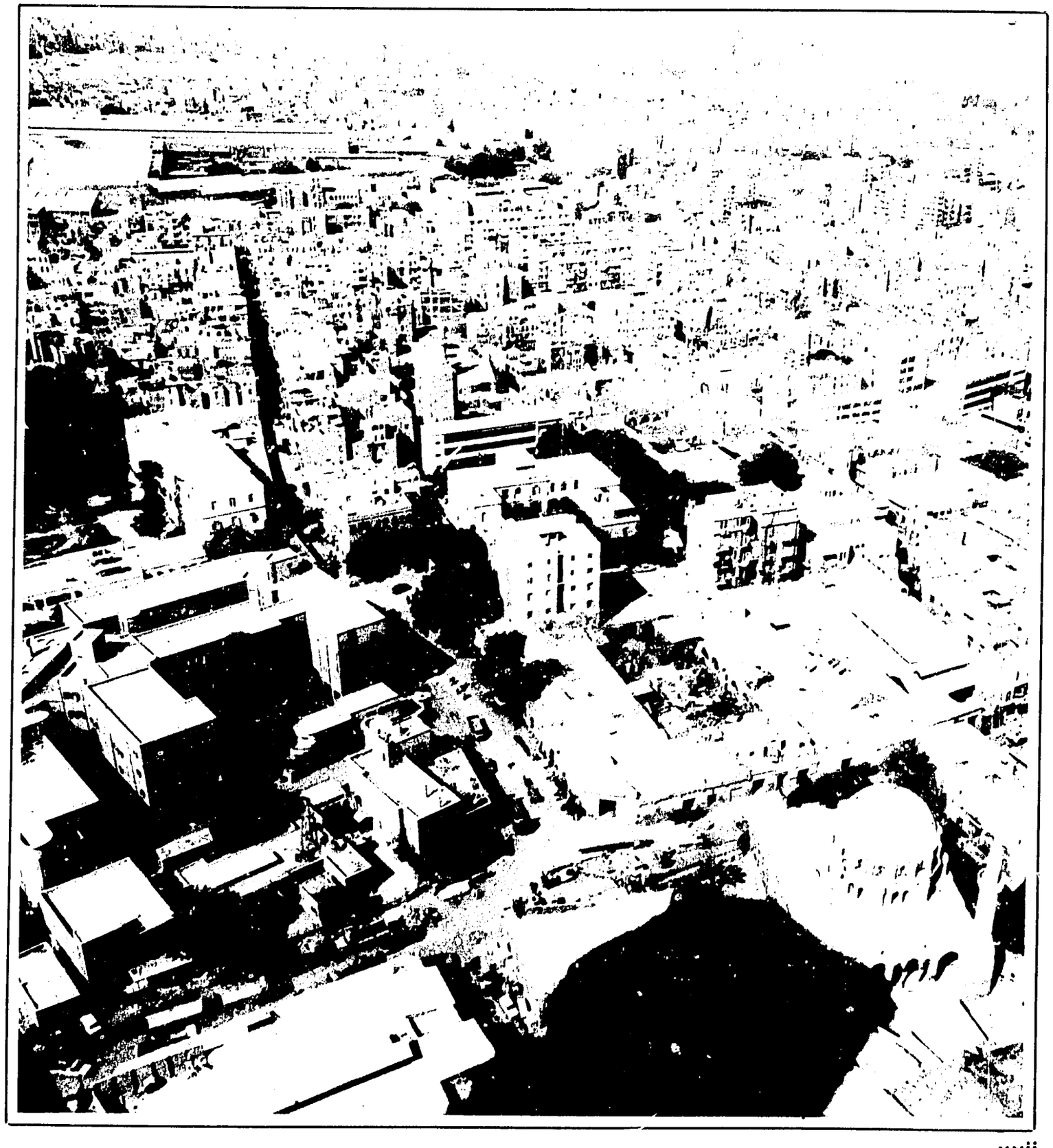


INTRODUCTION

The Urban Growth and Urban Data Report was prepared at the request of the Ministry of Development by the National Urban Policy Study Team during the course of their work from July, 1980 to December, 1981. The work presented here contributed to the preparation of a National Urban Policy for Egypt which was the main purpose of the assignment. It was felt from the beginning, however, that a special volume on urban data would be desirable by-product of the work.

A. The Purpose of the Urban Growth and Urban Data Report

The purpose of this report is to simply present the data collected during the course of the work with a brief explanation of findings and conclusions regarding the data. So far as possible the data is presented without "policy" recommendations or in-depth analysis. It is assumed that the individuals using the material will draw their own conclusions and integrate the work as they see fit into their individual assignments.

The purpose, therefore, is to provide other professionals both Egyptian and foreign with basic information. The information is drawn mainly from secondary sources which have been collected by the NUPS team. So far as possible the original source is given so that it can be obtained by the user who needs further information about a given subject.

For those unfamiliar with Egypt the apparently modest purpose of merely presenting information in one report covering a wide variety of subjects, but using only secondary sources might seem not worth the effort. They will soon discover that information gathering of even published material is extremely difficult in Egypt. There are many obstacles to be overcome:

i) There are as yet no adequate libraries or information systems available as central reference points. The Ministry of Development is working to overcome this deficiency by starting such a system and the NUPS project will contribute to it.

ii) Information while available in raw form at ministries or governorates, is often not provided researchers or professionals on a timely basis. If processing is involved as it usually is, the cost of that work is expected to be paid by the requesting party and that price can frequently be considerable.

iii) Data sets which urbanists frequently would like to link together are found only in many diverse sources and require enormous time for assembly and analysis.

iv) While there have been literally hundreds of reports prepared on urban Egypt and related issues, these reports are in extremely short supply. Even after identifying its existence, getting a copy is often impossible.

v) Some of the research of interest has been done by foreigners and has appeared only in international publications or not at all and therefore at least some of the material presented in this report has had limited or no circulation in Egypt.

vi) Last, but not least the sheer job of acquiring data is enormously time consuming, requiring frequent visits to offices and many disappointments.

For all of these reasons it is hoped that readers will find that this comprehensive effort at assembly of relevant materials on urban Egypt will prove useful and represent to them a savings of considerable time and effort.

B. The Users of This Report

In assembling this report, the intent was to make information available to users of several different kinds. These include:

i) Professional urban planners, economists, architects and others given the task of undertaking urban planning or regional planning in Egypt.

ii) Specialists in a given development area, who will need much more information on their given subject than this report can provide, but who will benefit by obtaining an overview on their subject or by a broad comprehensive framework of related data.

iii) Government officials in all ministries who need a quick reference source to provide supporting data for the many subjects which require their attention.

iv) Researchers and academics who are undertaking assignments of an urban development nature, including students who need reference materials for their own papers and reports.

From this list it can be seen that the report will be used for widely different purposes by many different kinds of people. It can also be seen that no one is likely to need all of the material at any one time nor is it intended that one would read this enormous amount of information as an integrated report from beginning to end. It is a reference work.

C. The Nature of the Report

The Urban Growth and Urban Data Report should not be thought of as a "definitive" work. It is the best NUPS could do within the time and resources available. Nonetheless it suffers from several limitations for which the user should be on guard. Among these are:

i) Incompleteness of data sets. Given the vast amount of material about urban

Egypt and the data collection difficulties enumerated above, it should be recognized that it has been impossible to get everything one would like between the covers of a given report.

ii) The timeliness of the data will quickly erode. The data sets are constantly changing as new information becomes available. There are at least six major studies currently underway which could materially contribute to such a report as this, but will not be completed in time to be included. Furthermore, new data on an annual or even more frequent basis is being constantly produced and so much of the material contained here will need to be updated by users.

iii) The accuracy of data in Egypt is a constant concern. Whereas an effort has been made to avoid any known inaccuracies there are bound to be some. In part this problem occurs because of the conflicting data sets in use in Egypt. Information on a comparative basis is extremely difficult because of different assumptions and accuracy of the original data.

D. The Structure of the Report

The organization of the report is designed to provide the user with data organized sectorally or by subject and to some extent again as a profile of a given location or area. All together the report is in seven related parts.

i) Part One: Historical Perspective of Urban Egypt.

This is a rather light treatment of the basic social and economic forces which have led to the present structure of urban Egypt. It can provide an understanding of the magnitude of policy change currently sought by government in an effort to counterbalance these strong historical trends.

ii) Part Two: National Level Data.

This section starts with brief descriptions of the natural resources by zone which brings many diverse data sets together for the first time. The population section presents a comprehensive review of the 1976 census and historical trends plus the various projections which have been prepared in recent years. The Section also includes NUPS year 2000 population and labor force projections. The section also includes NUPS year 2000 population and labor force projections. The Macro Economic section is a very brief review of the Current Accounts, the National Five Year Plan, and various projections of national accounts information which have been done. The reader should be particularly cautious with this data as it is subject to frequent readjustment and modification.

The national economic profiles should prove useful as the data comes from many diverse sources and provides a comprehensive overview not heretofore available. Of particular interest is the service sector material which, while appearing weaker than the rest, is nonetheless the first effort in Egypt to our knowledge at comprehensively dealing with this important sector. This Small Scale Enterprises Sector contains some fresh insight on this important group gained from brief field work by the NUPS team.

The national infrastructure networks, particularly transportation, are limited by the current state of flux in the future commitments.

The final section attempts to relate various indices of urban development in Egypt to other countries throughout the world.

iii) Part Three: Settlement Patterns.

This section will be of special interest to researchers and urban planners as it represents a comprehensive urban profile on the cities of Egypt and the governorates. Of special interest is the section which analyzes the landsat analysis of urban growth in Egypt between 1972 - 1978. This is the first time such information has been available in Egypt. It represents a unique contribution to the data base by the NUPS team. Equally interesting is the discussion on physical standards related to costs. This is a fresh analysis which should be of considerable interest to those concerned with physical development of cities.

iv) Part Four: Households and Housing.

This section contains much information which is generally known, but does undertake a comprehensive review of household income and makes projections. The data base upon which this work was based is extremely fragmented and suspect, but nonetheless, it does provide a reference point of value for future work.

v) Part Five: Urban Management and Administration.

This section will perhaps largely be of value to persons not familiar with government structure and procedure. It is a straightforward description of the agencies of government according to their roles in urban development. The reader should be aware that this material is subject to rapid change and therefore should be freshly verified before using in a particular instance.

vi) Part Six: Legal Framework for Urban Development.

This analysis of current and in some case, pending laws should prove very useful as it highlights an area which greatly effects the ability of government to implement plans and programs for urban development. It is also an area in which change can be rapid as new laws are passed frequently.

Part One: Historical Perspective of Urban Egypt

I. Introduction

II. The Land

III. Population Growth

IV. Economy and Transportation

V. The Public Administration

EGYPT NUPS دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

PART ONE

HISTORICAL PERSPECTIVE OF URBAN EGYPT

I. INTRODUCTION

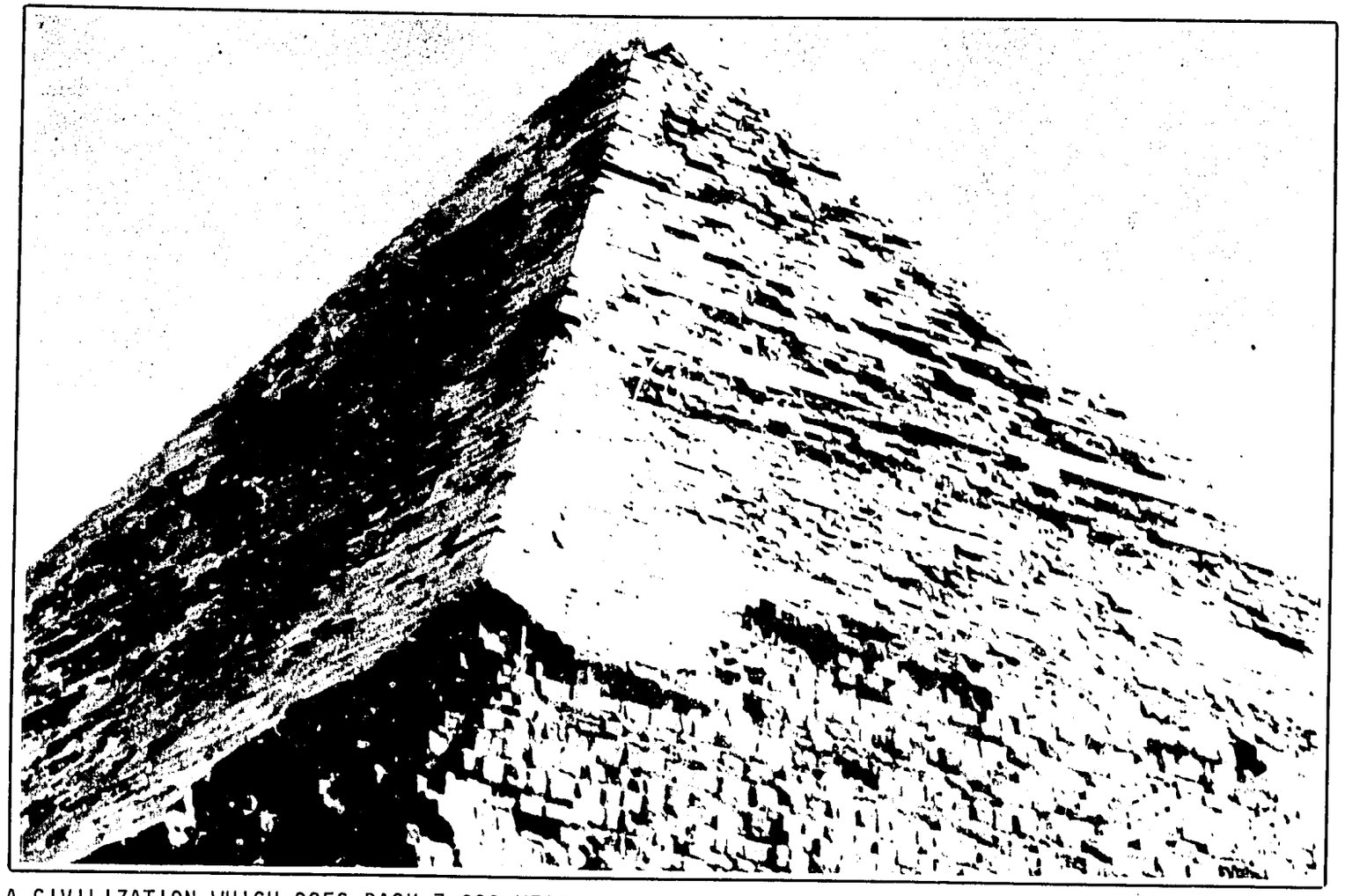
The purpose of this section is to outline the historic forces which have influenced the urban patterns of modern day Egypt. It is not intended as a comprehensive review of the monumental history of Egypt. The history of the land, the Egyptian people, and a civilization which goes back 7,000 years has been well documented by scholars in the available literature.

Five factors which have influenced the urban pattern of Egypt today are the land, population growth, the economy and transportation systems, and government administration patterns.

II. THE LAND

"Egypt is the gift of the Nile" is the famous saying of Herodotus. Indeed, the land and the river have had great impact on the locations of cities in Egypt since the dawn of history.

Egypt is essentially a desert of about 1,000,000 square kilometers, part of the desert belt of northeast Africa. This desert has been, until modern times, unlivable except for the "Nile Valley." The Nile flows through Egypt from the south to the north, forming its own valley as a strip of agricultural land between the parallel ranges of hills. On the west side of the Nile, the hills form the Western Desert Plateau in which lies a series of scattered oases; on the east side the hills form a north-south chain of mountains which cascade down to the Red Sea. North of Cairo, the Nile is divided into two main branches forming the fertile agricultural lands of the Delta. The arable land of the Nile Valley and the Delta amounts to about 3.5 percent of the country's area. Historically and before recent irrigation works, the Nile overflowed once a year in the summer to irrigate the land and enrich it with a fertile layer of silt.



A CIVILIZATION WHICH GOES BACK 7,000 YEARS

Settlements were found along the Mediterranean coast and Nubia, but mostly along the banks of the Nile. The river was obviously an important factor in their location. These settlements had to be on high sites to avoid inundation caused by the seasonal changes in the water level. The number of these settlements increased with improved water control and irrigation systems. The value of agricultural land made them compact and dense, and their form did not change throughout the years.

Dr. Gamal Hamdan, in his book Shakhsiet Misr (The Personality of Egypt), reviewed and analyzed historical data on the morphology of the Nile, its valley and delta. He demonstrated that the valley did not change in any substantial way, albeit adjustments in the river bed did take place over time, due to forces of erosion, silt deposits and changes in elevation.

As for the Delta, Hamdan reports on several maps dating back to Herodotus, Strabo and Ptolemy, offering various descriptions of the Delta and its branches. The reduction of the large numbers of old branches to the present two main branches of Damietta and Rosetta, as well as the transformation of many branches to man-made irrigation canals, was a process of ecological adjustment to maximize the utilization of available agricultural resources.

Present Egyptian settlements represent continuity from the ancient to the recent. In many parts of contemporary settlements we can see the vestiges of old Arab settlements; these

succeeding Roman-Ptolemaic settlements which were laid over the remains of ancient Egyptian villages.

The map shows that settlements become sparse as one moves from the apex of the Delta to its base on the Mediterranean coast. Hamdan notes a differentiation between the intensively cultivated areas in the central and southern parts of the Delta and the "prairie" lands in the northern part towards the Mediterranean.

Wilcox and Craig identified the approximate southern boundary of the "Prairies" in the 19th century as a line which connects the settlements of Dilingat-Saft El Molouk-Damanhour-Itai El Baroud-Shabrakhit-Rahmania-Dessouk-Senhour-Nashart-Qallin-Kafr El Sheikh-Simla-El Mehalla-Talkha-Mansura-Simbellawin-Safour-Faqous-Bilbeis. Hamdan shows that the "Prairies" are beyond a radius of 60 kms centered in Tanta; and that these areas lie to the northwest, north and northeast of the arc. These areas have been the target of land reclamation efforts which started in the late thirties and are continuing to this day.

Based on reports and maps from the Napoleonic expedition, Hamdan explains that three settlements located in the "Prairies" did thrive because they were independent from agricultural practices in the area. These settlements were Rosetta, Damietta and Baltim.

Baltim lies between the Mediterranean and Lake Borollos at the center of the Delta base. It has been inhabitated and cultivated since earliest times. As it is the wettest spot in the country (receiving 15-20 cms of rainfall) its agriculture though seasonal, is independent of the river Nile. As for Damietta and Rosetta, they form the land extensions around the Delta branches as they meet the Mediterranean. These two locations have always had permanent access to Nile water for irrigation and navigation.

Egypt has also had a number of national capitals at different locations, where the strategic value of the site was paramount. The apex of the Delta seems to have been the most strategic site as a link between upper and lower Egypt. This site has been the location of Memphis, the oldest capital; of Fustat, capital of the Islamic period; and is now the location of Cairo, the modern capital. Other strategic sites were northeast of the Delta which saw Tanis as the gate between Egypt and Asia; Alexandria on the Mediterranean as the gate between Egypt and Europe; Thebes at the Qena Bend serving as the gateway from the Nile Valley to the Red Sea, Nubia and Ancient Sudan. However, the duration of these sites were not permanent since their strategic value changed with the political and economic forces of the times.

III. POPULATION GROWTH

Table III-1 presents the historical population growth trend of Egypt and its cities over 100,000 population. Farid[1] relates the percent of large city population to major historic events of the times, making the following points:

i) The urban percentage decline from 2000 BC to 1400 BC reflects the general weakening of military and economic strength.

ii) The 5.7 percent of the population in large cities relates to the continuing concentration of economic and cultural life in Alexandria which occurred during the last half of the Ptolemaic or Hellinistic rule.

iii) Starting with 600 AD and continuing to 1200 there was a steady increase in the concentration of population in large cities. This corresponds to the Moslem conquest and the subsequent growth achieved under the Fatimids, reaching a high point of strength under the rule of Saladin and the Ayubid Dynasty.

iv) From 1600 to 1800 it might have been expected that a decline of the percentage of urban population would have occured during the Mameluk and Ottoman periods. Farid speculates that this did not occur

EGYPT IS THE GIFT OF THE NILE

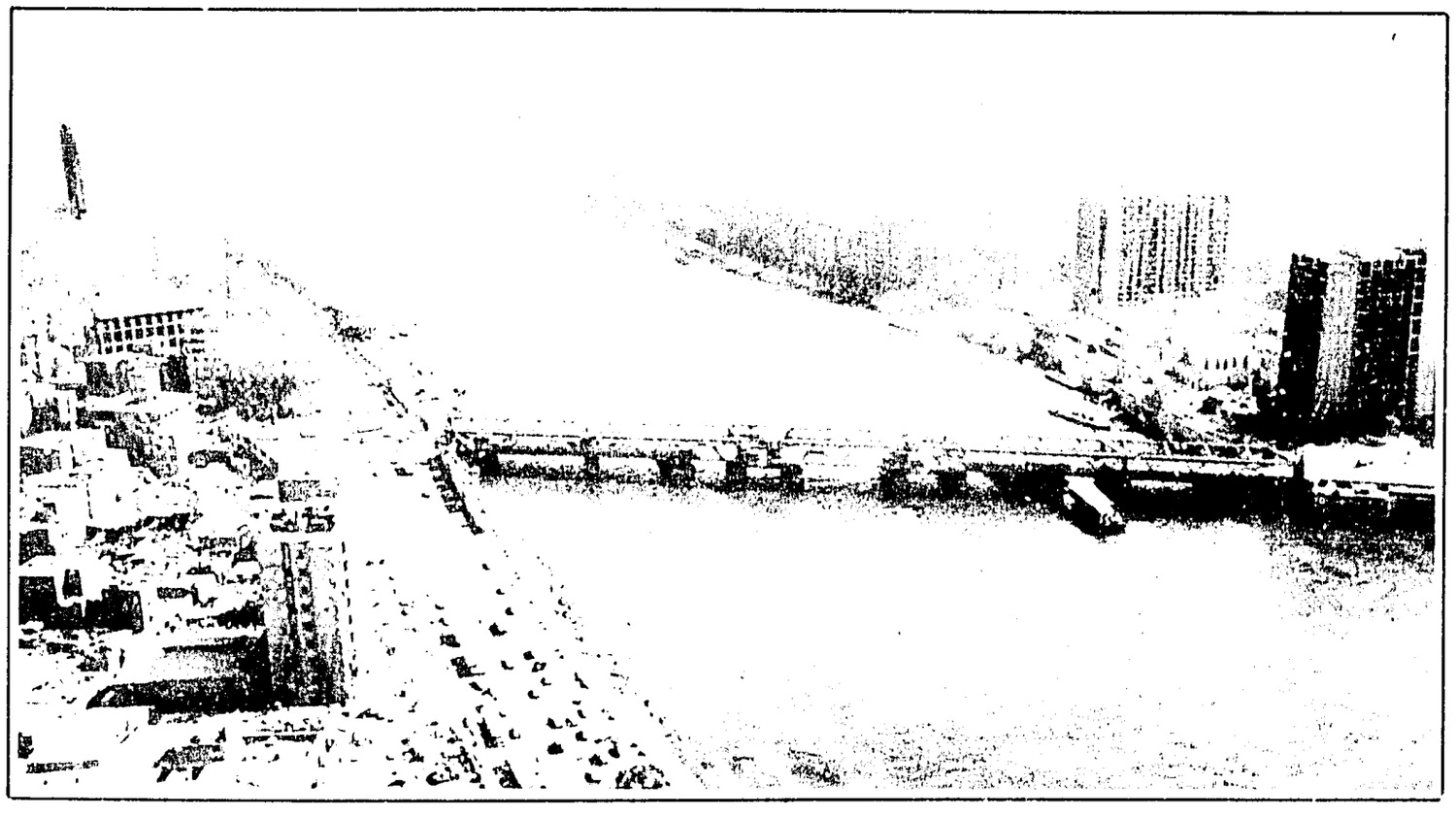


TABLE III-1

HISTORICAL SURVEY OF THE TOTAL POPULATION OF EGYPT AND THE POPULATION LIVING IN CITIES OF 100,000 OR MORE

YEAR	TOTAL POPULATION a/	POPULATION IN CITIES OF 100,000 b/	PERCENT OF TOTAL POPULATION	CITIES OVER 100,000
	(000)	(000)		
2000 B.C.	5,000	100	2.00	Memphis
1400 B.C.	6,000	100	1.67	Thebes
100 A.D.	7,000	400	5.71	Alexandria
400	8,500	200	2.35	Alexandria
600	9,000	200	2.22	Alexandria
1000	9,000	250	2.78	Cairo, Alexandria
1200	9,000	545	6.06	Cairo, Tinnis, Qift, Qus
1400	7,500	570	7.60	Cairo, Qus
1600	5,000	400	8.00	Cairo
1800	2,489	263	10.57	Cairo
1821-26	4,230	219	5.20	Cairo
1846	5,290	421	7.96	Cairo, Alexandria
1882	6,810	606	8.90	Cairo, Alexandria
1896	9,749	906	9.29	Cairo, Alexandria
1907	11,287	987	8.74	Cairo, Alexandria
1917	12,750	1,288	10.10	Cairo, Alexandria
1927	14,218	1,936	13.60	Cairo, Alexandria, Port Said
1937	15,933	2,250	14.14	Cairo, Alexandria, Port Said
1947	19,021	3,850	20.24	Cairo, Alexandria, Port Said, Tanta, Mahalla Suez, Mansoura
1960	25,980	7,117	27.39	Cairo, Alexandria, Port Said, Tanta, Mahalla, Suez, Mansoura, Ismailia, Assiut, Damanhour, Zagazig, Fayoum
1966	30,080	9,132	30.36	Cairo, Alexandria, Port Said, Tanta, Mahalla Suez, Mansoura, Ismailia, Assiut, Damanhour, Zagazig, Fayoum, Aswan, Minya
1976	36,526	12,009	32.88	Cairo, Alexandria, Port Said, Tanta, Mahalla, Suez, Mansoura, Ismailia, Assuit, Damanhour, Zagazig, Fayoum, Aswan, Minya, Giza, Shoubra El Kheima, Kafr el Dawar, Beni Suef, Shebin el Kom, Sohag

SOURCE: Farid, Rafik K. TEMPORAL ANALYSIS OF SETTLEMENT SIZE DISTRIBUTION & ECONOMIC DEVELOPMENT IN EGYPT 1882-1966. Chapter V, The Development of Urbanization in Modern Egypt, pp. 234-238.

a/ 2000 B.C. - 400 A.D.: G. Hamdan, Shakhsiyat Misr, Cairo 1973, p. 325.
1000 - 1600 A.D.: Interpolations and unsupported estimates.
1800 A.D.: Estimate by French Campaign; See G. Baer, Studies in the Social History of Modern Egypt, Chicago, 1969.
1821 - 1826 A.D.: Partial Enumerations; see G. Baer, op. cit.
1846 A.D.: Census of Housing Estimate; see G. Baer, op. cit.
1882 - 1976 A.D.: Official Census of Population.

b/ 200 B.C. - 1600 A.D.: T. Chandler and G. Fox, 3000 Years of Urban Growth; New York 1974, pp. 300-341, 367-374, 196-197.
1800 - 1846 A.D.: G. Baer, op. cit., pp. 134-135.
1882 - 1976 A.D.: Official Census of Population. Population of Cairo includes suburban areas and the city of Giza. The following communities are considered elsewhere: Giza, Shoubra El Kheima, Helwan, Badrashein.

because the total population decreased faster than the urban population.

v) The further decline in large city population during the early 1800's Farid attributes to the heavy destruction of Cairo by the French and the start of dispersed modern agriculture and industrialization under Mohamed Ali.

vi) Since the rule of Mohamed Ali, large city development has continued to modern times with more and more cities achieving the 100,000 population level. Nonetheless, Cario and Alexandria have continued to be the major urban centers in Egypt throughout this period.

It is interesting to note that Egypt contained the world's largest city for a total of about 1800 years between 3400 BC and 400 AD: Abydos 3400 BC (population 20,000); Memphis 2000 BC and 300 BC (population 100,000 and 40,000 respectively); Asaris (1600 BC); Thebes (1400 BC); and Alexandria (400 AD).

Farid, quoting work by Issawi, also notes that in 1800 the percentage of the population living in urban areas in Egypt was higher than that in England, France, or the United States.

FOOTNOTES

1 Farid, Rafik K., Temporal Analysis of Settlement Size Distribution and Economic Development in Egypt, 1882-1966, Chapter V, "The Development of Urbanization in Modern Egypt," pp. 234-238.

IV. ECONOMY AND TRANSPORTATION

Although the locations of urban settlements were determined much earlier in history, it is the beginning of the 19th century that is the start of the major forces which influenced the functions of contemporary urban settlements in Egypt.

Economic activities are the backbone of urbanization. Over time, they represent the main forces responsible for changes in urban settlements. Such changes could be either

TABLE IV-1

INDUSTRIES UNDER MOHAMMED ALI

	INDUSTRIES	LOCATION	FOUNDATION	REMARKS
1.	Cotton Ginning and Pressing	Bolaq		After 1820, pressing machines were imported from the U.S.A.
2.	Rice Milling	Rosetta	1833	Steam. Built by Galloway.
3.	Sugar and Rum	Reyremoun	1818	Initially under the management of Brinman. Raw sugar and rum; later, refined sugar.
4.	Edible Oils	Cairo and Lower Egypt		According to Clot Bey, 40 mills in Cairo and 120 mills in Lower Egypt.
5.	Dairy Products	Shoubra	1844	
6.	Indigo			Mengin mentions 17 factories. Indian experts were employed. 60 percent of crop processed locally.
7.	Cotton Textiles	Khoronfish	1818	100 mule jennies, 300 looms. Managed by Morel. Had a foundry.
		Boulaq (Malta)	1819	200 looms. Bleaching. Workshop for the production of textile machinery. Managed by Jumel.
		Cairo (Ibrahim Agha) and Saptieh)	1820	Spinning only.
		Kal'et-el-Kabash	1829	200 looms. Workshops.
		Sayeda Zeinab	1820	300 looms.
		Qalyub	1821	
		Mansoura	1821	200 looms. Workshops.
		Mahalla el Kubra	1826	200 looms. Also, production of textile machinery and other parts.
		Others		More than 20 other factories.
8.	Linen	Lower Egypt		Export to Leghorn and Trieste.
9.	Woolen Fabrics	Boulaq	1818	Low quality used for military uniforms.
10.	Silk	Berket el Fil	1816	160 looms. Armenian workers.
11.	Fez	Fuwa	1824	Tunisian workers. Wool imported from Spain.
12.	Ropes	Alexandria		For the navy.
13.	Leather	Rosetta	1827	Managed by Rossi. 200 workers.
14.	Glass	Alexandria	1822	These two factories produced for the local market.
		Karioun	1836	
15.	Printing	Boulaq (Govt. Press)	1823	Printed books for schools and government publications.
16.	Paper	Cairo	1834	Paper made from rags.
17.	Chemicals	Rodah		Saltpetre. Also in six other factories. Production of chemical products including sulphuric acid is reported by Fahmy.
18.	Iron	Cairo		Iron Foundry is built by Galloway.
		Qalyub		St. John mentions 150 forges set up at Qalyub but not in use.
19.	Military Factories Arsenal	Alexandria	1827	Warships and other vessels. Managed by de Cerisy. 5,600 workers.
		Cairo	1820	Three factories at the Citadel: guns, muskets, and ammunition.
		Boulaq		Guns, small arms, copper.
		Hod-el-Marsoud		Muskets.

ORIGINAL SOURCES: A. el-Gritly, History of Industry in Egypt, Cairo, 1952 (Arabic); J. Bowring, Report on Egypt and Candia, British Parliamentary Papers, No. XXI, 1840; J. A. St. John, Egypt and Mohammed Ali, sicole Histoire, sommire de l'Egypte sous le government de Mohammed Ali, 1823-1838, Paris, 1939.

SOURCE: Mabro & Radwan, The Industrialization of Egypt? 1939-1973; Oxford, 1976, pp. 14-15.

SOURCE: Farid, Rafik, Temporal Analysis of Settlement Distribution & Economic Development in Egypt 1882-1966. Chapter V, The Development of Urbanization in Egypt, pp. 234-238.

TABLE IV-2

EGYPT'S EXPORTS 1838-1912

(Annual Averages)

Years	Volume of Cotton Exports (Millions of Kantars)	Value of Egyptian Exports (LE Millions)
1838-42	0.19	n.a.
1843-47	0.24	n.a.
1848-52	0.36	2.2
1853-57	0.50	2.8
1858-62	0.57	5.1
1863-67	1.69	10.9
1868-72	1.59	9.9
1873-77	2.49	13.5
1878-82	2.52	12.1
1883-87	2.78	11.7
1888-92	3.89	12.6
1893-97	5.20	12.9
1898-1902	5.89	16.1
1903-07	6.28	23.1
1908-12	6.72	28.1

ORIGINAL SOURCES: E. R. J. Owen, Cotton and the Egyptian Economy 1820-1914, Oxford, 1969; and C. Issawi, 'Egypt Since 1800: A Study in Lop-sided Development', Journal of Economic History, 21 (1), 1961.

SOURCE: MABRO: The Egyptian Economy, 1952-1972 Oxford, 1974. Chapter 1, Historical Background.

TABLE IV-3

POPULATION, CULTIVATED AREA, AND CROPPED AREA IN SELECTED YEARS

Year	Population (Thousands)	Cultivated Area (Thousand Feddans)	Cropped Area (Thousand Feddans)
1821	2,500-3,000	2,032	
1835		3,500	
1840		3,856	
1852		4,160	
1862		4,053	
1871	5,250		
1877		4,742	4,762
1882	6,804	4,758	
1890		4,941	
1897	9,715	5,043	6,764
1902		5,335	7,429
1907	12,751	5,403	7,662
1912		5,285	7,681

ORIGINAL SOURCES: A. E. Crouchley, The Economic Development of Modern Egypt, London, 1938; Annuaire Statistique, various issues; Population Censuses, various issues.

SOURCE: MABRO: The Egyptian Economy, 1952-1972 Oxford, 1974. Chapter 1, Historical Background.

growth, stagnation, or decline in the size of the settlements; or they could be shifts in the principal functions the settlements perform. In Egypt these activities are mainly agriculture and industry.

During the first half of the 19th century, and predominantly under the rule of Mohamed Ali, Egypt became linked to the international market as a major world cotton producer and exporter. (See Tables IV-1 and 2) Its agricultural production increased 12 times due to horizontal expansion and intensive cropping. (See Table IV-3) An experiment in industrialization was started. All crafts and small industries were consolidated and put under the control of a state monopoly. Heavy production and construction machinery were imported from Europe, and industry concentrated on naval and military armaments and textiles. To prepare for the needed labor force, technical, industrial and administrative training schools were opened.

These events saw important changes in urban areas. Alexandria, where most of the military and naval industries were located, grew tremendously from a population of 8,000 in 1808 to 164,000 in 1846. With the completion of the Mahmoudia Canal, linking it to the Nile, Alexandria became the main port to Europe and replaced Damietta and Rosetta, whose functions declined to fishing, craft industries and port facilities for the limited exports to countries east of the Mediterranean. Although the technical and administrative schools were located in Cairo, the city declined in face of Alexandria's commercial competition. Other cities like Mahalla, Mansoura and Assiut, noted for their successful but small textile industries, declined due to the bureaucracy and fiscal policies established by state monopoly.

The 19th century major irrigation works such as the Delta Barrage, were completed. Such improvements induced a diversification in the types of crops, and an expansion in the cropped area by 60 percent.

The defeat of Mohamed Ali by the European and Turkish forces, led to the closing of heavy military industries as well as all technical, industrial and administrative schools. However, agriculture thrived. Private investments were concentrated on agriculture-based industries, especially cotton. Other agro-industries flourished, such as sugar cane, paper, oil and soap, grain milling and leather

All of these industries were under European management and saw the rise in Upper Egypt and in the Delta of "industrial enclaves," built and controlled by foreign companies. Many of these foreign companies invested in franchises for developing urban and suburban utilities. Most of the industrial enclaves have thrived to become contemporary urban towns.

This tremendous agricultural development and the flourishing of agro-based industries was assisted by the laying of a railroad network in the Delta. This contributed to the emergence of the mercantile centers in agricultural areas such as Tanta (connected in 1856), Damanhour (connected in 1858), Zagazig (connected in 1860) and Mansoura (connected in 1865). These Delta towns continued to expand at rates higher than either the total or urban population of the country. Due to this expansion of agriculture and simultaneous lack of other industrial employment, the largest towns (above 20,000) declined in growth relative to total population. The completion of the first Aswan Dam in 1902 allowed for better control of irrigation in Upper Egypt and saw the emergence of Beni Suef and Minia as important administrative and commercial centers.

The rail connection between Suez, Cairo and Alexandria was completed in 1858; and as the main route for east-west transit shipping, it was instrumental in sustaining the economic base of the two ports during the digging of the Suez canal.

The Suez Canal was a major event in the history of Egypt. It was begun in 1854 and completed in 1869. It immediately presented a challenge to the growth of Alexandria, as a faster alternative route to the rail transshipment line of Suez-Cairo-Alexandria. But the Canal created also three new major urban settlements: Port Said at the northern end of the

Canal was connected to Suez by rail in 1854 and to a fresh water canal by 1864. Ismailia became in 1863 the permanent seat of the Suez Canal Company headquarters; this resulted in the decline of Damietta where the Canal offices were located from 1860-63. Zagazig, which by the middle of the 19th Century was still a small village, was connected in 1860 by rail to the Canal and its main ports on the Mediterranea. Rosetta and Damietta declined further and lost their positions as ports. Rosetta became a fishing town and Damietta developed its cottage industries of dairying and furniture making.

Several transfers of administrative functions during this period were responsible for the rise or fall of urban settlements. For example, the capital of Menoufia was transferred to Shebin El Kom, a center of substantial weaving industry, which kept Menoufia a minor urban center based on providing agricultural services and away from the major transportation network of the Delta. Tanta became the capital of Gharbia instead of Mahalla El Kubra. This transfer of administrative functions led to the decline of Mahalla and the stagnation of its weaving industries until the first quarter of the 20th century.

In Upper Egypt the transfer of Sohag's governorate capital from Gerga to Sohag and the transfer of the departure point of the "Hajj" (pilgrimage to Mecca) from Gerga to Suez, led to the decline of Gerga and had a stagnating effect on Qena and the port of Safaga. These two urban settlements benefited commercially from this yearly pilgrimage to Mecca.

Although Assiut experienced sustained growth due to its rail connection to Cairo in 1874, and its flourishing caravan trade with the Sudan, this growth was not long lived. Wars diminished the Sudanese trade to a trickle, and European competition of inexpensive machine produced textiles ruined Assiut's silk textile industry.

The second half of the 19th century was characterized by the very substantial growth of Cairo and its emergence as the modern metropolis known today. This started during the rule of the Khediv Ismail. In a period of 15 years, from about 1880 to 1895, Cairo's population grew 52 percent, when other cities increased collectively by 38 percent. Its share of urban growth was about 44 percent and its population equaled 37 percent of the total urban population. Cairo grew at an annual rate of 3.5 percent. Being the seat of national government and at the "crossroads of the world", it became in response to economic opportunities the hub of international commerce, especially of the cotton boom. It attracted foreign houses of commerce and industry, as well as foreign professional expertise, educational missions and a host of other manifestations of western culture. By the end of the 19th Century, the number of foreigners in Cairo amounted to 23 percent of all foreigners in Egypt. Cairo's growth was also caused by the administrative machinery established by the British occupation; government jobs and employment opportunities in the tertiary sector, working with or for foreigners, attracted migrants from provincial towns and rural areas.

The first half of the 20th century was a succession of conflicts. Egypt experienced two world wars, a period of unprecedented economic boom, and the devastating depression of the 1929-1930.

In agriculture the practice of multiple cropping was extended. However, despite considerable investment in irrigation works, bad land management reduced agricultural productivity. This decline was caused by exhaustion of the land from overcropping, poor drainage and substantial use of chemical fertilizers.

Before World War II, Egypt ranked 10th among fifty countries in the use of chemical fertilizers. As Egypt's exports were 90 percent of agricultural products or semi-produced goods, this decline of productivity was reflected in the decreasing value of twelve main crops (in 1917: L.E. 112 million; in 1939: L.E. 65 million). During World War II agricultural production fell about 25 percent. This resulted in Egypt becoming a net importer of food commodites.

Similar to agriculture, Egypt experienced severe fluctuations in its industry. After the turn of the century, industrial training was reestablished in 1907. However, industry was still oriented toward an agricultural base of raw materials. The advent of World War I and the difficulties of importing industrial machinery resulted in a further concentration on agricultural production. Available capital of the private sector was invested in agricultural land speculation and real estate rather than in industry or in the improvement of social and technical infrastructure.

Following World War I, Egypt experienced a period of boom which could be characterized as the real beginning of modern industrialization of the country. (See Table IV-4) There were changes in attitudes and institutions. The Bank Misr was founded in the early 1920's, and the Department of Industry Labor & Commerce in the 1930's. There was reform of customs and import taxes, coupled with the devastating experience of the 1929-1930 cotton trade depression. Egyptian and foreign investors started upon a path of diversification and with impetus for establishing modern plants in textiles, cement, chemicals, petroleum refining, and glass.

World War II stalled the continued industrialization of the country. General stagnation settled in. The difficulties of importing goods and machinery led to severe shortages in domestic production and the loss of indigenous industrial employment. However, one benefit was realized: the military establishment had generated by the end of the war, a pool of 200,000 skilled workers.

The fluctuations of this period, in agriculture and in industry, influenced urbanization of Egyptian settlements in various ways. Although agricultural productivity started to show decline, the significant expansion of cropped areas delayed the rural migration to the towns until after World War I.

Natural increase swelled medium-sized towns in the Delta and in Upper Egypt, and especially the small sized settlements of 5,000 to 10,000 population. This was aided by the

improvement of health conditions which reduced the death rate of the rural population.

New industrial activity of the 20's and 30's, and the two wars caused more growth in some urban centers at the expense of others. The boom which preceeded World War II favored the location of industry in Alexandria, Cairo, the Delta cities of Mahalla, Kafr El Dawar, Kafr El Zayat, Suez and Ismailia. Alexandria grew in capital industries while Cairo proper had a prodominance in intermediate and consumer industries as well as traditional crafts.

Subsequently, Cairo's expansion was due to the rapid development since the 1940's of its industrial suburbs of Shoubra El Kheima, Giza and Helwan, as well as its residential suburbs of Heliopolis, Maadi, Dokki and Giza. Administrative annexations of smaller settlements and extensive transportation links to its environs started to make Cairo a multinucleated agglomeration.

The British military establishments located in the Canal Zone, Cairo and Alexandria attracted streams of migrants workers from rural and provincial towns, especially from Upper Egypt, who found economic opportunities in servicing the army. This resulted in an explosive growth of employment in the tertiary sector. Growth in Cairo's and Alexandria's populations surpassed the growth in their industrial employment; Ismailia and Suez tripled their populations.

TABLE IV-4

SOME ECONOMIC INDICATORS 1917-1939

Year	Population (thousands) (1)	Cultivated Area (thousand feddans) (2)	Cropped Area (3)	Cotton Yield (kantar/feddan) (4)	Use of Fertilizers (kg/feddan of cropped area) (5)	Volume of Cotton Exports (thousand kantars) (6)	Value of Egyptian Exports (LE thousands) (7)	Terms of Trade Index (8)
1910-14 average		5,206	7,610	4.27	(9.0)	6.767	30,037	100
1917	12,751	5,269	7,677	3.75	4.8	4,074	41,519	71.1
1920		5,305	7,807	3.30		4,001	88,010	118.8
1921		5,354	8,060	3.37		4,792	42,473	56.8
1922		5,341	8,205	3.73	14.4	6,479	51,366	81.3
1923		5,387	8,104	3.81		7,473	59,832	89.1
1924		5,192	8,070	4.07		7,254	67,170	101.4
1925		5,420	8,213	4.14		6,424	60,466	125.1
1926		5,385	8,457	4.29		6,835	42,693	81.0
1927	14,218	5,544	8,661	4.01	26.0	7,383	49,164	92.0
1928		5,616	8,623	4.64	31.9	7,433	56,504	91.4
1929		5,549	8,634	4.63	38.0	7,625	52,430	86.9
1930		5,549	8,634	3.97		5,928	32,093	66.1
1931		5,485	8,547	3.78		7,397	28,074	54.2
1932		5,464	8,216	4.53	28.6	6,699	26,995	55.5
1933		5,384	8,283	4.75		7,854	28,848	54.0
1934		5,277	8,078	4.36	52.2	8,564	31,056	58.4
1935		5,229	8,054	5.11	81.0	8,577	35,693	63.0
1936		5,361	8,101	5.31	71.2	7,798	32,979	63.2
1937	15,933	5,281	8,358	5.37	79.0	8,900	39,753	50.4
1938		5,312	8,474	4.67	63.0	7,937	29,342	44.1
1939		5,338	8,522	5.35	56.9	9,103	34,081	40.2

ORIGINAL SOURCES: (1) Population Censuses; (2) and (3) Annuaire Statistique; (4) D. Mead, Growth and Structural Change in the Egyptian Economy, Homewood, Ill., 1967; (5) S. Radwan, 'Capital Formation in Egyptian Industry and Agriculture', unpublished Ph.D. thesis, London, 1973; (6) D. Mead, op. cit.; (7) 1917-30, A. Crouchley, The Economic Development of Modern Egypt, London, 1938; 1931-9, D. Mead, op. cit.; (8) D. Mead, op. cit. (2) and (3) were compiled by S. Radwan.

SOURCE: MABRO: The Egyptian Economy, 1952-1972, Oxford, 1974. Chapter 1, Historical Background.

From the early 1950's to the present, internal and external political events took place which promoted the development of economic activities in the country. In 1952 the revolution occurred, and a new government came into power. It found itself facing dismal social and economic inequalities in the country.

The new government found that between 1917 and 1947 the country had reversed the relationship between its population growth (67 percent) and the growth of cropped land (20 percent), resulting in a greater migration from the country to the cities based on Egypt's historical profile of the period.[1] (See Table IV-5) From 21 percent in 1917, the urban ratio became 30 percent in 1947, with no sign of decline. Even with the rural migration into the city, the population pressure was not eased on the land due to the unequal distribution of land ownership (less than 6 percent of the population owned 65.5 percent of cultivable land).

On the other hand, difference in social and economic conditions was large. The economy was not growing as fast as the population. To address these problems, two avenues were to be considered by the new government: to increase the productive capacity through industrialization, and to increase agricultural capacity by creating additional agricultural land.

The government did not succeed in redirecting domestic investment away from the primary agricultural sector. Furthermore, the low per capita income did not stimulate enough public savings for capital formation necessary for investment in new industrial growth. Consequently the government resorted to a more planned and nationally directed economy through nationalization of the major establishments, especially those related to industrial production.

To effect this, the first five-year plan (1960-1965) was formulated. The objective of the plan was to decentralize investment in industry in order to stabilize the provincial/rural areas and to stem their flows of migration to Cairo and Alexandria.

The intended investment for industry was to be 46.9 percent in urban areas and 53.1

percent in rural areas. The rural investment was almost equally distributed over the non-urban governorates in the country. The investments in urban areas were to be concentrated in Cairo, Alexandria and Suez — the three urban areas which already accounted for about 50 percent of the number of industrial workers in the country. There was no intent to increase the per capita income for the agriculture sector, but there was intent to increase the per capita industrial income 1.7 times in a period of 10 years.

It is important to note that in 1959-60 the industrial income was about 3.5 times its agricultural equivalent, and that in 1970 it was expected to increase, according to the plan, to 5.5 times the agricultural income. Such differentials, when the major urban areas still had the majority of investments, could hardly realize a stemming of migration flows from the rural areas to the urban industrialized centers of Cairo, Alexandria and Suez.

In the agricultural sector, the land reform laws designed to redistribute land ownership in a more equitable way did not achieve their goals of providing stimulus to economic development.

To overcome the shortage in agricultural land, the government embarked on the building of the High Dam at Aswan. The benefits of this mammoth project were seen as trifold: First, controlling water supply accumulated in its upstream reservoir would result in increasing the area of irrigated arable land by at least 20 percent. Second, the total electric power generated in the country could be doubled, enhancing the development of industry. Third, additional job opportunities would be generated and made available to the ever increasing labor force.

However, the 1967 June war and the continuing war stress situation until the 1973 October war, did not help to promote the government's socio-economic development plans. On the contrary, by 1973 Egypt was experiencing a weakening of the economy and a general deterioration of the services provided to the public. This is when the National Policy embarked on two major changes.

The first change was the steps taken towards negotiating a lasting peace treaty with Israel and eliminating the war conditions which were draining the economy of the country since 1948.

The second major change in the government policy was the establishment in 1974 of the Open Door policy which allowed better opportunities for foreign and local investments alike, more lenient import laws, especially regarding consumer goods; and the permission for skilled and unskilled manpower to work abroad especially in the oil-rich Arab countries.

The main characteristic of this period is that there were no noticeable changes in the

TABLE IV-5

LEVEL, SHARES, AND RATES OF GROWTH OF RURAL AND URBAN POPULATION 1937-1966

Years	1937	1947	1960	1966	1976
(a) Population (absolute figures)					
Total Settled Population	15,920,694	18,966,767	25,984,101	30,075,858	36,626,204
Rural population	11,429,001	12,603,510	16,120,398	17,691,356	20,589,801
Desert Governorates	109,610	160,941	212,606	351,759	262,854 (Urb. 55.04%, Rur. 44.96%)
Total Urban population*	4,382,083	6,202,316	9,651,097	12,032,743	15,773,549
Five Metropolitan Governorates	2,278,745	3,474,276	5,598,056	6,912,773	8,202,421**
Other Towns	2,103,338	2,723,040	4,053,041	5,119,970	7,571,128
(b) Shares in Total Population (percentages)					
Total Settled Population	100.00	100.00	100.00	100.00	100.00
Rural Population	71.79	66.45	62.04	58.82	56.22
Desert Governorates	0.69	0.85	0.82	1.17	0.72
Total Urban Population	27.52	32.70	37.14	40.01	43.06
Five Metropolitan Governorates	14.31	18.31	21.54	22.98	22.39
Other Towns	13.21	14.39	15.60	17.13	20.67
(c) Annual Average Rates of Growth					
Periods	1937-1942	1947-1960	1960-1966	1966-1976	
Total Settled Population	1.77	2.45	2.47	2.0	
Rural Population	0.98	1.91	1.56	1.5	
Desert Governorates	3.91	2.17	8.76	-2.9	
Total Urban Population	3.53	3.46	3.74	2.7	
Five Metropolitan Governorates	4.31	3.74	3.58	1.7	
Other Towns	2.63	3.09	3.97	4.0	

ORIGINAL SOURCE: Computed from Population Censuses for 1960, 1966, 1976.

		Urban	Rural	Urban
For 1976:	Red Sea	48,438	6,977	87.4%
	N. Alley	34,769	50,406	40.8%
	Matruh	51,756	60,791	46.0%
	Sinai	9,717	--	100.0%

SOURCE: Updated by NUPS from MABRO, The Egyptian Economy 1952-1972, op. cit.

NOTE: * Excludes desert governorate which censuses treat as urban areas.

** Of which 179,764 are rural, included in Ismailia.

patterns of growth of the Egyptian urban system. With the exception of the period 1966-1976, the rate of urbanization has not changed since 1916; the percent of urban population is increasing in proportion to the total, and showing no indication of decline. Migration flows are continuing from upper and lower Egypt governorates to the "urban governorates" of Cairo, Alexandria, Port Said, Suez and Ismailia.

Since the mid-70's the government has embarked on a policy of new towns, within a radius of 100 kms from Cairo or Alexandria. Such towns as Sadat City, 10th of Ramadan, 15th of May, and New Ameriya near Alexandria, are intended to be self-sufficient settlements which offer employment opportunities and a comprehensive residential environment for their prospective inhabitants. They are intended to relieve Cairo and Alexandria from increasing population pressures.

The government is also considering the development of the remote areas outside the Nile Valley and has commissioned studies for the regional development of Sinai, the Red Sea Coast, the New Valley of the western desert, and the Mediterranean coast west of Alexandria. Regional planning and decentralized local government may be mechanisms for policy and plan implementation.

FOOTNOTES

1 Loza, Sara, Studies on Determinants of Fertility Behavior for Population Policies in Developing Countries, Belgium, 1980, Chapter Two, "Country Profile."

V. THE PUBLIC ADMINISTRATION[1]

Egypt has historically had a highly centralized system of public administration. Islamic cities throughout the Middle East have tended to centralized systems. In Egypt this tendency has been reinforced because of the homogeneous population, the ease of communications along the Nile Valley, and the need to control the water usage of the Nile for irrigation.

During the Ottoman Empire in Egypt the urban population had no formal participation in executive authority. Napoleon set up a diwan (or Council) for Cairo (1798-1801) made up of local persons which was under close French control and supervision.

The British, starting around 1882, appointed central government officials, responsible to the Minister of Interior for the provinces. Districts were headed by police officers and the villages by a local head man also serving at the pleasure of the Minister of Interior. The main purpose of "local government" was to preserve law and order. Individuals and their descendants often continued to administer their villages as representatives of the central government for generations.

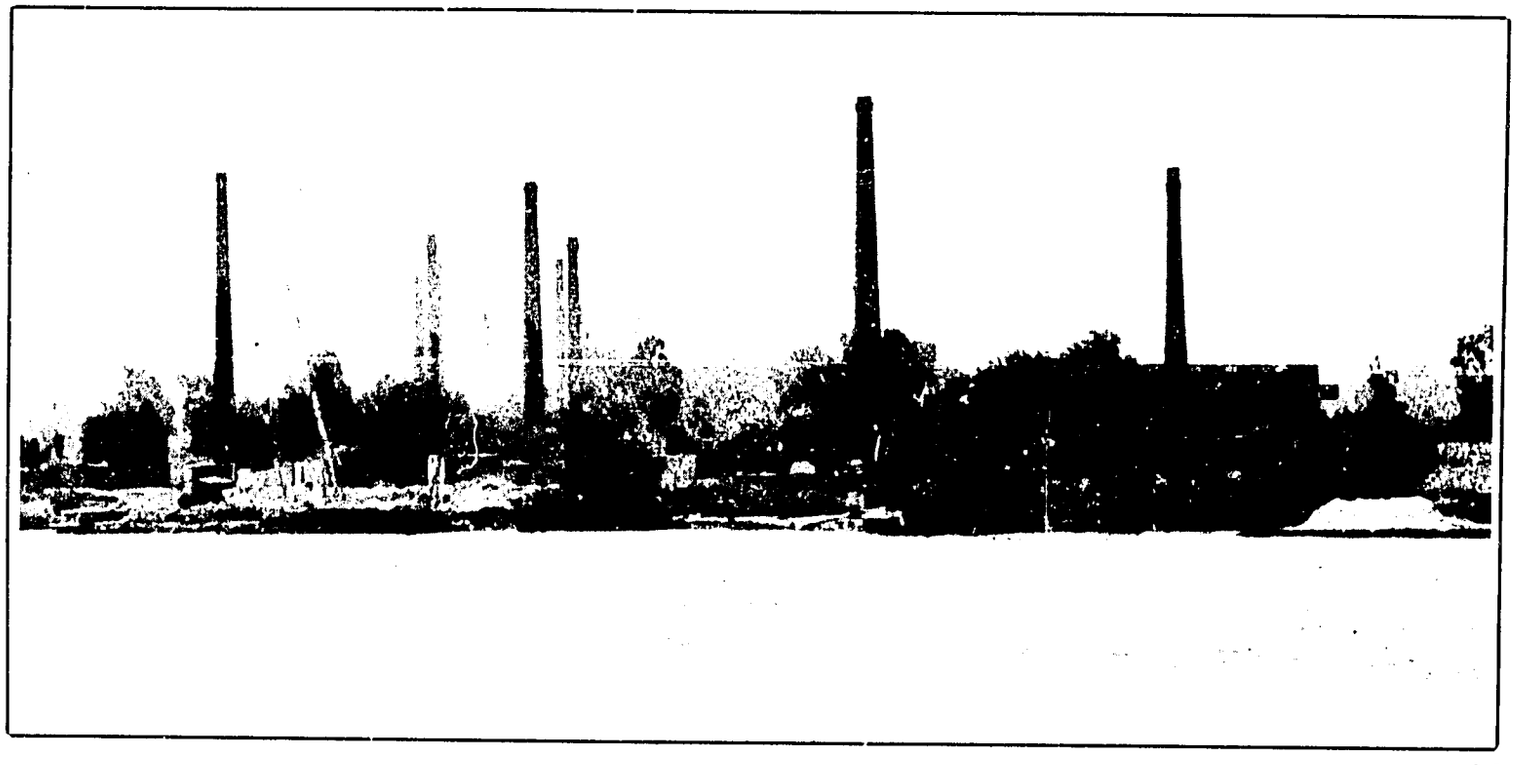
In 1883 a decree provided for provincial councils with certain authority to legislate local issues; but the law was not implemented until 1909 and provided for no local budget.

The first attempt at city government was the creation of a municipality in Alexandria in 1890. The focus was on the provision of local services to be paid for through raising local taxes. Previously "voluntary taxes" were raised by committees of residents starting in 1869. The Alexandria Municipality was set up only after the Consuls of foreign government agreed that their citizens in the city could be taxed.

Between 1893 and 1917 about thirty "local commissions" were established in other towns to administer "voluntary taxes" and provide water supply, street paving, cleaning services, etc. These local commissions did not have legislative powers and the central government controlled them. The provincial governor headed the commission and its members were partially appointed by him. In any case elected members could be dismissed by the Minister of the Interior, and the Minister of Public Works had to approve all projects.

Further legislation in 1934 and 1944 dealt with the establishment of provincial councils, but the system continued to be highly centralized and local government remained a "top down" approach.

MODERN INDUSTRY BEGAN WITH A BOOM AFTER WORLD WAR I



Cairo had no official local government until 1949. All city administration and government functions were carried out either by the Ministry of Public Works or private corporations (usually foreign). Between 1949 and 1952, Cairo was governed by a council which had some elected and some appointed members. The council was suspended in 1952.

One of the reasons advanced for the slow development of local government in Egypt has been the recognition of the strong position and privilege of foreigners in Egypt which acted to suppress taxation for urban services and city works.

After the revolution, the central government began an overhaul of the local government system and considered steps which would lead to decentralization of the powers of governorance to the governorates and local bodies. Generally these initiatives have moved slowly, in part because of the lack of local financial resources, limitations on qualified staff, and in part because of the entrenched interests of the historically centralized system of local government.

FOOTNOTES

1 Hardman, Anna, Local Government in Egypt and Its Role in Urban Transportation Planning and Implementation, Cairo University/M.I.T., 1978.

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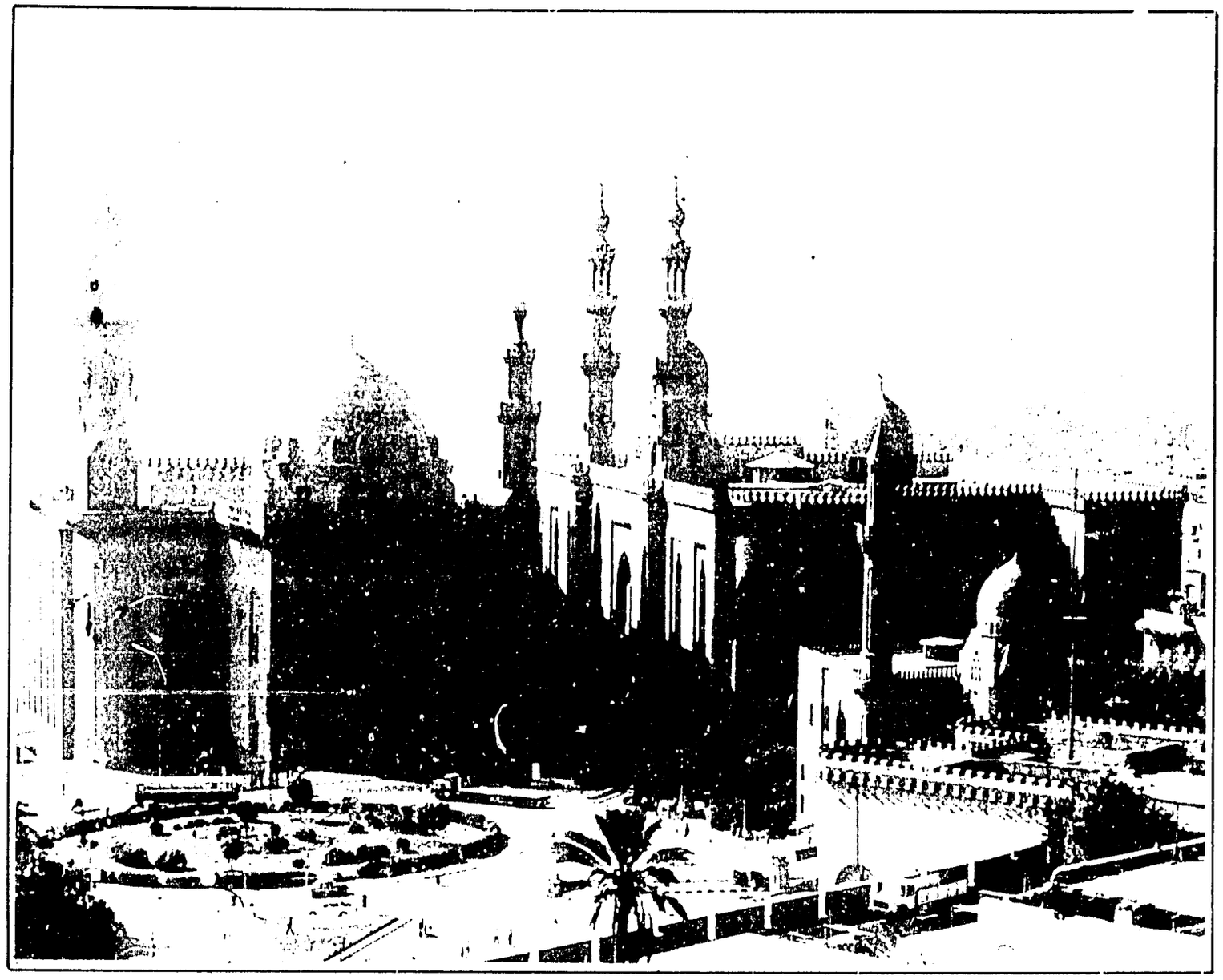
ISLAMIC CITIES THROUGHOUT THE MIDDLE EAST HAVE TENDED TOWARD CENTRALIZED SYSTEMS



Part Two: National Level Data

I. Natural Features and Natural Resources: Land, Climate, Mineral Resources, Tourism and Water Resources

II. National Population Characteristics, Migration and Demogaphic Projections

III. National Macro Economic Profile

IV. National Economic Sectoral Profiles

V. National Infrastructure Networks

VI. Inter-Country Comparisons

EGYPT NUPS دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

PART TWO

NATIONAL LEVEL DATA

I. NATURAL FEATURES AND NATURAL RESOURCES: Land, Climate, Mineral Resources, Tourism and Water Resources

A. Land Features

Egypt lies in the desert belt of northeast Africa. The Nile flows through Egypt from south to north. Although the country encompasses an area of almost 100,248 square kilometers, the population occupies only 3.5 percent of the land, almost entirely in the Nile Valley, the Delta and a few scattered oases. The cultivated area (around six million square kilometers) is made fertile and irrigated by the Nile River. (See Map I-1)

Egypt has four main regions:

1. The Nile Valley, Delta and Fayoum Depression

The Nile Valley and Delta have most of Egypt's agricultural land. They lie along the 1,540 kilometer course of the Nile River. The Nile Valley and Delta have rich soils formed by silt carried down by the Nile.

Egypt's Nile Valley south of Cairo is a long narrow ribbon, in places only 2 kilometers and seldom more than 25 kilometers wide. The eastern bank of the Nile is narrow and the western bank variable in width.

The Valley is lined with cliffs of granite, limestone and sandstone. From Cairo northward, the Nile divides into two separate branches, the Damietta and Rashid branches, which form the Nile Delta. This triangular area, about 100 kilometers long, is 249 kilometers wide where it meets the Mediterranean Sea, with a land slope of one meter every 10 kilometers. The Delta has swampy land, salty lakes and highly fertile soil.

A lateral branch of the Nile, converted and extended as a main canal (the Bahr Yussef) flows parallel to the river from Assiut to Fayoum.

The Fayoum is a natural depression contiguous to the western edge of the valley some 120 kilometers south of Cairo, with a total area of 1,200 square kilometers.

The Bahr Yussef Canal contributed to the transformation of this small oasis into a rich agricultural province.

2. The Western Desert

The Western Desert stretches from the west of the Nile Valley to the Egypt-Libya border and from the Mediterranean in the north to the Egypt-Sudan border in the south. The average elevation of the Western Desert is 500 meters above sea level with no high peak except for the Oweinate Mountain in the southwest (1,000 meters).

The Western Desert, which is part of the Great Sahara, is over 40 percent sand dunes and also has several depressions. The Quattara Depression, which is Egypt's lowest point, is 133 meters below sea level and is uninhabited. There are other depressions such as El Wahat Kharga, El Wahat Dakhla, Wahat Siwa, Wadi Rayan to the southwest of El Fayoum and Wadi El Natroun. Most of these depressions are inhabited, creating oases in the desert.

3. The Eastern Desert

The Eastern Desert stretches from the Nile Valley to the Gulf of Suez and the Red Sea, and from the Suez in the north to the Egypt-Sudan border in the south. It has a total area of 203,000 square kilometers (21 percent of the total area of Egypt). Most of the Red Sea coast is bordered by flat lands, 3 to 20 kilometers wide. Behind these lands, there is a chain of mountains (Red Sea Mountains), the highest of which is Gebel Shayib El Banat (2006 meters).

4. The Sinai Peninsula

The Sinai Peninsula is separated from Egypt by the Suez Canal and the Gulf of Suez, with a total area of 61,000 square kilometers (approximately 6 percent of the total area of Egypt). The Sinai can be divided into three regions:

i) Northern Sinai, which includes the coastal plain between Rafah and Port Said, followed by a sand dune zone in the interior. A coastal highway crosses this part between Rafah and Qantara. Included is Wadi Al Arish located between Jibal Al Tih in the south and the Mediterranean in the north.

ii) Middle Sinai is essentially a stony barren zone 400 meters above sea level. It is bisected by a paved road connecting Giza and Ismailia.

iii) South Sinai is a mountainous region of ancient rocks and a few mountain peaks, including Egypt's highest peak, Mt. St. Catherine, which is 2,642 meters above sea level.

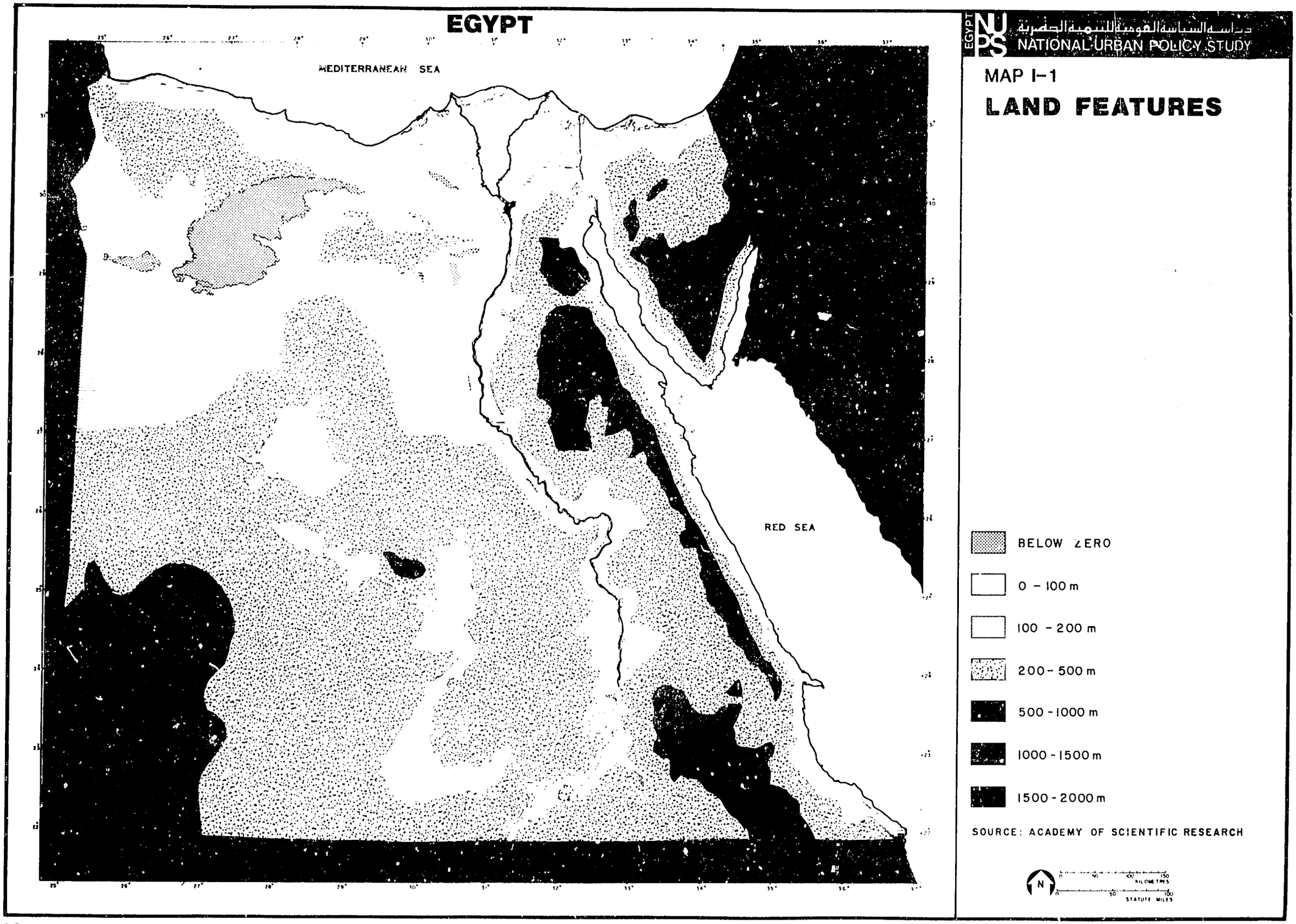
B. Climate

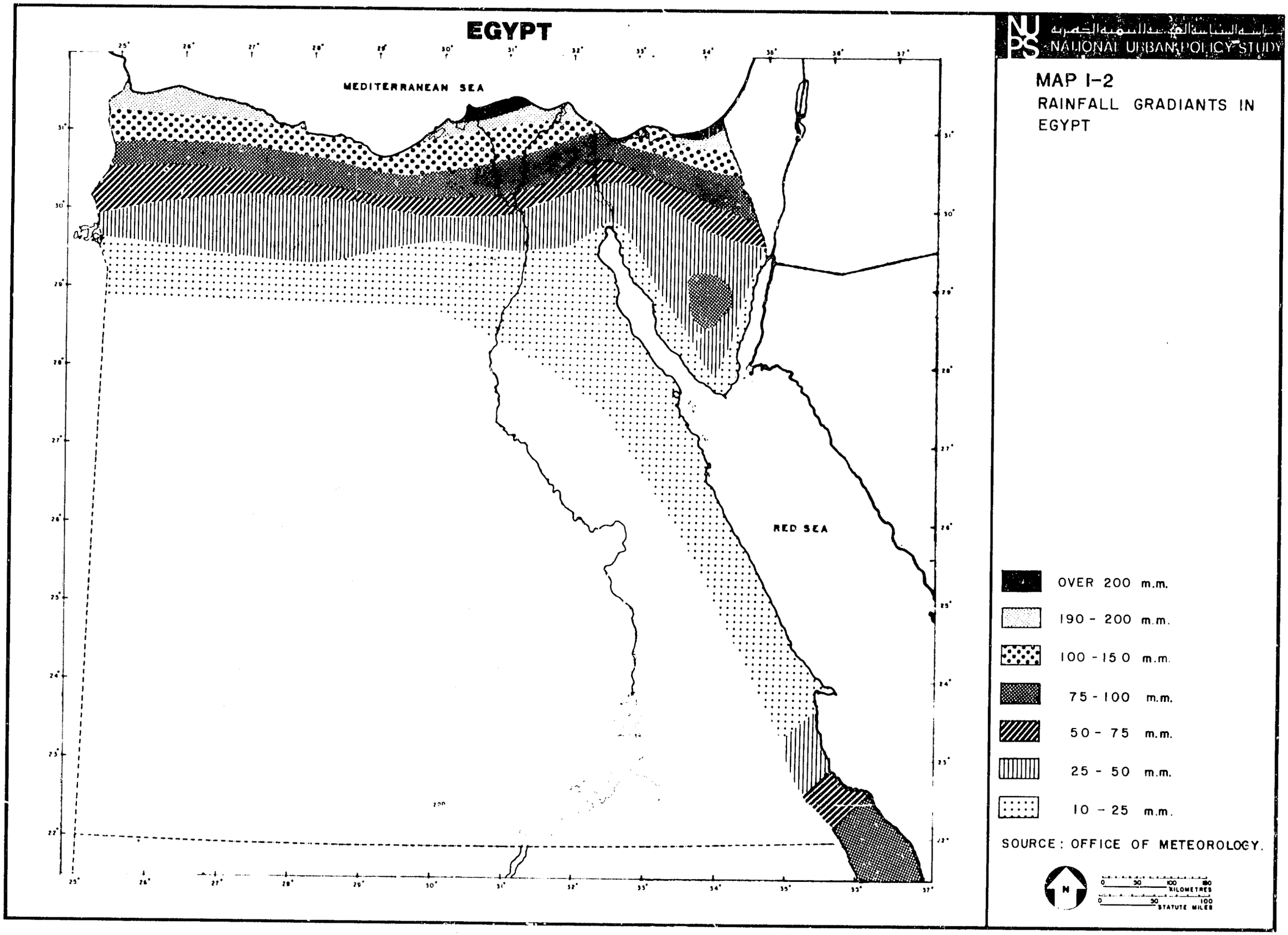
The climate in Egypt is not extremely varied. There are only two main seasons: summer and winter. The autumn and spring are short and undifferentiated. The temperature hardly ever approaches freezing and the relatively warm winter climate permits plant cultivation throughout the year.

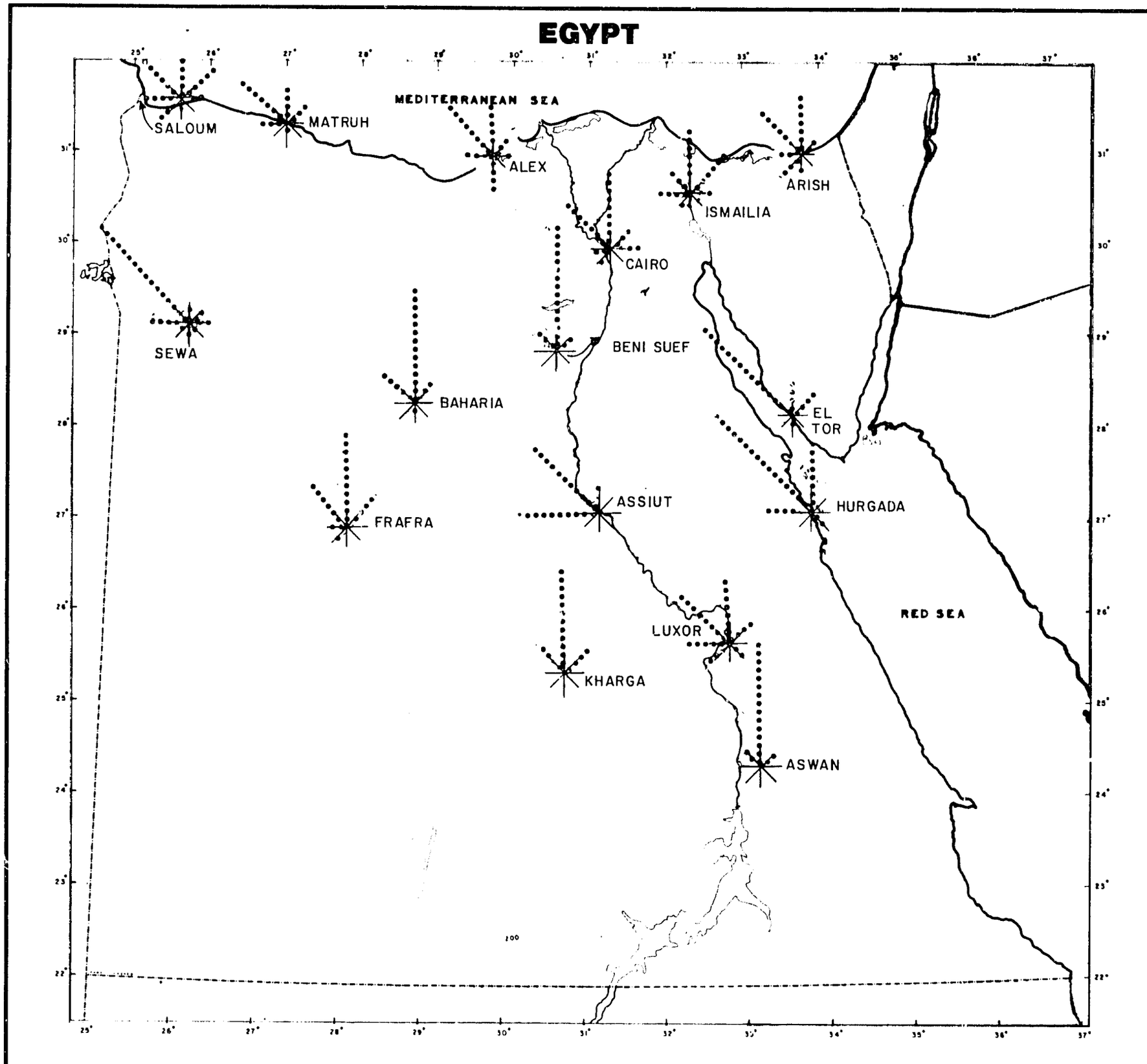
Egypt has a generally dry climate. The Mediterranean coast of Egypt receives the most rain with an average of 20 centimeters a year. Much less rain falls south of the coastal strip. Cairo receives 2.5 centimeters of rain yearly and areas to the south receive even less. (See Map I-2)

Where the sea ceases to exert its moderating influence and the desert dominates, temperatures fall sharply at night. Differences of 15°C from day to night are not uncommon in Upper Egypt.

Summer temperatures average between 27°C and 32°C in most of Egypt. Southern Egypt


EGYPT
MEDITERRANEAN SEA
RED SEA
EGYPT
NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY
MAP I-1
LAND FEATURES
BELOW ZERO
0 - 100 m
100 - 200 m
200 - 500 m
500 - 1000 m
1000 - 1500 m
1500 - 2000 m
SOURCE: ACADEMY OF SCIENTIFIC RESEARCH
N
KILOMETRES
STATUTE MILES


EGYPT
MEDITERRANEAN SEA
RED SEA
NATIONAL URBAN POLICY STUDY
MAP I-2
RAINFALL GRADIANTS IN EGYPT
OVER 200 m.m.
190 - 200 m.m.
100 - 150 m.m.
75 - 100 m.m.
50 - 75 m.m.
25 - 50 m.m.
10 - 25 m.m.
SOURCE: OFFICE OF METEOROLOGY.
KILOMETRES
STATUTE MILES



NUPS
NATIONAL URBAN POLICY STUDY

MAP I-3
WIND ROSES IN EGYPT

Each dot (•) represents five days per year when the maximum daily wind velocity exceeds twenty-five kilometers per hour in the direction indicated.

SOURCE: OFFICE OF METEOROLOGY

N

0 50 100 150 KILOMETRES
0 50 100 STATUTE MILES

120

121

becomes especially hot because it is far from the cooling winds of the Mediterranean Sea. Summer temperatures rise above 34°C in Cairo and higher in the south, but they drop quickly after sunset. Winter temperatures average between 13°C and 21°C; sometimes cold air from the north lowers these temperatures sharply. (See Table I-1)

Northerly and northwesterly winds predominate throughout the year for the country's various regions. (See Map I-3)

C. Mineral Resources in Egypt

Mining and quarrying have been very ancient activities in Egypt. Since Pharaonic times deposits in the Eastern Desert and the Sinai were exploited to extract gold, copper, lead and zinc, feldspar, sulphur, as well as the semi-precious stones like amethyst, emeralds, peridot, porphyry and turquoise.

TABLE I-1
TEMPERATURE RANGES IN EGYPT

Area	Winter (Nov. - Apr.)		Summer (May - Oct.)	
	Max.	Min.	Max.	Min.
Port Said	20.6	14.2	28.7	22.8
Ismailia	23.0	11.0	34.1	20.1
Suez	23.9	11.5	34.2	20.5
Cairo	22.9	11.2	32.7	19.7
Luxor	27.8	9.8	35.2	19.7
Hurgada	23.1	12.6	30.9	22.8
Matruh	20.5	10.2	28.0	18.4
Minia	24.2	9.7	34.4	19.6
Siwa	24.0	7.3	35.9	18.1
Oena	28.0	10.8	39.1	22.2
Assiut	26.5	9.7	35.1	21.2
Wahat El Baharia	26.5	9.7	35.0	21.2
Wahat El Kharga	26.7	10.1	44.4	21.7
Alexandria	21.2	11.6	28.6	20.3

SOURCE: Office of Meteorology.

TABLE I-2
DISTRIBUTION OF MINERAL RESOURCES IN EGYPT
(as of 1979)
METALLIC ORE

ORE	Number of Locations						
	Total	Ancient	Detected, Preliminary Studies	Under Development, Reserves Estimated	Recent Past Exploitation None at Present	Present Exploitation	Not Exploited
Black Sands	3	--	1	--	1	--	1
Chromium	22	--	--	--	--	11	11
Copper	34	10	--	--	--	--	24
Copper/Nickel	5	1	2	--	--	--	2
Copper/Nickel/Lead	8	3	--	1	--	--	4
Gold	90	74	--	2	13	--	1
Iron	26	--	2	11	--	2	11
Lead/Zinc	9	3	--	1	1	--	4
Manganese	26	--	--	4	7	12	3
Molybdium	9	--	1	--	2	--	6
Nickel	1	--	--	--	--	--	1
Ochre	3	--	--	--	--	2	1
Rare Metals	8	--	--	1	--	--	7
Tin/Tungsten	1	--	--	--	1	--	--
Tin/Rare Metals	5	--	--	3	--	--	2
Titanium/Vanadium	4	--	--	--	1	--	3
Tungsten	8	--	1	--	1	--	6
Urbanium	1	--	--	--	1	--	6
Uranium	1	--	--	--	--	--	1
TOTAL	263	91	7	24	26	27	88

SOURCE: Compiled from Mineral Map of Egypt, 1979.

Tables I-2 to 4 show the distribution of known mineral resources in Egypt as of 1979. Table I-2 shows the distribution of Metallic Ore. Of a total 263 known occurrences, 27 locations are presently exploited, 24 mines have had their reserves estimated and 88 locations are not yet exploited. Table I-3 shows the distribution of Non-Metallic Ore. Of 154 known occurrences 35 locations are presently being exploited, 11 have had their reserves estimated and 100 locations

TABLE I-3
DISTRIBUTION OF MINERAL RESOURCES IN EGYPT
(as of 1979)
NON-METALLIC ORE

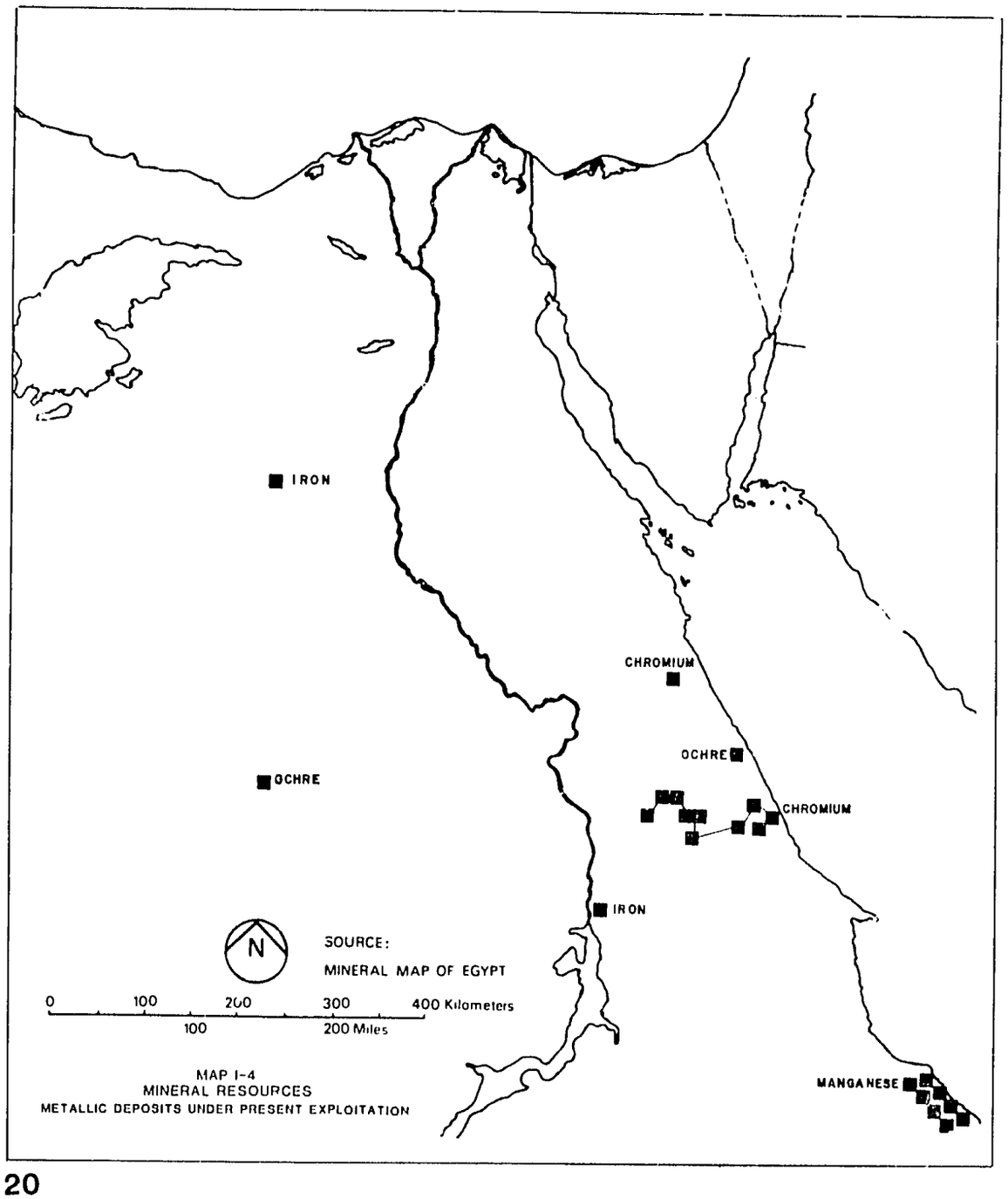
ORE	Number of Locations						
	Total	Ancient	Detected, Preliminary Studies	Under Development, Reserves Estimated	Recent Past Exploitation None at Present	Present Exploitation	Not Exploited
Asbestos	15	--	--	--	--	1	14
Baryte	15	--	--	--	--	2	13
Bentonite	2	--	--	--	--	2	--
Diatomite	7	--	--	1	--	2	4
Feldspar	13	1	--	--	--	1	11
Fluorspar	11	--	--	--	--	2	9
Graphite	5	--	--	--	--	2	3
Kaoline	10	--	--	--	4	4	2
Magnesite	8	--	--	--	--	2	6
Phosphate	24	--	--	8	2	8	6
Quartz	4	--	--	1	--	1	2
Sulphur	5	1	--	1	--	1	2
Talc	35	--	--	--	--	7	28
TOTAL	154	2	--	11	6	35	100

SOURCE: Compiled from Mineral Map of Egypt, 1979.

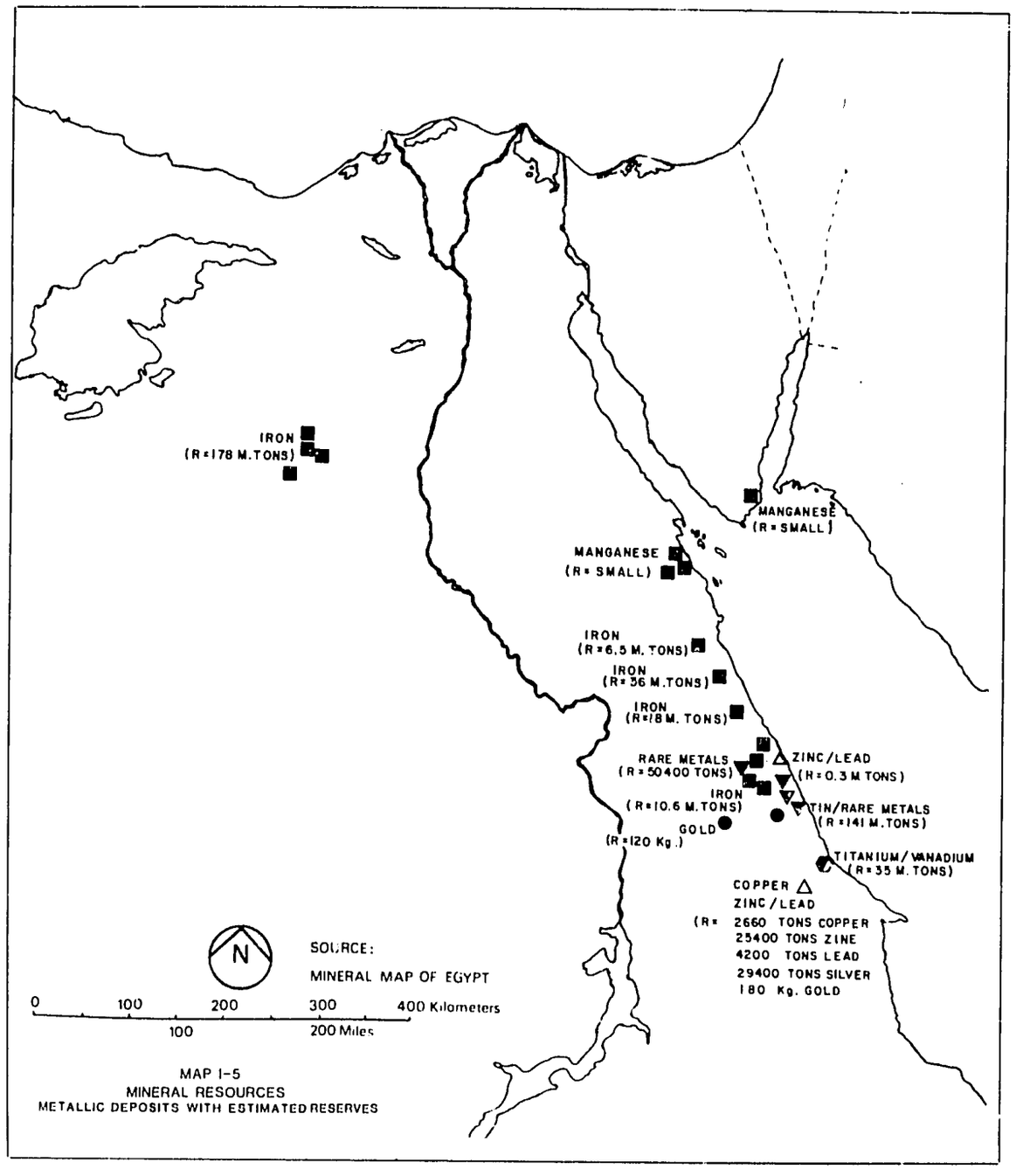
are not yet exploited. Table I-4 shows the distribution of Quarries and Salines. Of 219 known occurrences, 48 locations are being exploited, 20 have had their reserves estimated and 137 locations are not yet exploited.

Maps I-4 and 5 show respectively the general locations of Metallic Ore being exploited, and the sites where its known reserves have been estimated. Maps I-6 and 7 show respectively the general location of Non-Metallic Ore being exploited, and the sites where its known reserves have been estimated. Maps I-8 and 9 show the general location of Quarries and Salines being exploited. The preceding maps are abstracted from the Mineral Map of Egypt.[1]

Recent interviews with officials of the Egyptian Geological Surveys and Mining Authority indicate that quarrying activity has been flourishing in Egypt, since most of it is done in areas quite accessible to urban areas (e.g. foothills of the eastern and western desert plateaus bounding the Nile Valley) and does not need substantial investments in machinery and



MAP I-4
MINERAL RESOURCES
METALLIC DEPOSITS UNDER PRESENT EXPLOITATION

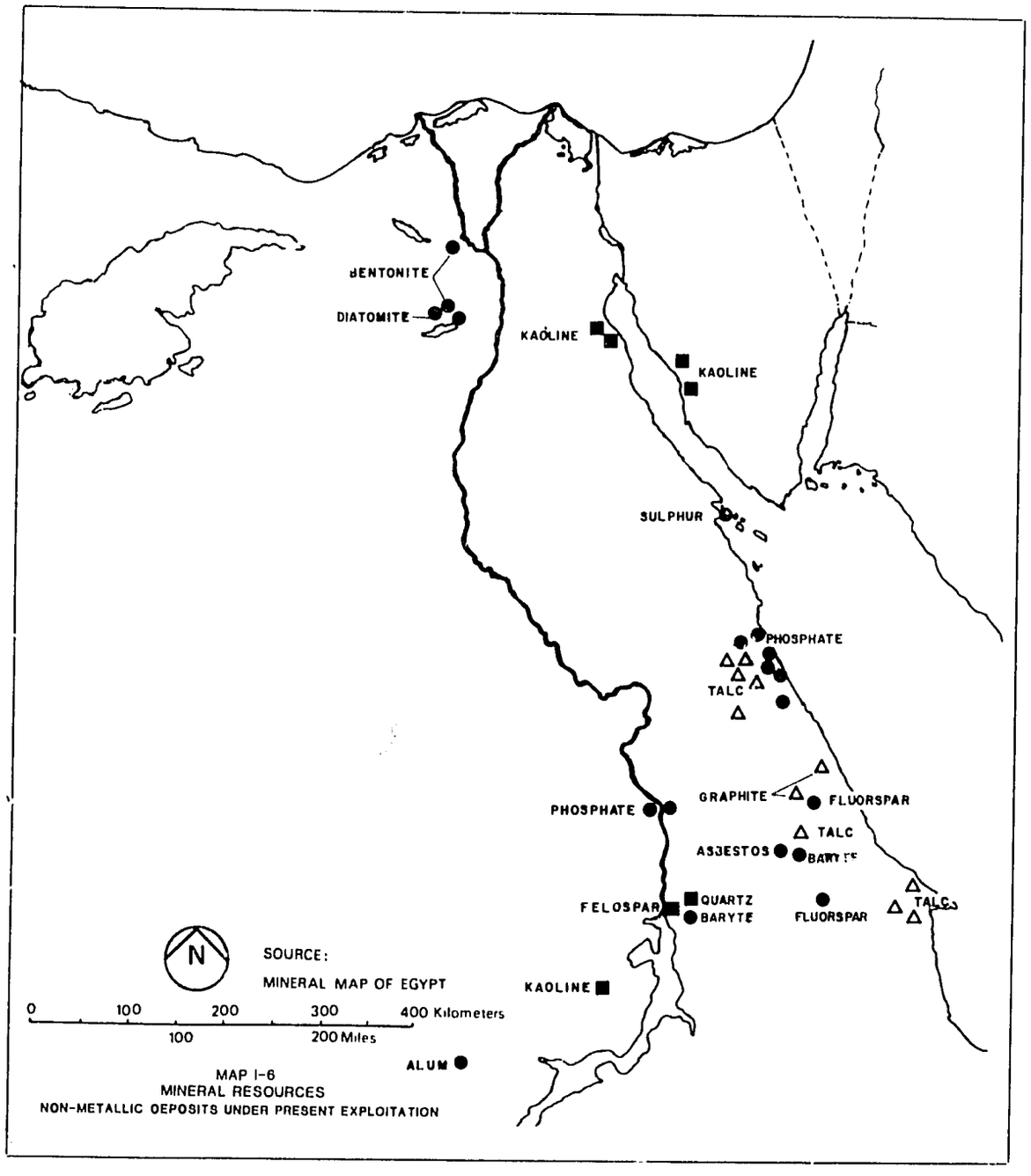


MAP I-5
MINERAL RESOURCES
METALLIC DEPOSITS WITH ESTIMATED RESERVES

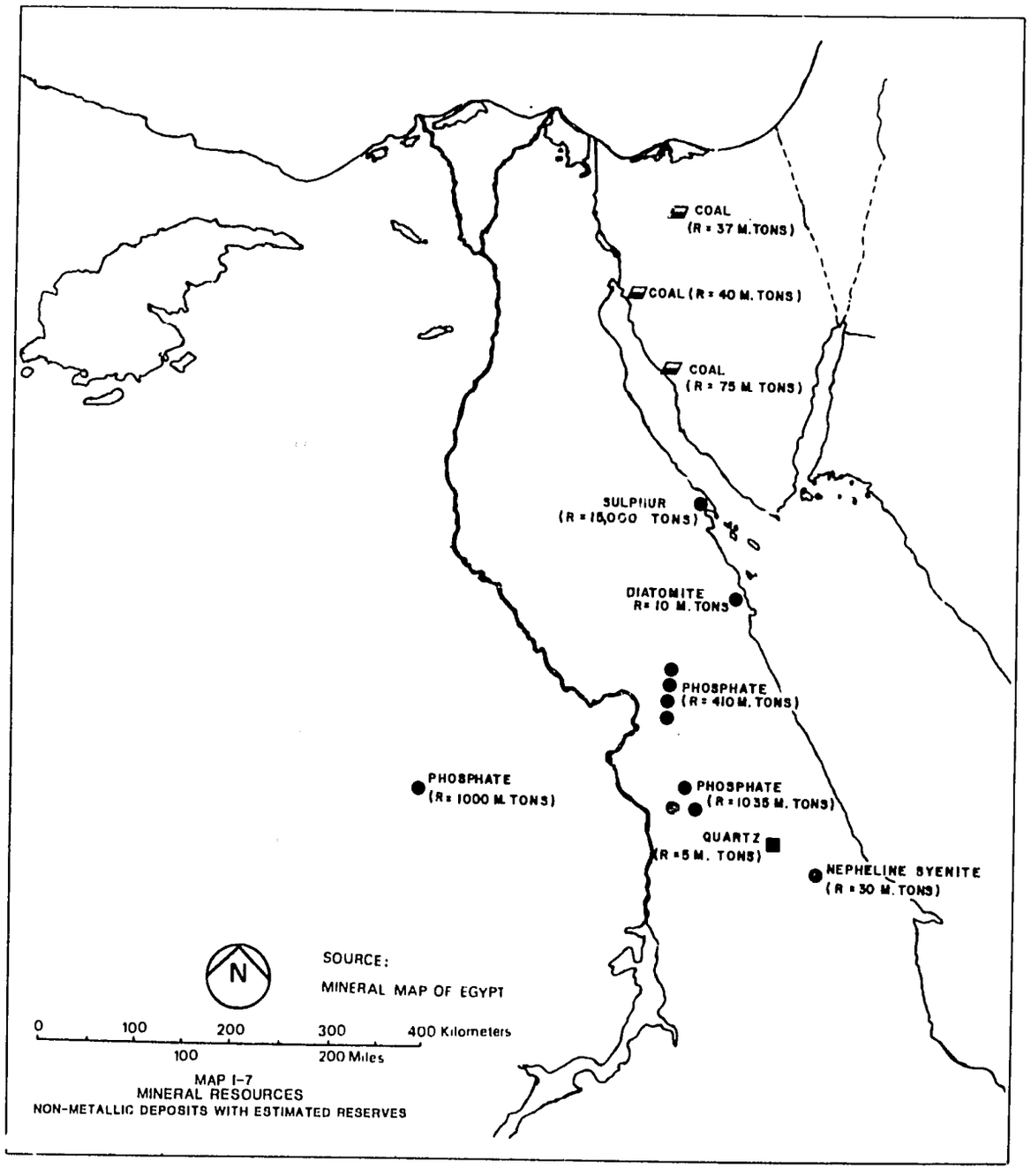
equipment. Since the start of 1981, 100 quarrying licences were granted to individual operators to produce material useful in the construction and building industry, such as limestone, gravel, sand and marble. At present, Metallic Ores are exploited at 27 locations.

Tables I-5 and 6 show the evolution of Mining and Quarrying Production from 1950 to 1978. Between 1965 and 1970 a stoppage or decline is apparent in the production of metallic and non-metallic minerals. This is due to the Egyptian-Israeli armed conflict of 1966 leading to the military occupation of the Sinai by Israel, and the conversion of substantial parts of the eastern desert to military grounds. Since 1972 production has picked up substantially relying mostly on deposits in the eastern and western deserts, substituting for the temporary losses in the Sinai.

Table I-7 shows the value of Mining Production to Gross Domestic Product. Although the information reflects only a five year period, it nevertheless shows the marginal contribution of mining to the national economy; this contribution ranged between 0.4 percent and 0.52 percent



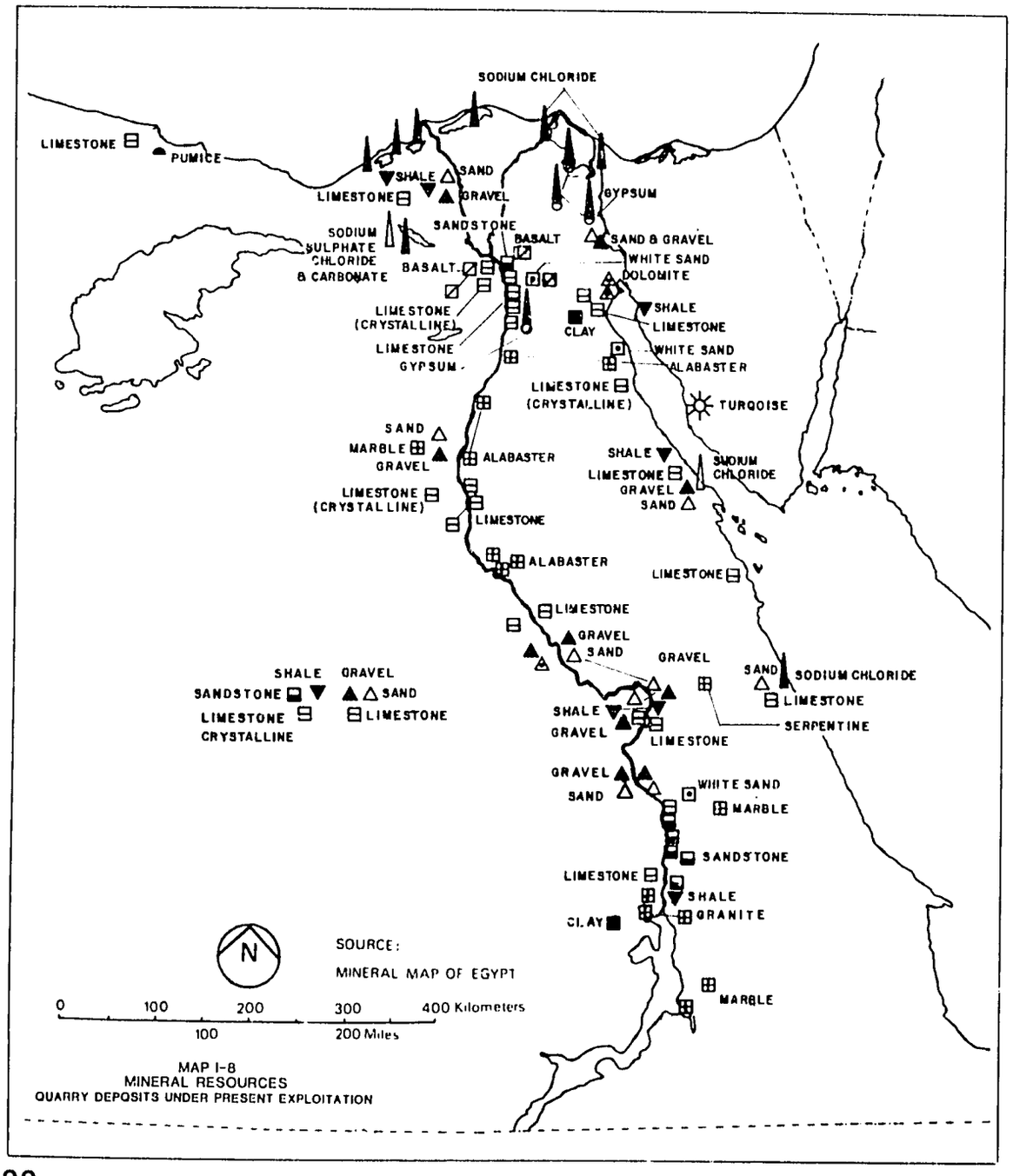
MAP I-6
MINERAL RESOURCES
NON-METALLIC DEPOSITS UNDER PRESENT EXPLOITATION



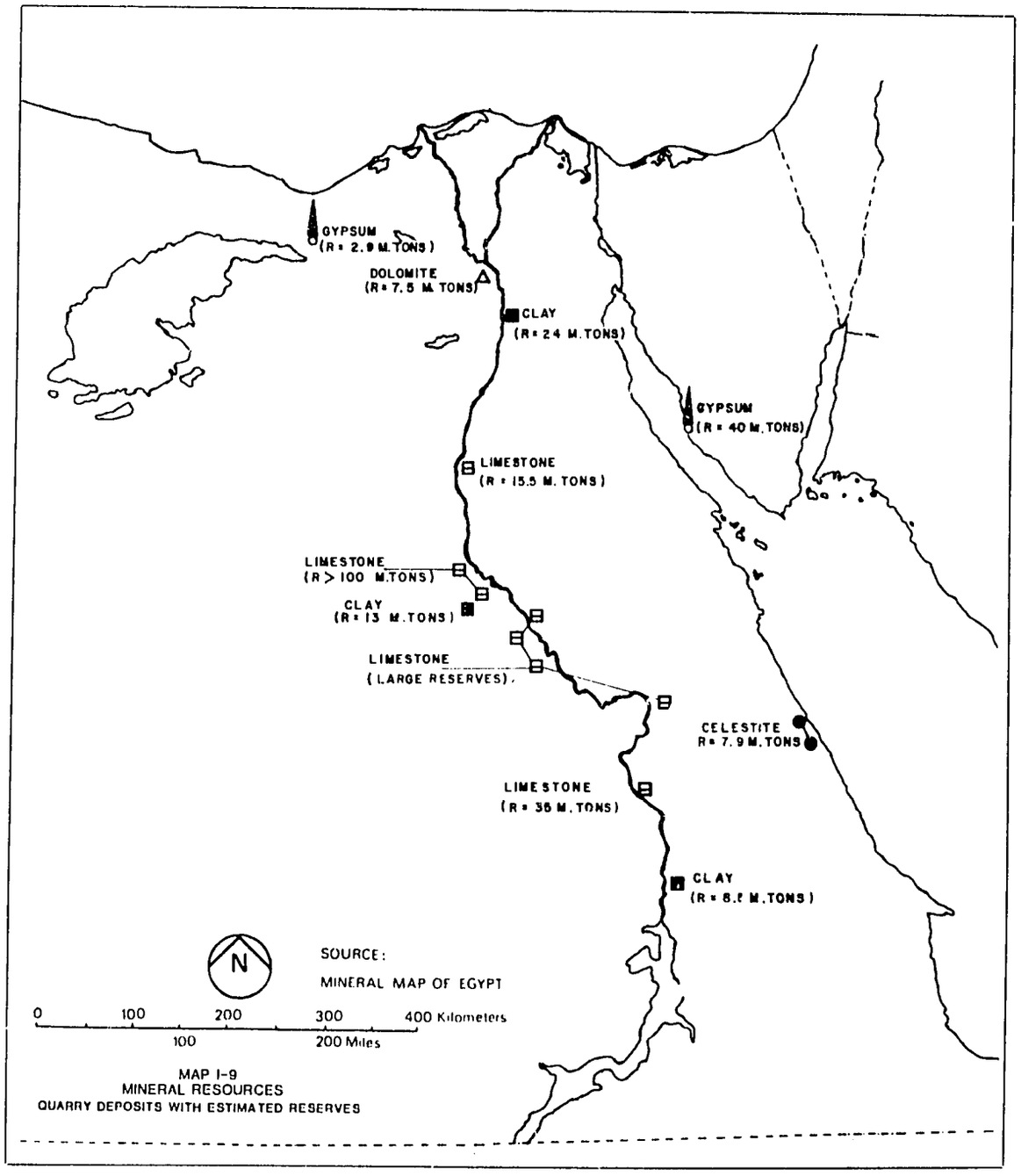
MAP I-7
MINERAL RESOURCES
NON-METALLIC DEPOSITS WITH ESTIMATED RESERVES

during this period and is still estimated to be less than 1.0 percent for the years 1980 and 1981.

The present marginality of mineral production may also be reflected in the magnitude of employment in this sector. Labor statistics show this employment to be 12,303 in 1972; 13,100 in 1975; and 12,424 in 1977 for the whole country. The year 2000 projections of the Red Sea Regional Plan do not exceed the 13,000 mark for mineral employment in that region. There exists several identifiable mining communities in Beheira and Abu Tartur in the western desert, and between Safaga - Qusseir on the Red Sea; however, the preceding employment figures (even if we add to them the non-direct but related service jobs mining employment would generate) do not indicate that the scale of mining activity represents enough of an economic base to support new communities of substantial populations in the outlying areas of Egypt.



MAP I-8
MINERAL RESOURCES
QUARRY DEPOSITS UNDER PRESENT EXPLOITATION



MAP I-9
MINERAL RESOURCES
QUARRY DEPOSITS WITH ESTIMATED RESERVES

TABLE I-4
DISTRIBUTION OF MINERAL RESOURCES IN EGYPT (as of 1979)
QUARRIES AND SALINES

ORE	Number of Locations						
	Total	Ancient	Detected, Preliminary Studies	Under Development: Reserves Estimated	Recent Past Exploitation None at Present	Present Exploitation	Not Exploited
Alabaster	7	--	--	--	--	1	6
Alum	3	--	--	--	--	1	2
Amethyst	3	2	--	--	--	--	1
Basalt	7	--	--	--	--	4	3
Breccia	2	1	--	--	--	--	1
Celestite	5	--	--	2	--	--	3
Clay	19	--	--	3	--	2	14
Coal	5	--	2	3	--	--	--
Corundum	2	--	--	--	--	--	2
Dolomite	4	--	--	1	--	2	1
Emerald	3	3	--	--	--	--	--
Granite	2	--	--	--	--	1	1
Gypsum	23	--	--	2	3	4	14
Jasper	3	--	--	--	--	--	3
Limestone	75	--	--	8	--	13	54
Limestone (Crystalline)	9	--	--	--	--	3	6
Marble	6	--	--	--	--	1	5
Natron	1	--	--	--	--	1	--
Nepheline Syenite	5	--	--	1	--	--	4
Sodium Chloride (Salt)	10	--	--	--	--	7	3
Peridot	1	1	--	--	--	--	--
Porphyry	1	1	--	--	--	--	--
Potassium Salts	3	--	--	--	--	--	3
Sandstone	10	--	--	--	--	6	4
Serpentine	1	--	--	--	--	--	1
Turquoise	1	--	--	--	--	1	--
White Sand	8	--	--	--	1	2	5
TOTAL	219	8	2	20	4	48	137

SOURCE: Compiled from Mineral Map of Egypt, 1979.

TABLE I-5
EVOLUTION OF MINING PRODUCTION IN EGYPT - METALLIC AND NON-METALLIC

	ORE	UNIT	1950	1955	1960	1965	1970	1972	1973	1974	1975	1976	1977	1978
METALLIC	Iron	1,000 tons	--	50	239	507	451	427	640	1,302	1,087	1,243	1,308	1,387
	Manganese	1,000 tons	152	206	286	182	4.3	2.4	3.1	4.7	3.6	4.3	3.2	0.15
	Ochre	ton	1,021	548	276	370	--	--	--	81	254	100	55	245
	Chromite	ton	--	840	750	--	--	812	485	295	240	518	993	583
	Gold	ounce	10,724	6,050	1,214	--	--	--	--	--	--	--	--	--
	Black Sands	ton	920	3,865	6,441	3,244	523	--	--	--	--	--	--	--
	Lead	ton	2	478	122	110	--	--	--	--	--	--	--	--
	Zinc	ton	1,319	1,718	165		--	--	--	--	--	--	--	--
NON-METALLIC	Asbestos	ton	260	--	545	3,506	449	441	329	137	--	1,365	--	882
	Baryte	ton	--	61	2,720	12,598	215	1,704	1,890	423	714	233	784	4,691
	Bentonite	ton	--	--	--	--	--	--	--	2,837	3,125	4,089	24,014	4,762
	Diatomite	ton	1,062	494	617	2,510	2,326	1,668	500	350	280	542	198	4,540
	Feldspar	ton	--	--	500	4,643	1,787	3,234	3,444	2,077	855	2,255	6,320	3,284
	Fluorspar	ton	--	--	--	--	267	898	1,509	1,185	2,650	1,557	2,877.2	2,051
	Graphite	ton	--	--	--	--	--	--	--	--	516	140	235	126
	Kaoline	1,000 tons	0.3	3	23	42	22	20.4	32.7	28	35	30	47	56
	Magnesite	ton	--	--	--	--	--	--	600	800	800	640	--	--
	Phosphate	1,000 tons	397	647	570	594	716	564	531	612	518	500	567	644
	Quartz	ton	--	--	--	641	14,668	14,162	14,462	9,698	8,231	8,103	10,420	12,089
	Sulphur	ton	--	615	20,905	--	--	--	--	--	--	--	--	--
	Talc	ton	3,734	6,002	4,891	27,796	6,487	7,727	8,961	5,439	5,182	3,998	3,139	4,654

SOURCE: Compiled from Mineral Map of Egypt, 1979 and Mining Activity in A.R.E., 1977.

TABLE I-6
EVOLUTION OF MINING PRODUCTION IN EGYPT - QUARRIES AND SALINES

	ORE	UNIT	1950	1955	1960	1965	1970	1972	1973	1974	1975	1976	1977	1978
	White Sand	1,000 m^3	--	--	51	39	67	113	120	120	120	120	105	115
	Dolomite	1,000 m^3	--	--	22	55	85	88	90	100	100	110	118	130
GYPSUM	Construction	1,000 tons						107	116	119	146	160	90	99
	Statuary	1,000 tons						--	--	3	3	3	--	--
	Agriculture	1,000 tons	100	187	485	229	447	82	190	221	239	367	92	101
	Crude	1,000 tons						239	219	216	213	213	540	593
	Marble & Alabaster	1,000 m^3	0.3	--	4.4	26	9	7	8	8	8	8	21	24
	Granite	1,000 m^3	--	--	42	31	0.3	0.5	2	3	3	3	3	3
	Limestone	1,000 m^3	1,600	--	2,821	3,000	5,565	4,939	5,350	5,420	3,620	5,525	5,152	5,566
	Sandstone	1,000 m^3	--	--	80	221	81	93	102	110	110	120	101	111
BASALT	Ballast	1,000 m^3						62	47	41	48	48	90	99
	Crushed	1,000 m^3						355	342	283	263	263	203	223
	Dimension	1,000 pcs.	165 (000)m^3	--	320 (000)m^3	253 (000)m^3	361 (000)m^3	6,638	5,506	3,680	2,963	2,963	1,575	1,732
	Borders	1,000 mtrs.						62	52	25	32	32	35	38
	Gravels	1,000 m^3	337	--	905	2,000	1,600	1,090	1,100	1,300	1,300	1,500	1,900	2,090
	Sands	100 m^3	337	--	1,245	2,000	2,800	2,764	2,955	3,301	3,011	3,500	6,360	6,996
	Clays	1,000 m^3	235	--	455	447	975	896	900	950	950	1,000	986	1,085
	Pumice	1,000 m^3	--	--	--	--	--	0.3	0.3	0.3	0.3	0.3	N.A	N.A
SALINES	Common Salt	1,000 tons	539	402	522	494	454	382.8	451	514	666	606	741	755
	Nitrates	1,000 tons	0.5	2.6	1.5	4	3.2	3	4	4	4	4	4	4
	Sodium Sulph.	1,000 tons	--	--	--	1.2	3	2	2	16	4	5	2	--

SOURCE: Compiled from Mineral Map of Egypt, 1979 and Mining Activity in the A.R.E, 1977.

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TABLE I-7

COMPARISONS OF THE MINERAL PRODUCTION VALUE TO GROSS DOMESTIC PRODUCT AND THE VALUE OF MINERAL PRODUCTION EXPORTS TO THE VALUE OF NATIONAL EXPORTS

	Value of Mining Production (in 000 L.E.)				
	1972	1973	1974	1975	1976
Metallic & Non-Metallic	5,208.0	6,486.0	12,685.0	12,787.0	12,903.0
Quarries	6,062.0	6,617.0	6,674.0	7,259.0	7,259.0
Salines	1,395.0	1,599.0	1,856.0	2,318.0	2,240.0
Total Value of Production (1)	12,665.0	14,202.0	21,215.0	22,364.0	23,210.0
Gross Domestic Product (in Million L.E.) (2)	2,956.5	3,216.9	4,110.8	4,779	5,787
% Value of Mineral Production to Gross Domestic Product	0.43%	0.44%	0.52%	0.47%	0.40%
	Value of Mining Exports (in 000 L.E.)				
	1972	1973	1974	1975	1976
Metallic & Non-Metallic	1,174.0	1,037.0	3,339.0	4,390.0	3,379.0
Quarries	7.9	10.3	395.6	60.1	447.1
Salines	53.5	54.4	25.6	113.4	77.4
Total Value of Exports (1)	1,235.4	1,091.7	3,760.2	4,563.5	3,904.1
Value of National Exports (in Million L.E.) (3)	N.A.	N.A.	710	765	923
% Value of Mineral Exports to Value of Mineral Products	9.75%	7.69%	17.7%	20.4%	16.8%
% of Value of Mineral Exports to Value of National Exports	--	--	0.53%	0.60%	0.42%

SOURCE: (1) Mining Activity in the A.R.E., 1977.
(2) A.R.E. National Accounts, Ministry of Planing, 1979.
(3) World Bank; December, 1980.

D. Tourism Assets

Since the 17th century Egypt has attracted world attention to its archeological wealth of ancient cultures. The market evaluation of the National Tourism Plan shows that in 1976 just less than 1 million tourists visited the business, cultural and recreation centers of Egypt — about 50 percent coming from Arab countries, 33 percent from the industrial nations of Europe, America and the Far East, and the balance from the rest of the world.

Table I-8 shows the forecast of expected tourism demand up to 1990, when the volume of visitors would pass the 2.5 million mark.

Table I-9 and Map I-10 present a comprehensive summary of the tourism assets in Egypt, combining the approaches of the National Plan for Tourism and the Regional Tourism Plan for the Northwest Coast. The country was divided into nine regions, and the type and location of major assets were indicated for each of the regions. Due to the importance of the Nile Valley in Upper Egypt, this region was subdivided into five sub-regions.

Table I-10 helps to clarify the attraction of tourism regions to different types of visitors, that the cultural heritage of the Nile is of prime interest to European and American visitors; that Islamic Cairo and westernized Alexandria are of

TABLE I-8

ESTIMATION OF TOURIST RECEIPTS IN EGYPT 1976 - 1990

(In million L.E.)

	1976			1980		
	Tourist Arrivals in 000	Average Receipt Per Arrival in L.E.	Total Receipts in L.E. Mio.	Tourist Arrivals in 000	Average Receipt Per Arrival in L.E.	Total Arrivals in L.E. Mio.
Western Travellers	308	250	77	557	275	153
Arab Tourists	535	140	74	783	155	121
Other Tourists	141	180	25	224	200	45
Total	984	179	176	1,564	204	319
	1985			**1990**		
Western Travellers	792	300	238	964	330	318
Arab Tourists	1,000	170	170	1,159	185	214
Other Tourists	300	220	66	355	240	85
Total	2,092	227	474	2,478	249	617

SOURCE: National Plan for Tourism, A.R.E., Volume 0, Summary. 1978.

TABLE I-9a
SUMMARY OF TOURISM ASSETS IN EGYPT & PROPOSED DEVELOPMENT STRATEGIES

REGION/SUB-REGION	NATURAL ASSETS	HISTORIC/RELIGIOUS ASSETS	CONTEMPORARY/CULTURAL ASSETS	PROPOSED DEVELOPMENT STRATEGY
NILE VALLEY/MINIA REGION	Beauty of landscape, primitive naturalness of village life, quaint friendliness of small provincial towns, the dramatic delineation of the Nile Valley by the East and West desert plateaus.	Deir (Monastery) of Gabal El Teir, East bank, north of Minia, Beni Hassan Necropolis, East bank across Abu Qorqas. Hermopolis and Tuna El Gabal west of Mallawi. Tell El-Amarna, on East bank across Deir Mowas. Necropolis of Mir & Deir El Moharraq, west of El Qusiya, El Zawya tombs & Deir Doronka, south of Assiut.		Long term development into independent destination of culture tourism oriented to "Repeat Visitors" for purposes of in-depth study of ancient sites and rural life. Ensemble Protection of the culture landscape, reconstruction of pharaonic cultural sites to maintain original environment. Anchor the development in Tell El Amarna & History of Akhnaton. Control invasion of urban sprawl. Historic Preservation of the Arab character of small towns especially Minia. Improve Transport Accessibility via Air & Nile Transport.
NILE VALLEY/ABYDOS REGION	Beauty of landscape, primitive naturalness of village life, quaint friendliness of small provincial towns, the dramatic delineation of the Nile Valley by the East and West plateaus.	Deir El-Abiad & Deir El-Ahmar west of Sohag. Abydos (seti I and Ramses II Temples) west of Baliana. Dandara (Hathor Temple) west bank across Qena.	Hand weaving & textile crafts in Ekhmim, on east bank across Sohag.	Development into tourist are linked to "Luxor." Has potential to become independent destination, oriented to relieve pressure on Luxor. Excellent introduction to Ancient Egyptian Culture. Needs development of site & tourist accomodation between Minia & Luxor. Application of strict regulation fro the protection and preservation of cultural landscape.
NILE VALLEY/LUXOR REGION	Dramatic delineation of arable land in the Nile Valley by East and West desert plateaus. Indigenous agricultural landscape.	Karnak & Luxor temples in Luxor. West bank: Thebes, Valley of the Kings, Valley of Queens, Tombs of the Nobles, Complex of Deir El Bahari, Colosses of _____, Ramseum, Medinet Habou.	Hand weaving & textile crafts in Garagos, North of Luxor. New Gourna village on west bank across Luxor.	As one of the main cultural centers for Man's Civilization & Art, Luxor should be treated at international standards of service, historic preservation, and protection. Moderate expansion and constant improvement of super and infrastructures. Application of controls on tourist flows and activities to meet Monument's handling capacities. Urban design approach to maintain and foster image of Luxor around cultural heritage of Karnak and Luxor temples. Develop International Airport for direct access to the area.
NILE VALLEY/IDFU REGION	Delightful landscape of narrow indigenous agriculture on both banks of Nile. Dramatic presence of the plateau's rocky walls delineating narrow valley of arable land.	Temple of Khnoum at Esna. Temple of Horus at Edfu. Temple of Sobek and Horeis at Kom Ombo.	El Nasr City, east of Komombo, site of Nubian population relocated after high dam was built; indigenous Nubian culture and art.	Similar to the Region of Abydos. Follow development of Abydos by 3-5 years. Should not become independent destination.
RED SEA	Beautiful sandy beaches with moderate but attractive desert and mountains in the background. Superlative underwater landscapes of coral and diverse fish population. Unique opportunities for all water related recreational activities.	Monasteries of St. Paul and St. Anthony close to Ras Zaafarana/Ras Zeituna.		Development oriented to tourism seeking all kinds of water-related activities. All areas along the coast are not of equal natural quality or tourist potential; most important and best one: Gemsa Bay at Ras Zeituna, Ghardaka (Hurgada), Qoseir-Marsa Alam, Ras Benas and Marsa Abu Madd in the Berenice area. Size of demand and remoteness does not justify large-scale developments with their extensive infrastructure; rather, small scall "club"-oriented development for those seeking adventure and water/desert-oriented tourism. Improve transport accessibility.
ALEXANDRIA	Urban area with more than 45 kms of beach areas (Abu-Kir to Agami), and water front development along a 20 km "Corniche" on the Mediterranean.	Important intellectual center during Greco-Roman era, with substantial archeological sites.	Second capital of the country and its main port. Strongest influence of European culture. Cosmopolitan center of industry, business and education. Most preferred resort for local tourism and sea-side vacation. Several important museums related to Greco-Roman Period.	City development oriented to become a center for science and training, research and development, highly developed technology and services; as a location for conferences, conventions and an attractive destination for summer vacationers from Egypt and other Arab countries. Needs substantial regulations to improve the physical environment of the city. Maintain and preserve historic sites, improve the urban design of the "Corniche" area.

(Continued)

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TABLE I-9b

SUMMARY OF TOURISM ASSETS IN EGYPT & PROPOSED DEVELOPMENT STRATEGIES

REGION/SUB-REGION	NATURAL ASSETS	HISTORIC/RELIGIOUS ASSETS	CONTEMPORARY/CULTURAL ASSETS	PROPOSED DEVELOPMENT STRATEGY
MEDITERRANEAN COAST REGION (West of Alexandria -- to Libeyan Border)	Coastal Strip with some very beautiful beaches, in particular, at Ras El Hekma and Marsa Mitruh.		El Allamein, cemeteries of 2nd World War casualties of desert battles war museum.	The 500 km. coastal strip is of very limited attraction for international tourism due to poor accessibility, lack of local cultural interest & strong prevailing competition in the mediterranean basin. Strategy should be based on the expansion of vacation regions for national tourism developed at the intermediate level. Development to be environmentally and aesthetically sensitive, avoiding present mistakes of location and design.
OASIS REGION (Kharga, Dakahlia, Farafra, Beheira, Siwa)	"Island in a Desert of Sand". Impressive scenery of rock formation, sand dunes, olive and palm tree groves.	Very few remains of Pharaonic & Greco-Roman culture. Best preserved at Kharga in form of temples and Necropolic.	Local crafts in Kharga, and Siwa. Most typical indigenous culture and village development at Farafra.	Development should concentrate on high quality "adventure trips" involving small groups. Preservation of local folklore and retardation of the inevitable advance of modernization. The restoration as much as possible of all Pharaonic and Greco-Roman archeological sites.
NILE VALLEY/ASWAN REGION	Unique winter climate; tranquil Nile landscape of cataract crogs. Elephantine Islands and gliding silhouette of Nile banks within golden yellow desert hills. Impressive evening atmosphere.	Temples of Philae and Kalabsha Aga Khan Mausoleum and unfinished obelisk. Deir of St. Simeon. (Departure point for trips to Abu Simbel)	Old Aswan Dam and the New High Dam. Botanical Gardens. Nubian Habitat and manifestations of Nubian culture.	Tourism season limited to a six month period during the fall. Development toward a Cure Resort, Sports and Relaxation after Adventure Vacation. Need strict control to correct the deteriorating physical image of the city, by improving urban architecture, prohibiting further industrial settlement and misplaced settlement of the rural landscape. Improve access to and opportunities around Lake Nasser. Preservation and cultivation of Nubian culture as one of principal assets. Upgrade accomodations to international standards. Constant improvement of technical and social infrastructures. **WARNING: "Aswan has already come very close to reaching a point of NO RETURN!"**
NILE VALLEY/LAKE NASSER and ABU SIMBEL	Potential for water oriented sports. Present banks of Lake Nasser.	Abu Sinbel Temples		Long-term development toward independent region. Short and Medium term improvement of air and water access to Aswan, of local hotel accomodations and of water oriented sports.
CAIRO & ENVIRONS NORTH TO DELTA BARRAGE/SOUTHWEST TO FAYOUM/ SOUTH TO BENI SUEF	CAIRO/GIZA: Metropolis of the Nile, offering a wide range of experiences from desert and mountainous bluffs east and west to verdoyant agricultural land north and south. FAYOUM/BENI SUEF: Primitive naturalness of village life. Beauty of landscape and friendliness of small provincial towns. Unique scenery at Lake Qarun and the east bank of the Nile.	CAIRO/GIZA: Pyramids of Abu Rawas, Pyramids of Giza and Sphinx, Pyramid of Abu Sir and Dahshur, Pyramids and Necropolis of Saqnara. Old city of Memphis & Temple of the Sun. Vestiges of Heliopolis. City itself is a cumulative historical record of Christian and Islamic culture, of East/West ideologies, of struggles for political power, all manifested in the physical presense of old quarters, churches, mosques, aquaducts, etc. FAYOUM/BENI SUEF: Pyramids of Lisseht, Maidum, Hawwara and Lahoun. Archeological sites of Kom Ouchim and Qasr Qarun. Major center of Greco Roman and Coptic archeology.	Center of culture, political activity, business and government for the country and Arab world. Wealth of cultural activities, art collections in museums, Coptic churches and mosques. Shopping and night life at international standards, business opportunities and political relations, training and higher education. Old city center and the village of Kerdasa and Harrania are centers of indigenous arts & crafts. FAYOUM/BENI SUEF: Auberge du Lac.	Tourism has a minor role to play in the overall development of Cairo, and in finding solutions to its problems of population increase and physical deterioration. Strategy is to relieve Cairo from pressure by decentralizing its art treasures to regional centers and diverting streams of tourists to alternative entry points and destinations such as Luxor and Aswan. Given the diversity and poor condition of attractions offered, it is urgently necessary that the main attraction areas be renovated, protected, and better preserved. Cairo is the most important destination for visitors from home and abroad, as well as the main source area for domestic tourism and local recreation. Because opportunities for the latter are scarcely available, the Nile with its banks and islands, the southwestern city periphery and pyramid plateau, the Delta barrage area, Fayoum, and Lake Qarun are ideally suited for such local recreation developments. Regarding tourism, efforts should be addressed toward environmental protection, renovation and maintenance of all important cultural sites, of providing accessibility and transportation means connecting such sites and which are geared to tourists, the improvement of telecommunications, sewage removal and garbage disposal, the provision of well managed and, above all, clean three (3) star hotels. Packaging and presentation of historic culture as "living museums". Inclusion of Fayoum/Beni Suef area as a round trip Extention of Cairo Experience through "Highway of the Pyramids" passing through all the archeological and pyramid sites, and ending at Lake Qarun.

(Continued)

TABLE I-9c

SUMMARY OF TOURISM ASSETS IN EGYPT & PROPOSED DEVELOPMENT STRATEGIES

REGION/SUB-REGION	NATURAL ASSETS	HISTORIC/RELIGIOUS ASSETS	CONTEMPORARY/CULTURAL ASSETS	PROPOSED DEVELOPMENT STRATEGY
DELTA REGION (Including Wadi El Natroun)	Mediterranean coastal strip from Abukir to Lake Manzala with few beaches between Borollos and the Damietta Delta branch. Important agricultural and industrial areas in the Delta hinterland.	Pharaonic archeological sites in San El Hagar (Tanmis) near Lake Manzala, Bubatis near Zagazig, San El Hagar (Sais) on the Rashid Delta branch. Mosques in Tanta, Mansoura, and Damietta. Vestiges of the Crusades wars in Mansoura.		Limited tourist potential. Need substantial restoration of historic sites. Should be developed as a sight-seeing destination for international tourists in the course of day excursion trips or round-trips; and the beaches as holiday areas for middle-class summer vacationers.
CANAL ZONE	Limited beaches around Suez. Bitter lakes around the Canal and on the Mediterranean east and west of Port Said.		Expanding area of industrial development and transportation and business.	At present of limited touristic interest. With appropriate industrial development, infra- and super-structure expansion, could develop tourism limited to business and sight-seeing traffic. Ismailia has best potential for providing domestic local recreation especially around shores of the Bitter Lakes.
SINAI	Fascination of the Desert, sand dunes, scorching heat, boiling hot springs at Oyoun Missa, unique mountain formation, contrasted with beautiful shores along the Mediterranean and the Gulf of Suez and Agaba. Two Peaks tower of the Peninsula: Gebel Missa (Mount Sinai) (+2,285 m) and Gebel Katherina (+2,642 m).	Monastery of St. Catherine.	Beaches at Arish; beaches fishing and aqua sports at Dahab. Bedouin settlements with indigenous folklore and basic crafts.	Improve accomodations and accessibility to the area of the Monastery of St. Catherine. Remote adventure trips featuring mountain climbing. Develop northern shore around Arish and east of Lake Bardawil for domestic vacation resorts. Develop area around Oyoun Moussa and Dahab for tourism at international standards.

SOURCE: National Plan for Tourism, A.R.E., Volume O, Summary. 1978.

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TABLE I-10
ATTRACTION OF TOURISM REGIONS IN EGYPT 1/

International Clientele (Incl. Residents) from					Domestic Clientele from	
Europe and America		Arab Countries			Arab Rep. of Egypt and Abroad 2/	
Nile Valley	xxxxx	Cairo	xxxxx		Alexandria	xxxxx
Cairo	xxxxx	Alexandria	xxxxx		Medit. Coast	xxxx
Red Sea	xxx	Medit. Coast	xxx		Cairo (recreation areas)	xxxx
Alexandria	xx	Nile Valley (esp. Aswan)	xx		Delta (coast)	xxx
Medit. Coast	xx	Canal Zone	xx		Nile Valley	xxx
Oasis	xx	Delta	x		Canal Zone	xx
Delta	x	Sinai	x		Red Sea	xx
Canal Zone	x	Oasis	x		Sinai	x
Sinai	x	Red Sea	x		Oasis	x

Ranking: xxxxx = Very Attractive

x = Not Attractive

1/ Assessment and ranking are made in consideration of three aspects: natural attractivity, quality and variety of existing offer, future market and expansion potential. The ranking here is based on the theoretical question to the three main guest groups: "In what order would you, as a vacationer (for Egyptians also as a local tripper), rank the attractivity of the available holiday regions?" The solution and demarcation of the nine (9) regions are illustrated on the accompanying map.

2/ Includes Egyptians who are working abroad or who have previously emigrated.

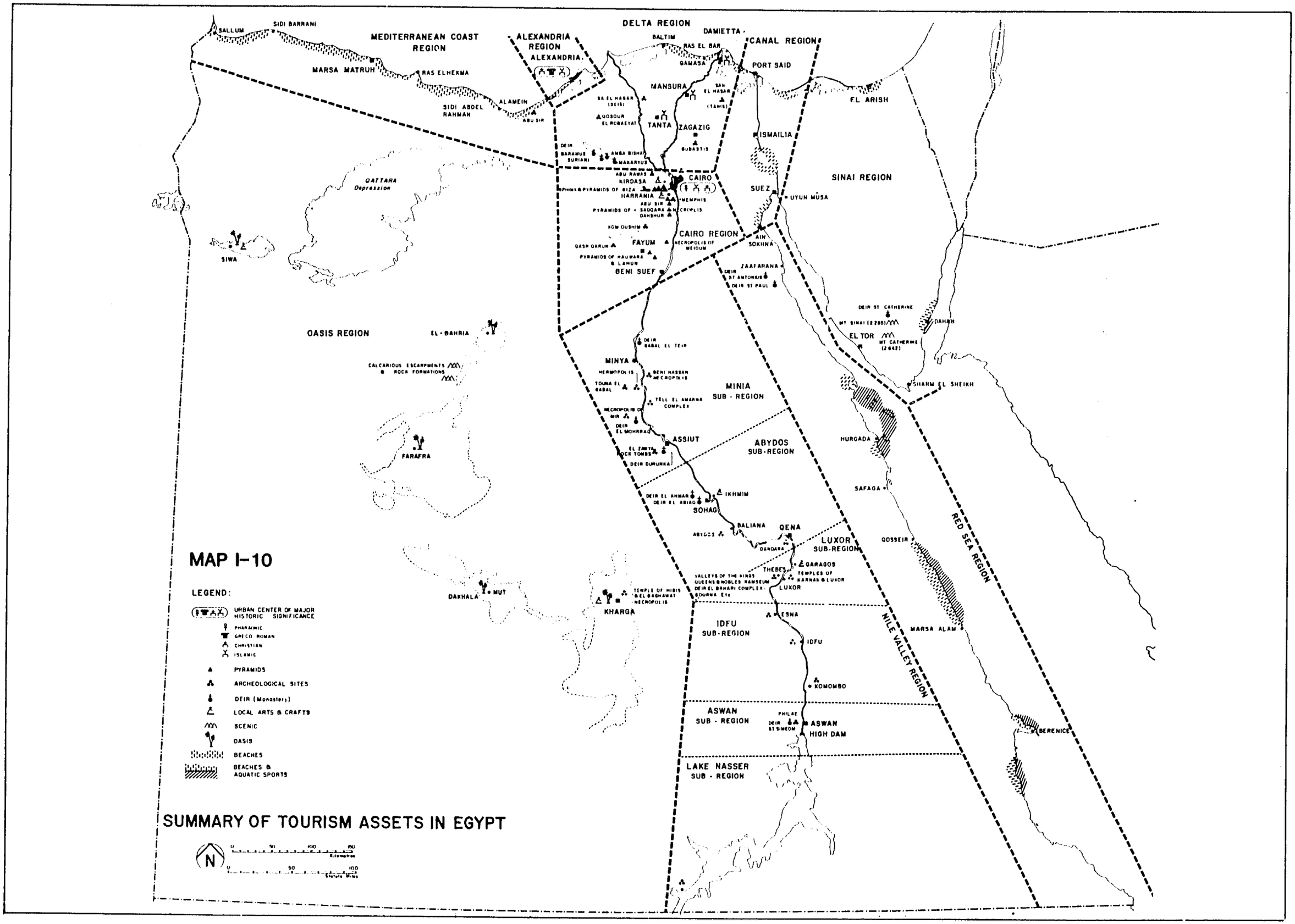
SOURCE: National Plan for Tourism, A.R.E., Volume O, Executive Summary, 1978.

TABLE I-11
MARKET DEVELOPMENT APPROACH

Tourism Form	Market Segment	International Tourists from: Europe/America Incl. Residents	International Tourists from: Arab Countries	National Vacationers and Local Recreation Trips
Beach Tourism		o	*	**
			Above all on the Mediterranean coast with center in Alexandria. Short Term: Arab upper and upper-middle strata mainly in Alexandria with Mansoura and Agami, middle income groups (chiefly domestic) in Delta area, in the Canal Zone or on the West Coast (i.e., Ras al Barr, Gamssa, Rashid, Marsa Matruh). Medium & Long Term: Expansion of Ras el Hemka for upper social groups and expansion of all other existing Mediterranean destinations.	
Recreation Tourism		*	*	*
		Recreation and relaxation vacations, especially in Aswan, but also as part offer in other holiday locations (e.g., in Hurgada, Ras El Hemka, Plateau des Pyramides). Short Term: Diversification of individual hotels on the health market (e.g., Obero, in Aswan). Medium and Long Term: Increased expansion of fitness and health program in Aswan, Alexandria, etc.		
Adventure Tourism		*	o	o
		New product above all for Siwa and possibly oases in New Valley -- low volume. Short and Medium Term: Individual trippers and small groups. Long Term: Possible decline due to increasing "modernization" of the oases.		
Other Sightseeing Tourism		*	*	*
		Day excursion trips mainly departing from Cairo or Alexandria to various destinations such as, e.g., Canal Zone, El Alamein, Delta, Fayoum, Sinai -- limited demand.		
Local Recreation		o	o	**
				Above all population of Cairo -- Growing Market! Short Term: Limited volume, above all upper stratum, in inner and peripheral urban clubs. Medium & Long Term: Expansion of local recreation centers in and around Cairo.
Culture Tourism		**	o	o
		Above all in Cairo, Luxor and Aswan, incl. Abu Simbel. Most important existing and future market. Short Term: Only limited growth due to capacity limit. Medium & Long Term: Expansion of existing and development of new destinations, above all in Nile Valley (Minia, Abydos, Edfu).		
Business travel, incl. convention travel (conferences, meetings, special events, sports & other festivals, religious meetings, incentive tours, etc.)		*	**	*
		Above all in Cairo, even growth. Short Term: Primarily limited to Cairo, since transport connections, hotel accomodations, conference facilities, etc. are inadequate in other centers. Medium and Long Term: Relief of Cairo through expansion of Alexandria and additional business centers (e.g., Port Said, Suez).		
Subaqua Tourism		**	o	o
		New product for Red Sea in area for Hurgada. Short Term: Pilot project. Medium and Long Term: Development to fully set-up subaqua destination.		

NOTE: ** = Very Important * = Important o = Not important

SOURCE: National Plan for Tourism, A.R.E., Volume O, Summary, 1978.


MAP I-10
SUMMARY OF TOURISM ASSETS IN EGYPT
LEGEND:
URBAN CENTER OF MAJOR HISTORIC SIGNIFICANCE
PHARAONIC
GRECO ROMAN
CHRISTIAN
ISLAMIC
PYRAMIDS
ARCHEOLOGICAL SITES
DEIR (Monasteries)
LOCAL ARTS & CRAFTS
SCENIC
OASIS
BEACHES
BEACHES & AQUATIC SPORTS
MEDITERRANEAN COAST REGION
ALEXANDRIA REGION
DELTA REGION
CANAL REGION
SINAI REGION
CAIRO REGION
OASIS REGION
MINIA SUB-REGION
ABYDOS SUB-REGION
LUXOR SUB-REGION
IDFU SUB-REGION
ASWAN SUB-REGION
LAKE NASSER SUB-REGION
NILE VALLEY REGION
RED SEA REGION
SALLUM
SIDI BARRANI
MARSA MATRUH
RAS ELHEKMA
SIDI ABDEL RAHMAN
ALAMEIN
ABU SIR
ALEXANDRIA
BALTIM
DAMIETTA
RAS EL BAR
GAMASA
PORT SAID
MANSURA
SA EL HAGAR (SAIS)
SAN EL HAGAR (TANIS)
QODSOUR EL ROBAEYAT
TANTA
ZAGAZIG
BUBASTIS
ISMAILIA
EL ARISH
DEIR BARAMUS
SURIANI
AMBA BISHAI
MAKARYUS
ABU RAWAS
KIRDASA
CAIRO
SPHINX & PYRAMIDS OF GIZA
HARRANIA
MEMPHIS
ABU SIR
PYRAMIDS OF SAUQARA
NECROPOLIS
DAHSHUR
SUEZ
UYUN MUSA
KOM DUSHIM
QASR QARUN
FAYUM
NECROPOLIS OF MEIDUM
PYRAMIDS OF HAUWARA & LAHUN
BENI SUEF
AIN SOKHNA
ZAAFARANA
DEIR ST ANTONIUS
DEIR ST PAUL
DEIR ST CATHERINE
MT SINAI (2285)
EL TOR
MT CATHERINE (2642)
DAHAB
SHARM EL SHEIKH
SIWA
QATTARA Depression
EL-BAHRIA
CALCARIOUS ESCARPMENTS & ROCK FORMATIONS
DEIR GABAL EL TEIR
MINYA
HERMOPOLIS
BENI HASSAN NECROPOLIS
TOUNA EL GABAL
TELL EL AMARNA COMPLEX
NECROPOLIS OF MIR
DEIR EL MOHRRAQ
ASSIUT
EL ZARIA ROCK TOMBS
DEIR DURUNKA
HURGADA
FARAFRA
SAFAGA
DEIR EL ANBAR
DEIR EL ABIAD
IKHMIM
SOHAG
BALIANA
QENA
ABYDOS
DANDARA
QOSSEIR
RED SEA REGION
GARAGOS
THEBES
TEMPLES OF KARNAK & LUXOR
VALLEYS OF THE KINGS QUEENS & NOBLES RAMSEUM DEIR EL BAHARI COMPLEX QOURNA ETC
LUXOR
TEMPLE OF HIBIS & EL BAGHAWAT NECROPOLIS
DAKHALA
MUT
KHARGA
ESNA
IDFU
MARSA ALAM
NILE VALLEY REGION
KOMOMBO
PHILAE
DEIR ST SIMEON
ASWAN HIGH DAM
BERENICE
N
Kilometres
Statute Miles

prime importance to visitors from Arab countries; and that the recreation areas of Alexandria and the Mediterranean Coast are of prime interest to Egyptians.

However, the development of tourism's full potential in Egypt is not without its difficulties. One is the shortage of accommodations which meet the expectation of visitors used to international high standards.

The National Tourism Plan advances the concept that to meet international standards tourism in Egypt should be developed and marketed under the principle of "Quality Product for Quality Markets". (See Table I-11 for the market development approach recommended by the National Plan for Tourism.) This principle is based on the arguments that special interest in ancient Egyptian culture, along with increasing travel costs to Egypt would generate a clientele traveling for entertainment, sub-aquatic sports, business and culture — generally an upper income clientele. Their small number would be more suitable for the preservation of ancient monuments which are not able to stand the wear and tear of mass markets. Also, given the existing and short run shortages in tourism services in Egypt, it would be simpler and would offer a higher return on investment to create smaller capacities of high quality. Such an approach would suffer least from the competition of currently available, and mass market-oriented, facilities in Spain, Italy and Greece.

However, it should be pointed out that the development, maintenance and expansion of a "Quality" market needs immediate and considerable improvement in the existing diversity of tourism attractions as well as in the organization and administration of the tourism trade. Table I-12, therefore, summarizes a probable development of lodging capacity in the 5 and 4 star categories oriented to the high income clientele of tourists.

Table I-13 shows estimated employment and its expected income form tourism; Table I-14 shows the contribution of Tourism Trade to GDP. Although the figures are government estimates

TABLE I-12

SUMMARY --
PROBABLE DEVELOPMENT IN LODGING CAPACITY
IN THE 4- AND 5-STAR CATEGORIES
(ACCORDING TO REGIONS -- IN ROOMS)

	Total 1976	Growth 1976-80	Total 1980	Growth 1981-85	Total 1985	Growth 1986-90	Total 1990
Nile Valley							
Luxor	650	260	910	990	1,900	600	2,500
Aswan (with Lake Nasser)	600	200	800	300	1,100	300	1,400
Others (Minya, Abydos, Idfu)	--	--	--	300	300	550	850
Nile Cruisers	350	300	650	600	1,250	600	1,850
Cairo	2,650	1,200	3,850	5,550	9,400	1,200	10,600
Red Sea	--	100	100	300	400	800	1,200
Alexandria	550	120	670	300	970	300	1,270
Mediterranean Sea	--	--	--	300	300	1,200	1,500
Oasis	--	40	40	40	80	--	80
Canal Zone	--	80	80	500	580	500	1,080
Prob. Room Capacity	4,800	2,300	7,100	9,180	16,280	6,050	22,330
Requisite Room Capacity	4,800	3,750	8,550	7,000	15,550	5,550	21,100
Capacity GAP (-) or surplus (+)	+ 0 + 0		-1,450		+ 730		+1,230

NOTE: Table computed based on the following assumptions;

1) 90% of trippers from western countries and 25% (up to 1980) and 30% (after 1980) of the Arab and other trippers will stay in 4- and 5-star hotels.

2) Average length of stay of 6 days up to 1980, rising to 7 days by 1990.

3) Room occupancy: 85% (1980), 80% (1985), 75% (1990). Persons per room: 1.7 persons up to 1980, reduced to approximately 1.6 persons by 1990.

SOURCE: Adapted from National Plan for Tourism, A.R.E., Volume O, Executive Summary, 1978.

and could change over time in response to the realities of the situation, we should note that as tourism receipts increase from 1976 to 1990, their contribution to GDP decreases from 3.0 percent in 1976 to 2.6 percent in 1990.

The development of tourism at a national level is not an independent endeavor. It relies heavily on many other sectoral developments. It is necessary to improve the transportation and telecommunications network, to upgrade and preserve environmental quality, and to improve the organization and delivery of tourists information. Besides the monetary costs of such actions, other costs include the restructuring of the administrative systems which may well be

TABLE I-13
ESTIMATION OF EMPLOYMENT AND INCOME
ON THE TOURISM SECTOR (1976-1990)

	1976	1980	1985	1990
Room Capacity	4,800	7,100	16,300	22,300
Hotel Employees	8,640	12,070	26,080	33,450
Induced Employment	10,370	14,480	31,300	40,140
Total Employment	19,010	26,550	57,380	75,590
Average Annual Income (L.E.)	1,080	1,310	1,680	2,140
Total Annual Income (L.E.)	20,530,800	34,780,500	96,398,400	157,482,600

Assumptions underlying estimates:

1) Estimates based on the 4- and 5-star hotel category.

2) 1.8 employees per room is assumed for year 1976; based on empirical values in Egypt and other countries. This rate drops as qualifications increase (1980: 1.7; 1985: 1.6; 1990: 1.5).

3) 1.2 persons per hotel employee is assumed for those employed indirectly in tourism (supply operations, for hotels, guides, travel agents, etc.). This is based on surveys of countries comparable to Egypt, e.g. Morocco.

4) Average incomes in hotel trade calculated on available data from hotels of Public Sector and International hotels in Egypt (1,080 L.E./year). Income is increased by 5% per annum, based on increased productivity and not inflation.

5) Same assumptions apply for Induced Employment.

6) Costs & Prices are in 1976 L.E., not adjusted for inflation.

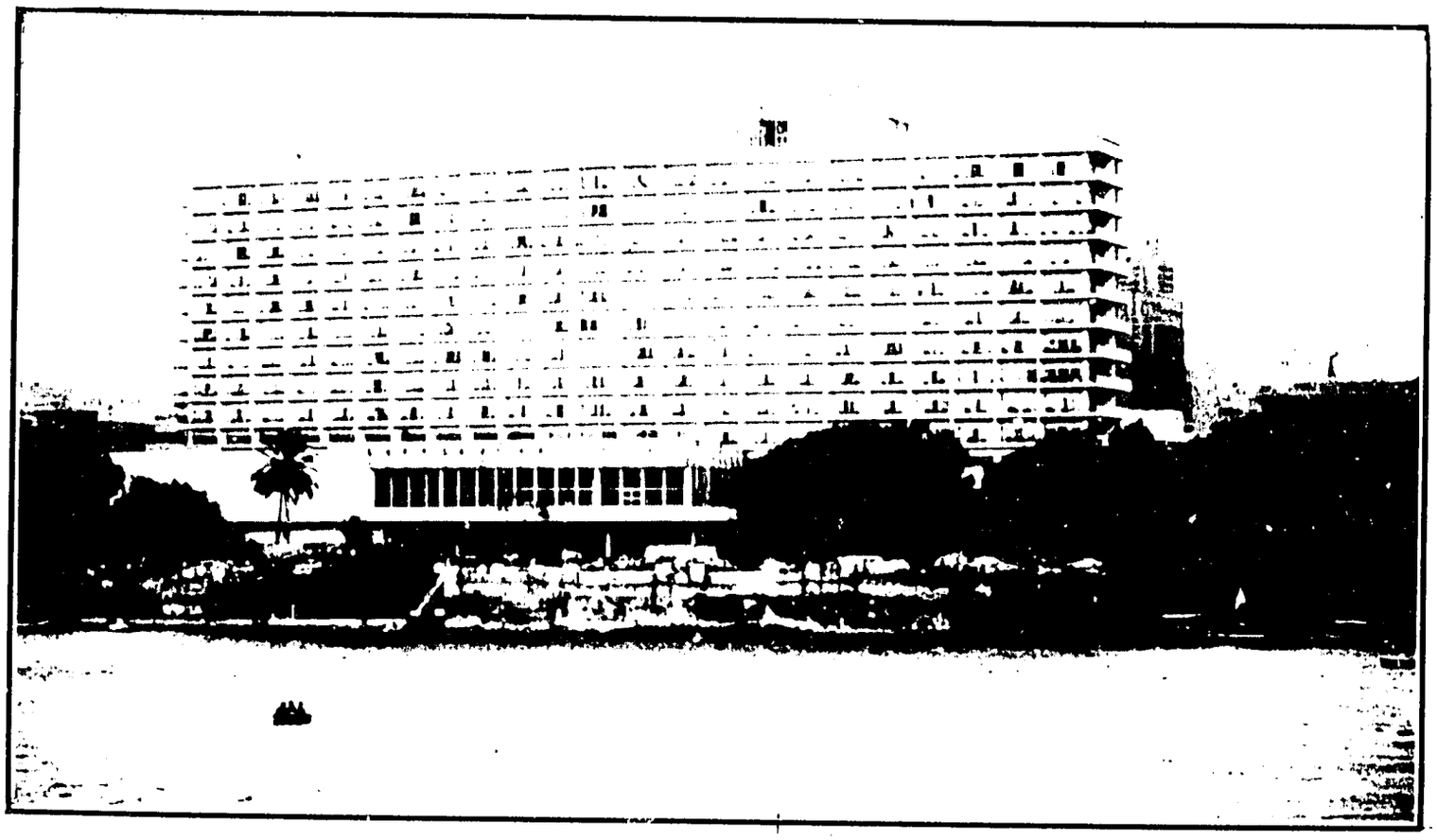
SOURCE: Compiled from National Plan for Tourism, Volume O, Summary, 1978.

TABLE I-14
COMPARISON OF TOURISM CONTRIBUTION TO GROSS DOMESTIC PRODUCT

	1976	1980	1985	1990
Tourist Receipts[1/] (In Million L.E.)	176	319	487	617
Gross Domestic Product (In Million L.E.)	5,787[2/]	11,727[3/]	17,487[4/]	23,425[4/]
% Tourist Receipts to Gross Domestic Product	3.0	2.8	2.7	2.6

SOURCES: National Plan for Tourism,[1/] A.R.E., 1978.
CAPMAS,[2/] 1976 prices.
A.R.E. Government Estimate,[3/] 1979 prices.
NUPS Projections,[4/] 1979 prices.

TOURISM RECEIPTS AS A PERCENTAGE OF GDP WILL DECLINE



required to implement such actions. Since such improvements would benefit many other areas of national development, a comprehensive costing of tourism development is very difficult and has to be limited to the most direct costs related to accommodation, catering and personnel training; Table I-15 shows the direct cost, in million L.E., for the proposed National Tourism Plan prepared in 1978. The authors of the plan emphsize that:

> "...planning projects in tourism must be coordinated with those of other sectors. Only in this way will it be possible to avoid misinvestments. Tourism can come to represent an important pillar in the economic and social life of Egypt, whereby its full advantages can only be developed if it is integrated into overall national planning."

TABLE I-15
COST ESTIMATES FOR TOURISM DEVELOPMENT
(In Million L.E.)
(Accomodation, Catering & Personnel Training)

		1977-80	1981-85	1986-90	Total
Investment Costs for Accomodation Capacity[1/]	Cairo	27.6	127.5	27.6	182.7
	Nile Valley	10.6	36.5	33.3	80.4
	Nile Steamers	6.9	13.8	13.8	34.5
	Red Sea	2.3	6.9	18.4	27.6
	Alexandria	2.8	6.9	6.9	16.6
	Mediterranean	--	6.9	27.6	34.5
	Oases	0.9	0.9	--	1.8
	Canal Zone	1.8	11.5	11.5	24.8
	Sub-Total	52.9	210.9	139.1	402.9
Operationally Required Infrastructure	Nile Streamers	1.5	1.5	1.0	4.0
	Red Sea	0.3	1.8	2.6	4.7
	Mediterranean	--	1.2	4.2	5.4
	Sub-Total	1.8	4.5	7.8	14.1
Costs for Major Restaurants (Outside the Hotels)	Number	7	15	8	30
	Cost Sub-Total	3.8	8.1	4.3	16.2
Training of Hotel Personnel	New Training	0.8	2.9	2.4	6.1
	Further Training	0.3	0.3	0.7	1.3
	Hotel Training Schools	1.4	1.4	1.4	4.2
	Sub-Total	2.5	4.6	4.5	11.6
Advertising Abroad	Cost Sub-Total	2.8	7.9	10.0	20.7
TOTAL COSTS		63.8	236.0	165.7	465.5

1/ Present study does not include investment costs for Sinai.

SOURCE: Compiled from National Plan for Tourism, Arab Republic of Egypt, Executive Summary, Volume 0, April, 1978.

E. Water Resources

1. Introduction

This section represents a synthesis of many books, reports and papers regarding water resources throughout Egypt. The effort was undertaken to focus the general water resources conditions presently understood to prevail in the country and, subsequently, relate those conditions to potential urban development to the year 2000.

It should be noted that no new data or information was developed for the preparation of this country-wide report.

Because of the large and varied area of Egypt, the country was divided into ten water resources regions based upon hydrogeological features, similar geographic conditions, or political boundaries. Each region was then divided into zones and in some cases sub-zones on the basis of similar intra-region characteristics such as geologic features, geographic location and/or topographic expression. A summary table is then provided for each region which lists salient information regarding its water resources.

Table I-16 presents, in summary, the water resources available or which possibly will become available to support ranges of population to year 2000. This analysis does not presume to define specifically how or where such resources will be derived or used. Such factors must be decided on a project to project basis considering in-time physical, economic and political conditions.

2. Greater Cairo Water Resources Region I

a. General. The Greater Cairo Water Resources Region is defined as that area indicated on Map I-11, encompassing portions of the three governorates of Cairo, Giza and Qalyubia. The region described overlies approximately 3,200 km^2 and is located at the apex of the Nile River Delta about 180 km inland from the Mediterranean Sea.

b. Hydrologic Features. The Cairo area can be typified as low desert, having hot summers and cool winters. Within the Nile Valley proper and nearby fringe areas, the influence of the Nile River tends to somewhat temper the general harshness of the surrounding regional climate. The Nile River, in conjunction with its man-made diversions, dominates surface streams in the Cairo zone. Several wadi courses also exist in the vicinity, but these are inconsequential to the Cairo area water resources regime.

i) **Climate.** Seasonal mean air temperatures in Cairo range from 8.6°C in January to 35.4°C in July. Highest summer temperatures have exceeded 45°C, while in winter temperatures of below 0°C have been recorded. Humidity generally varies between 60 and 80 percent through the year, but higher localized humidity may occur in proximity to irrigated and flooded areas along the Nile.

ii) **Rainfall.** Long-term average rainfall in Cairo is only 32mm, essentially all of which occurs from January to March. Occasionally, this low average precipitation is substantially exceeded in a torrential rain which invariably results in surface flooding of various sections of Cairo. Rainfall in the region, although of general local interest, is not an important factor in the water resources regime.

iii) **Evaporation.** Depending on location within the region (i.e. proximity to the Nile), daily potential evaporation ranges from 2.3 to 5.4 mm per day annually (840 to 1,970 mm per year). These evaporation values are low with respect to most other areas of Egypt.

iv) **Surface Streams.** The Nile River and its system of canals is the only perennial through-flowing stream in the zone. No other surface streams of any importance exist. The Nile River, controlled at the Aswan High Dam, has flows at Cairo that vary from 80 to 150 million m^3/day, depending on seasonal requirements both upstream and downstream. The river flows through Cairo from south to north in a wide, relatively shallow, man-made channel on an almost flat gradient. Fluctuations of river levels are very slow, resulting in almost an apparent static level condition. Ground water levels in aquifers adjacent to the river essentially reflect the Nile surface level.

All water resources constituting both ground and surface sources utilized in the Greater Cairo Region are related to the Nile River. Current quantities of water derived from the Nile at Cairo, for both potable and non-potable uses, amount to less than 5 percent of the river flow. It has been determined that even if the high future projected population levels result, water demands of the Cairo region itself can be easily be met by only a small percentage of Nile River sources available. The Nile River will continue to be the source of water for the Greater Cairo area.

c. Water Resources. The primary source of water for Greater Cairo will continue to be withdrawals of surface Nile River waters. Ground water will probably be used to a lesser extent to locally augment surface derived supplies for potable and/or emergency demands. Imported water, exclusive of the Nile River, is not considered a feasible alternate source. Tables I-17 and 18 present the projected water demands that these sources must meet to the year 2000.

i) **Rainfall and Surface Runoff.** Surface runoff in the province area is not of significance to the water resources regime of Greater Cairo. This is also true of the sparse rainfall.

ii) **Nile River Waters.** An abundant and reliable water supply for Greater Cairo is available from the Nile River for as long as the city exists.

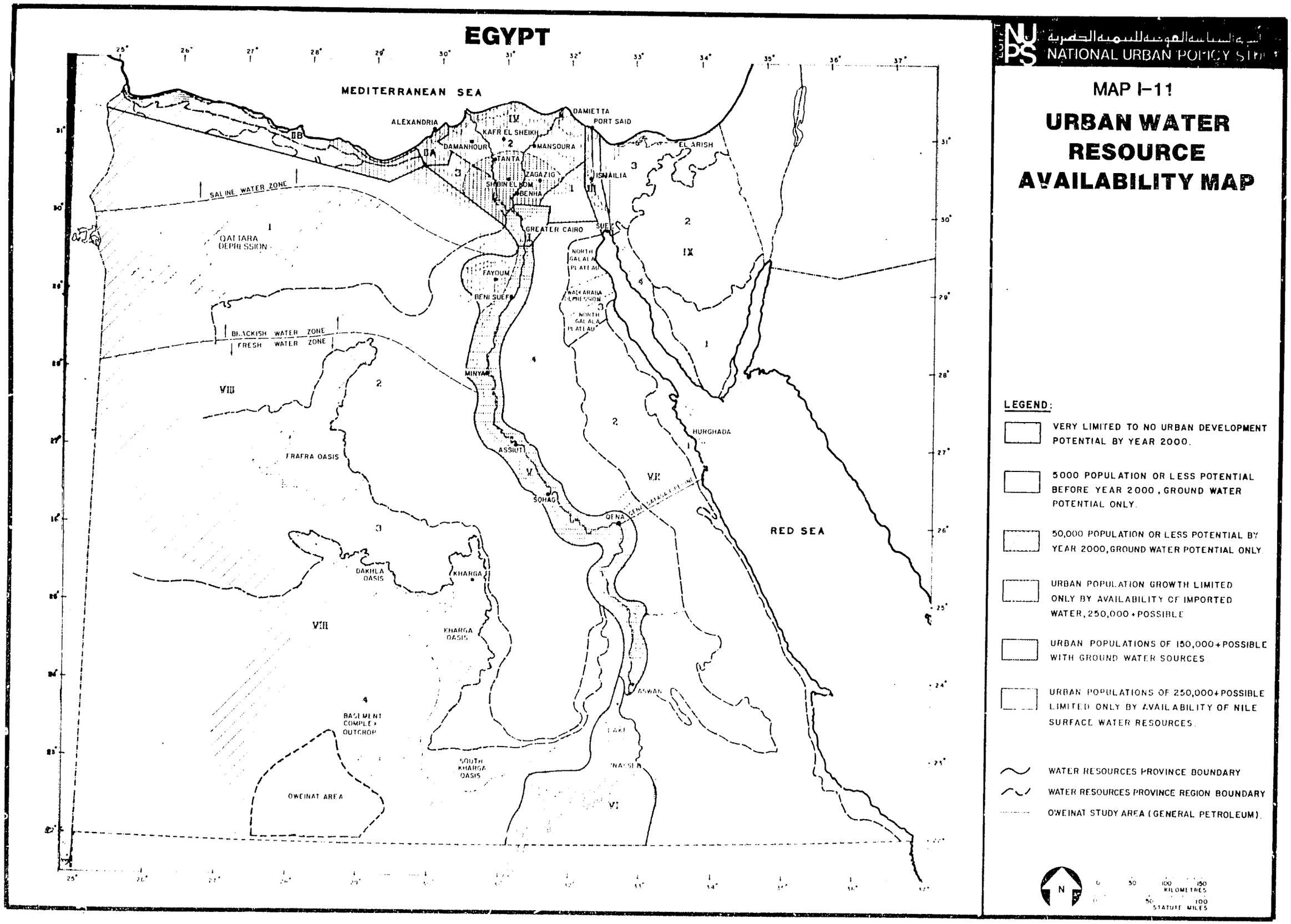

EGYPT
MEDITERRANEAN SEA
ALEXANDRIA
DAMIETTA
PORT SAID
KAFR EL SHEIKH
DAMANHOUR
MANSOURA
TANTA
ZAGAZIG
SHIBIN EL KOM
BENHA
ISMAILIA
EL ARISH
GREATER CAIRO
SUEZ
SALINE WATER ZONE
QATTARA DEPRESSION
FAYOUM
BENI SUEF
NORTH GALALA PLATEAU
WADI ARABA DEPRESSION
BLACKISH WATER ZONE
FRESH WATER ZONE
MINYA
ASSIUT
SOHAG
QENA
HURGHADA
RED SEA
FRAFRA OASIS
DAKHLA OASIS
KHARGA
KHARGA OASIS
ASWAN
LAKE NASSER
BASEMENT COMPLEX OUTCROP
SOUTH KHARGA OASIS
OWEINAT AREA
I
II
III
IV
V
VI
VII
VIII
IX
IX A
IX B
NUPS
NATIONAL URBAN POLICY STUDY
MAP I-11
URBAN WATER RESOURCE AVAILABILITY MAP
LEGEND:
VERY LIMITED TO NO URBAN DEVELOPMENT POTENTIAL BY YEAR 2000.
5000 POPULATION OR LESS POTENTIAL BEFORE YEAR 2000, GROUND WATER POTENTIAL ONLY.
50,000 POPULATION OR LESS POTENTIAL BY YEAR 2000, GROUND WATER POTENTIAL ONLY.
URBAN POPULATION GROWTH LIMITED ONLY BY AVAILABILITY OF IMPORTED WATER, 250,000+ POSSIBLE
URBAN POPULATIONS OF 150,000+ POSSIBLE WITH GROUND WATER SOURCES
URBAN POPULATIONS OF 250,000+ POSSIBLE LIMITED ONLY BY AVAILABILITY OF NILE SURFACE WATER RESOURCES.
WATER RESOURCES PROVINCE BOUNDARY
WATER RESOURCES PROVINCE REGION BOUNDARY
OWEINAT STUDY AREA (GENERAL PETROLEUM).
N
0 50 100 150 KILOMETRES
0 50 100 STATUTE MILES

TABLE I-16a
SUMMARY OF AVAILABILITY OF WATER RESOURCES TO SUPPLY URBAN DEVELOPMENT IN EGYPT TO YEAR 2000 FOR WATER RESOURCES, REGIONS I-IX

REGION/LOCATION/SOURCE	For Year 2000 Population Ranges (Thousands) 0-10	10-50	50-75	75-100	150-250	250-1,000	1,000+	WATER RESOURCES CONSTRAINTS	COMMENTS
I. GREATER CAIRO									
A. Surface Water							A	No physical constraints.	Can meet year 2000 population demand.
B. Ground Water							A	No physical constraints.	Can meet year 2000 population demand.
C. Imported Water									Not required.
D. Other Water									Not required.
II-a. ALEXANDRIA									
A. Surface Water							A	No physical constraints.	Can meet year 2000 demands.
B. Ground Water								Not available.	Saline quality.
C. Imported Water									Not required.
D. Other Water									Not required.
II-b. NORTHWEST COAST									
A. Surface Water	A							Very limited resource available.	Cisterns.
(1) Zone 1	A							Very limited resource available.	Catchments.
(2) Zone 2	A							Very limited resource available.	
(3) Zone 3	A							Very limited resource available.	
(4) Zone 4									
B. Ground Water	A							Limited by quantity and quality.	Localized shallow wells.
(1) Zone 1		A						Limited by quantity and quality.	Localized shallow wells.
(2) Zone 2		A						Limited by quantity and quality.	Shallow wells, galleries.
(3) Zone 3		A						Limited by quantity and quality.	Localized deep well.
(4) Zone 4									
C. Imported Water						P		Pipelines and pumping required.	Current planning.
(1) Zones 1-4		P						Cost of facilities, O and M.	Non-irrigation uses.
D. Desalination									
III. SUEZ CANAL									
A. Surface Water								Not available.	Non-existent.
B. Ground Water								Not available.	Saline quality.
C. Imported Water						A		No physical constraint.	Project active.
D. Desalination		P						Cost of facilities, O and M.	Potable uses only.
IV. NILE DELTA VICINITY									
A. Surface Water						A		No physical constraint.	Via Ismailia coast.
(1) Region 1							A	No physical constraint.	Via Nile Delta system.
(2) Region 2						A		No physical constraint.	Via Nubariya Canal.
(3) Region 3									
B. Ground Water		A						Water quantity and quality.	Near Ismailia Coast.
(1) Region 1						A		Water quantity and quality.	Subject to degradation.
(2) Region 2			A					Water quantity and quality.	Delta alluvium only.
(3) Region 3									
C. Imported Water									Not required.
(1) Zones 1 & 2				P				Pipelines & pumping required.	Current planning.
(2) Zone 2									Possible but not required.
D. Other Water									
V. MIDDLE & UPPER NILE									
A. Surface Water							A	No physical constraint.	Can meet year 2000 demand.
B. Ground Water						A		No physical constraint.	Can meet year 2000 demand.
C. Imported Water									Not required.
D. Other Water									Not required.
VI. LAKE NASSER									
A. Surface Water		P(?)				A		Pipelines and pumping required.	100,000 feddans planned.
B. Ground Water								Resource not yet confirmed.	Nubian aquifer.
C. Imported Water								Resource not yet confirmed.	Not required.
D. Other Water									Not required.

(Continued)

TABLE I-16b
SUMMARY OF AVAILABILITY OF WATER RESOURCES TO SUPPLY URBAN DEVELOPMENT IN EGYPT TO YEAR 2000 FOR WATER RESOURCES, REGIONS I-IX

REGION/LOCATION/SOURCE	For Year 2000 Population Ranges (Thousands) 0-10	10-50	50-75	75-150	150-250	250-1,000	1,000+	WATER RESOURCES CONSTRAINTS	COMMENTS
VII. EASTERN DESERT									
A. Surface Water									
(1) Regions 1-4								Not available.	Unreliable to none.
B. Ground Water									
(1) Region 1		P						Water quality/quantity unreliable.	Localized deep wells.
(2) Region 2								Not available.	Basement rocks.
(3) Region 3		P						Water quality/quantity not confirmed.	Wadi Araba zone.
(4) Region 4		P						Water quantity unconfirmed.	Laqeita Valley.
C. Imported Water									
(1) Region 1		P						Pipelines and pumping required.	Qena-Quseir pipeline.
(2) Region 2	P							Pipelines and pumping required.	Qena-Quseir pipeline.
(3) Region 3		P						Pipelines and pumping required.	Via Suez Canal.
(4) Region 4				P				Pipelines and pumping required.	From Nile Valley.
D. Desalination									
(1) Region 1		P						Cost of facilities, O and M.	Potable uses only.
(2) Regions 2 & 4		P						Probably not practical.	
(3) Region 3		P						Cost of facilities, O and M.	Wadi Hugul and vicinity.
VIII. WESTERN DESERT									
A. Surface Water									
(1) Regions 1-4								Not available.	No suitable stream.
B. Ground Water									
(1) Regions 1, 2								Water quality & depth.	
(2) Region 3					A 1/			No water resource constraint.	Region 3 oases.
(3) Region 4						A 1/		No water resource constraint.	Oases and Oweinate.
C. Imported Water									
(1) Region 1				P				Requires pumping and pipelines.	Eastern sectors only.
(2) Region 2			P					Requires pumping and pipelines.	Eastern sectors only.
(3) Regions 3, 4								Probably not available before 2000.	Conceptual planning.
D. Other Water								Probably not practical.	
IX. THE SINAI									
A. Surface Water									
(1) Regions 1-4								Not available.	Unreliable source.
B. Ground Water									
(1) Region 1								Not available.	Basement rocks.
(2) Region 2		P						Limited quantity and quality.	Under investigation.
(3) Region 3			P					Limited quantity and quality.	Under investigation.
(4) Region 4		P						Limited quantity and quality.	Under investigation.
C. Imported Water									
(1) Region 1, 2								Probably not practical.	Distant from source.
(2) Region 3				P				Pipelines and pumping required.	Northwest sector.
(3) Region 4				P				Pipelines and pumping required.	Via Suez City.
D. Desalination									
(1) Region 1, 2								Probably not feasible.	Location, limited water.
(2) Region 3		P						Cost of facilities, O and M.	North coast sector.
(3) Region 4			P					Cost of facilities, O and M.	Potable uses only.

1/ Does not take into consideration the infrastructure and employment required to support this population.

SOURCE: NUPS Synthesis of Books, Reports and Papers Found in Bibliography.

TABLE I-17
TOTAL PROJECTED AVERAGE DAILY WATER DEMAND

Sub-area	Demand (thousands of cu m/d) 1976	1982	1985	1990	2000
Cairo:					
Central	634	647	651	694	891
South	104	132	152	212	452
Northeast	292	409	479	654	1,207
North	366	713	939	1,380	2,590
Maadi	42	60	70	105	313
Giza	361	556	681	923	1,625
Shoubra El Kheima	13	59	101	207	665
Helwan/Tebin	255	518	621	797	1,413
TOTALS	2,067	3,094	3,694	4,972	9,156

SOURCE: Engineering Science, et. al., Greater Cairo Waterworks Development Programs, Final Report, 1979.

TABLE I-18
PROJECTED MAXIMUM DAY WATER DEMAND

	Demand (thousands of cu m/d) 1976	1982	1985	1990	2000
Cairo:					
Central	793	809	814	868	1,114
South	130	165	190	265	565
Northeast	365	511	599	818	1,509
North	458	891	1,174	1,725	3,238
Maadi	53	75	88	131	391
Giza	451	695	851	1,154	2,031
Shoubra El Kheima	16	74	126	259	831
Helwan/Tebin	292	594	716	923	1,658
TOTALS	2,558	3,814	4,558	6,143	11,337

SOURCE: Engineering Science, et. al., Greater Cairo Waterworks Development Programs, Final Report, 1979.

TABLE I-19
AQUIFER CHARACTERISTICS

Name of Well Field	Transmissibility Value (cu m/m'd)	Storage Coefficient
Warrak El Arab	3,650	0.0069
El Marg	2,290	0.0041
Rod El Farag	1,060	0.0081
Shoubra El Kheima	1,830	0.0280
Tebin	11,180 1/	0.0053
Zeitoun	3,840	0.0130

1/ This well field is not currently operating.

SOURCE: Engineering Science, et. al., Greater Cairo Waterworks Development Programs, Final Report, 1979.

TABLE I-20
WATER WELL TEST INFORMATION

Name	Date	Depth to Water (m)	Flow Rate (cu m/h)	Max Pumping Level (m)	Drawdown (m)	Specific Capacity (cu m/m'h)
Rod El Farag (well no. 2)	27 Jul 77	5.48	240	17.68	12.20	19.67
El Marg (well no. 4)	20 Jul 77	1.60	300	12.15	10.55	28.44
Zeitoun (well no. 1)	31 Jul 77	4.15	145	6.55	2.40	60.42
Warrak El Arab (well no. 6)	9 Aug 77	3.00	100	9.90	6.90	14.49
Tebin (well no. 3)	10 Aug 77	2.39	300	4.46	2.07	144.93
Shoubra El Kheima (well no. 13)	11 Aug 77	5.62	240	13.92	8.30	28.92
Mostorod (well no. 14)	31 Aug 77	5.72	131	13.03	7.31	17.92

SOURCE: Engineering Science, et. al., Greater Cairo Waterworks Development Programs, Final Report, 1979.

As with many such surface resources throughout the world, problems are not usually related to quantity, but to quality. Urbanization, irrigation, navigation and industrialization as well as modifications of natural river flow environments all contribute to potential degradation of Nile River water quality through time. Further change in the natural environment of the river watershed upstream of Lake Nasser and within the lake itself will contribute to water quality changes, both favorable and unfavorable, throughout the length of the Nile to the Mediterranean Sea. Because of the complexity of the many factors involved with the Nile, neither short- nor long-term impacts of its water quality have been completely assessed. Needless to say, caution and vigilance will necessarily be required to ensure that the abundant quantity of the Nile resource is not reduced or impaired by quality degradation.

iii) **Ground Water.** Water wells producing from alluvial aquifers lying beneath the Nile Valley contribute approximately 25 percent (1979) of the potable water supply to Greater Cairo. Well fields are primarily located along the Nile and produce directly into the existing water system; whether through treatment plant clearwells (downstream of treatment) or to system transmission pipelines.

Aquifers underlying the Nile Valley are generally considered to be recharged through direct hydraulic continuity with the river. Thus, province ground water resources can be considered only an extension of Nile surface flows, rather than a separate resource (i.e. each cubic meter of ground water extracted is replaced by the same volume of Nile surface flow). In effect, the valley alluvine aquifers will maintain full storage capacity as long as surface flows persist in the river.

Aquifer tests conducted at six wells constructed in the Nile Valley alluvium

reveal. the aquifer(s) to be of medium to high transmissivity. (See Table I-19) Characteristics of tested wells are indicated in Table I-20. All information available demonstrates the Nile Valley alluvial aquifer to have good to excellent transmissivity and that high capacity, reliable wells can be constructed therein. Because of its broad occurrance, high transmissivity and essentially infinite recharge capacity, the Nile Valley can continue to provide a reliable ground water supply to the Greater Cairo system.

As with the Nile surface water supply, the major concern and possible constraint to continued ground water development will be quality degradation. Ground water quality problems are most generally related to man-imposed conditions, such as leaky sewer systems, polluted surface water infiltration and unsanitary well construction and maintenance procedures. Table I-21 lists relative water quality characteristics of ten water wells in the Cairo vicinity. Table I-22 summarizes the condition of water resources for the Greater Cairo Region.

3. Alexandria Water Resources Region IIA

a. General. The boundaries of the Alexandria Water Resources Region, other than that formed by the Mediterranean shoreline, generally correspond to those of the project area of the Alexandria Water Works Project.

Alexandria, second largest city in Egypt (population approximately 2.8 million), derives its water supply almost in total from Nile River waters. Natural stream flow and rainfall is used only for incidental washing and perhaps domestic (cisterns) duties within the province vicinity. All future urban growth in and around Alexandria, related to water, is predicated on the use of water brought from the Nile.

b. Hydrologic Features

i) **Climate.** The Alexandria climate can be characterized as mild Mediterranean, with

TABLE I-21
GROUNDWATER QUALITY

	Electrical Conductivity (umphos/cm)			Iron (mg/l)			Manganese (mg/l)		
	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum
El Marg	560	580	520	0.64	0.70	0.50	0.22	0.30	0.20
Rod El Faraq	720	1,400	300	1.07	3.00	0.50	1.35	2.20	0.90
Shoubra El Kheima	545	620	380	0.55	0.80	0.40	0.72	1.20	0.40
Cairo North	483	1,500	450	0.58	2.00	Nil	0.61	1.60	0.20
Mostorod	593	800	475	0.35	0.70	0.20	0.21	0.50	0.20
Zeitoun	3,225	4,800	1,600	0.36	1.50	0.20	0.22	0.40	0.20
Maadi	2,239	7,000	1,000	0.3	0.9	0.2	0.2	0.2	0.2
El Ahram	700	1,000	450	0.25	0.40	0.20	0.20	0.20	0.20
Embaba	420	440	420	0.20	0.20	0.20	0.20	0.20	0.20
Warrak El Arab	348	425	325	0.55	0.90	0.50	0.58	1.00	0.20

SOURCE: Engineering Science, et. al., Greater Cairo Waterworks Development Programs, Final Report, 1979.

TABLE I-22
SUMMARY OF WATER RESOURCES CONDITIONS
GREATER CAIRO REGION [1]

	Province Wide	Comments
I. GENERAL		
A. Climate Type	Low desert.	Temperate along Nile.
B. Rainfall	Average 32 mm/yr.	
C. Surface area (km^2)		
D. Evaporation	Average 840-1,970 mm/yr.	Nile Valley -- Plateaus respectively.
II. WATER RESOURCES		
A. Surface water	Nile River.	
1) Location	Nile River Valley.	
2) Development potential	Physically unlimited.	
3) PC relative cost to develop	Low.	
B. Ground water	Nile Valley.	
1) Aquifer	Nile Valley alluvium.	Modern averine deposits.
2) Water quantity	Undetermined, 1.0 million m^3/day+.	Directly recharged by Nile.
3) Water quality	Excellent to poor, 300-7,000	High well to well variability.

SOURCE: NUPS Summary.

generally warm summers and cool winters. Mean maximum to mean minimum temperatures range from about 29°C to 9°C locally. Humidity is rather constant throughout the year, usually varying diurnally between 50 and 70 percent.

ii) **Rainfall.** Average annual rainfall in Alexandria is the highest of all Egypt, being 180+ mm per year. As in most other coastal areas of the country, precipitation is reduced inland, and amounts to only about 160 mm per year at the southernmost point of the area. The rainy season, during which more than 90 percent of the rain usually falls, occurs between November and February. Heaviest precipitation is usually in December, while virtually none falls during May through September.

iii) **Evaporation.** Average evaporation in the region is relatively low by Egyptian standards. At Alexandria, potential average evaporation has been calculated to be about 1,650 mm per year. Other sections, on the order of 40 km inland, experience increased evaporation values to extremes of about 3,500 mm per year. The highest values occur in the southwest desert sector of the province.

iv) **Surface Stream Characteristics.** Throughout the province, essentially all surface water flows are related to the existing Delta canal systems. Uncontrolled wadi and other natural water courses are essentially non-existing since constructed waterways effectively collect and divert all surface drainage. Only small secondary benefits are derived by local populations from natural surface streams.

c. **Water Resources.** Water brought from the Nile is the only viable supply source for Alexandria. Direct rainfall, natural stream runoff and/or ground water constitute only slight water use components throughout the area.

i) **Rainfall and Surface Runoff.** These naturally occuring water resources are employed to some extent for irrigation and potable (cistern) supplies; for the most part, in rural locales. Small amounts of rain water are collected for domestic supplies in lightly populated locations fringing the more developed areas near Alexandria. Taken as a total these natural sources comprise an insignificant amount of the water used in the region.

ii) **Ground Water.** Because of the characteristically poor quality of ground water occuring beneath the area, only a small number of shallow dug wells are found. Water derived from such wells is used only for purposes such as course washing, wetting roadways, and other uses not dependant on quality considerations. Ground water is regionally more a problem than a benefit, because of upward leaching which causes locally increased soil salinities. All available information indicates that under no condition will ground water resources ever be of any positive importance to urban development in the Alexandria region.

iii) **Imported Water.** Water supplies to satisfy Alexandria's demands are delivered via the Noubaria and Mahmoudia Canals from the Rosetta Branch of the Nile River. New treatment and distribution facilities are currently under construction to upgrade and expand water supplies to meet future requirements to the year 2000. By that time, the permanent population is expected to reach about 4,800,000. In addition, because of its favorable tourism location, peak seasonal visitor population is expected to rise from the present 350,000 persons to near 600,000.[2] Planning and construction for the expanded water system is being done under the direction of the Alexandria Water General Authority (AWGA), the major provider of potable water to the city. Water required for development of irrigated sectors east and south of Alexandria are not included in figures indicated in Table I-23.

d. **Summary.** With imported water being the only resource upon which the region can rely for future water supplies, it is obvious that future urban growth in and around Alexandria will be supported by Nile River water. The current planning and construction in the area is projected to satisfy potable water needs of an approximate permanent population of 4.8 million plus 0.6 million seasonal visitors by the year 2000.

TABLE I-23
EXISTING TREATMENT PLANT CAPACITY AND PLANT CAPACITY UNDER CONSTRUCTION
(m^3/day)

Plant	Design Capacity in Service 1977	Average Daily Production 1976	Nominal Capacity Under Construction 1978	Total Design Capacity
Rand Point	221,000	334,000	34,000	255,000
Siouf	140,000	171,900	50,000	190,000
Manshia	100,000	74,850	140,000	240,000
Fom El Garaya	50,000	56,500	--	50,000
Mansoura	23,000	25,000	--	23,000
Maryut	24,800	38,000	50,000	74,800
TOTAL	558,800	700,250	274,000	832,800

SOURCE: Camp Dresser and McKee, Inc. Alexandria Waterworks Master Plan Study, 1978.

Table I-24 summarizes water resources conditions in the province and Table I-16 relates these resources to potential urban development to year 2000.

4. Northwest Coast Water Resources Region IIB

a. **General.** The Northwest Coast Region occupies a relatively narrow belt of land on the Mediterranean Sea coast between Alexandria and the Egypt-Libya border near Salum.

The region is bounded on the north by the Mediterranean Sea and the south by the generally arbitrary line shown on Map I-11. The dimensions

are approximately 500 km in length and 10 to 50 km in width — an area of some 12,500 km^2.

Land forms within this coastal area are generally characterized by two or more parallel ridges of dunes with narrow elongate plains between. Further inland wind and water deposited alluvial plains rise toward the rocky western desert plateau to the south. Elevations of the land surface range from sea level to 200 meters in the western coastal sector between Salum and Ras Alen, and to about 120 meters between Ras Alen and Alexandria, but elevations rarely reach more than 110 meters east of Ras Abu Gerab.

b. Hydrologic Features. The Northwest Coast occupies the terminal northern portion off the great Western Desert along the Mediterranean Sea. The climate of the province differs somewhat from that of the inland desert areas in that it has comparatively high humidity and greater annual rainfall.

i) **Rainfall.** Rainfall in the area occurs, for the most part, throughout the season beginning in mid-October and continuing through February. Rain is usually heaviest during the months of December and January. Typically, precipitation averages from 100 to 150 mm with higher rainfall along the coast.

TABLE I-24

SUMMARY OF WATER RESOURCES CONDITIONS, ALEXANDRIA REGION II-A

	Province Wide	Comments
I. GENERAL		
A. Climate type	Coastal desert.	
B. Rainfall	Average 160-180 mm/year.	Decreases Inland.
C. Surface area (km^2)	2,100.	Alexandria Waterworks Project area (1978).
D. Evaporation (mm/year)	1,650-3,500.	Increases inland.
II. WATER RESOURCES		
A. Surface water	Very limited use.	
(1) Location	Rural areas only.	Few cisterns.
(2) Development cost	N.A.	
B. Ground water	Very limited use.	
(1) Aquifer location	N.A.	
(2) Water quantity	N.A.	
(3) Water quality	All brackish or saline.	
(4) Development potential	None.	
C. Imported Water	Nile River water, Rosetta Branch.	Planning & construction underway to satisfy year 2000 requirements.
(1) Source via	Nubariya & Mahmoudia Canals.	
(2) Develop. potential	Practically unlimited.	
(3) P.C. relative return/cost		
(a) commercial	Low.	
(b) industrial	Low.	
(c) tourism	Low.	
(d) irrigation	Low.	
(e) domestic	Low.	
D. Other		
(1) Desalination	N.A.	
(2) W.W. reclamation -- cost and other	Possibly feasible. Moderate.	Not required by year 2000.

SOURCE: NUPS Summary.

ii) **Evaporation.** Potential evaporation has been determined to be about 1,500 mm annually along coastal locations. It is reasonable to assume that evaporation increases dramatically as distance from the coastline into the desert increases. Considering the disparity between annual average rainfall (150 mm) and evaporation, it can be assumed that natural soil moisture deficiencies will generally be high throughout the area, except along drainage courses and areas underlain by shallow ground water.

iii) **Surface Streams.** Along the entire east-west length of the region, there are no through-flowing perennial stream courses. All surface streams are intermittant in nature and include approximately 220 wadis with drainage areas ranging from 1 km^2 to 270 km^2. Many of the wadi courses do not reach the sea but drain to depression areas, hollows and salt marshes formed in or behind dunes inland from the coastline.

c. Water Resources. Water resources occur as direct rainfall and surface runoff, localized ground water and imported Nile River water (via the Mariyut extension). The bulk of the waters from all sources is utilized for agriculture, much at a subsistence level, while only a small percentage is used for commercial, industrial, municipal and domestic purposes. All available information indicates that areas where water resources are currently developed constitute the better source areas existing in the area. Future expansion of water supplies regionally should be anticipated to be more costly and less productive than those currently in place.

i) **Rainfall and Surface Runoff.** With the exception of ground water recharge, rainfall and runoff (both natural and controlled) are utilized almost exclusively for agriculture and animal propagation. Favorable conditions for such activities comprise only a small area of the total region with concentrations being generally in the lower stable topography of the near coastal vicinity. Although this area has

one of the highest rainfall environments in Egypt, with an average of approximately 150 mm annually at the coastline, a marked reduction to about 75 mm occurs within 30 km of the Mediterranean. Such low average precipitation, coupled with the natural capriciousness of seasonal weather, substantially reduces the feasibility of successful agricultural ventures in inland areas.

ii) **Rainfall and Surface Runoff Water Supply Potential.** Annual surface runoff from regional wadis represents 2.1 percent of total rainfall. Clearly, a large volume of such runoff must be lost to the sea, salt marshes and evaporation from depressions. As a result of such losses, it is probable that less than one percent of total wadi runoff can beneficially accrue to ground water resources and agricultural activities.

More than 3,000 cisterns have been constructed in the northwest coastal regions since the Roman period, and these provide the major source of drinking water to people and animals living in inland areas. These structures, when in repair, capture seasonal surface flows and store quantities of water ranging from 100 to 3,000 m^3 each. A regional survey conducted in 1970 identified 487 cisterns having a total capacity of 215,000 m^3. (Table I-25)

On the order of perhaps 500 additional operational cisterns exist which were not identified in that survey. It is estimated that a total of approximately 450,000 m^3 of cistern storage could be available throughout the region. If only an animal population consisting of 600,000 sheep and 200,000 goats is considered, a per head availability of water from cistern supplies of only 0.56 m^3 per annum is calculated. Such a simplified calculation may be meaningless for planning purposes, but it does serve to demonstrate the small magnitude of water supplied by the indigenous cistern system, and that even a ten-fold increase in cistern capacity would provide only limited augmentation to overall future potential water demand.

iii) **Ground Water.** Ground water resources have been known to exist in the Northwest Coast since early historic times. However, concentrated efforts to evaluate and develop these potential supplies were not initiated until about 1961, after which approximately 1,050 shallow wells with windmill production systems were constructed to augment water supplies for olive orchard irrigation. (Table I-26) This program provided additional data regarding ground water conditions, but for various reasons failed to improve olive production. Since 1966, several studies have been prepared assessing reports of both soil and water resources in the area including:

TABLE I-25
CISTERNS IN OPERATION
1970

Region	Number of Cisterns	Capacity Total m3	Capacity Average m3
Burg El Arab-El Hammam	15	2,000	135
El Dab a-Fuka	105	30,000	288
Mersa Matruh-Neguila	229	120,000	524
Sidi Barrani-Salum	138	63,000	456
TOTAL	487	215,000	442

SOURCE: Ismail, Shafir, Gaafar, Darwish, Regional Plan for the Coastal Zone of the Western Desert, 1979.

TABLE I-26
WINDMILL PRODUCTION SYSTEMS
1969

Locality	Number of Windmills Installed	Average Capacity of Storage Tanks
Burg El Arab	526	3.5 m^2
El Dab'a	190	3.5
Mersa Mateuh	311	8.0
Sidi Barrani	14	3.5
TOTAL	1,041	

SOURCE: Ismail, Shafir, Gaafar, Darwish, Regional Plan for the Coastal Zone of the Western Desert, 1979.

- RAGWA, 1966, Reconnaissance Geologic Soils Maps of the Northwestern Coastal Zone. Scale 1:1,000,000.
- Hassan and El-Ramly, 1966, Preliminary Ground Water Investigations in the Ras El Hekma Area, unpublished report of Desert Institute.
- La Mereaux, 1969, Ground Water Resources of the Northwestern Coastal Zone.
- A.R.E., Report for FAO, Alabama University, U.S.
- FAO, 1970, Physical Conditions and Water Resources ESE, SF/UAR 49, Technical Report 2.
- Ministry of Housing and Reconstruction, A.R.E., 1976, Regional Plan for the Coastal Zone of the Western Desert, H. Ismail, I. Gaafar, Y. Shafik, A.R. Darwish.

Ground water resources in the Northwest region are found to be primarily associated with four geologic units:

- Beach Sediments:

These recent and active sediments include both marine beach deposits and the unconsolidated coastal dune system. As may be expected along such a lengthy coastal sector, these deposits vary significantly in area and importance as water bearing units. Prominant locations of occurrence lie between Alexandria and El-Alamein, Ras El-Hekma to the west of Marsa Matruh, and from Sidi Barran to near Salum. Throughout other stretches of the coast, these deposits occur in less important localized and isolated areas. The beach sediments are

164 165

primarily comprised of fine grained sand of high carbonate mineral content and infrequently range to 30 meters in thickness.

Ground water contained within this water bearing unit is derived from direct percolation of rainfall and inland stream flows which terminate in or cross through the beach sediments. Consequently, recharge and recovery of ground water storage is seasonal and subject to the vagaries of each rainfall period.

Substantial decay of storage and water levels in dunal material is characteristic during the dry season through processes of natural lateral discharge and transpiration by fringing vegetation. Collection galleries and wells contribute to natural dewatering processes.

Waters contained within the beach sediments occur under unconfined conditions and probably in mounded configurations which sub-parallel surface topography. The fine grained nature of the deposits results in moderate specific yields but low permeability. The latter hydraulic characteristic is partially confirmed by a well pumping test conducted at Bagush which indicated a receptively low coefficient of permeability of 17 $m^3/d/m^2$ for coastal dune deposits.

Water quality in beach sediments is reported to contain less than 1,000 mg/c TDS in well developed dunal areas, but in much of the area of occurrence high salinity waters are present. Additionally, water well production rates must be critically observed, even in the better water quality vicinities to avoid encroachment from deeper and juxtaposed saline waters.

- Alluvial Deposits:

The alluvial deposits aquifers are contained within back-filled stream channels which were formerly incised wadi courses. Aquifer materia are comprised of a heterogeneous mixture of sediments ranging in grain size from gravel to silts. Distribution is limited to existing stream beds and is reported to vary to 10 m depth in near-coastal locations where confined zones may exist. Recharge to the alluvium is derived principally from seasonal surface flows along the sediment filled water courses. Dry season channel storage is considered to be regulated, for the most part, by equilibrium conditions which develop between the coastal fresh water/saline water, interface.

Miocene formation(s), usually containing water of poor quality, form the bottom and lateral boundaries of the alluvial deposits which produce water of about 1,000 mg/c TDS.

Permeability coefficients derived from pump tests in six alluvial deposit wells indicate value ranges of about 8 to 34 $m^3/d/m^2$ from aquifers of 1.0 m or less in thickness.

Ground water production from the alluvial aquifer(s) can be considered as limited, localized and, in many cases, subject to degradation from nearby saline sources.

- The Alexandria Formation:

The aquifer zone(s) contained within this formation is widely distributed along a belt extending to between about 10 to 20 km inland from the Mediterranean coastline. Water bearing materials of the formation consist of semi-consolidated aeolian limestone, generally in ridge form and locally mantled with wind blown sand deposits. Ground water occurs in secondary solution structures within the ridge forming deposits which may have internal porosities ranging to 45 percent. Formation surfaces exposed to weathering processes are frequently encrusted with a thin calcamious patina of considerably lower permeability than underlying materials.

As with the younger formation materials described above, recharge to the Alexandria Formation aquifer(s) is derived from direct percolation of seasonal rain-fall and dissecting surface streams. Dry season natural depletion of the aquifer(s) is probably similar to that of the beach sediments (i.e. through lateral escape to nearby areas of lower elevation).

Water quality in the Alexandria aquifer system varies broadly in geographic location and geologic environment. Total dissolved solids may locally range from averages of 1,000 to 5,000 mg or higher. The major factor controlling water quality appears to be water level elevation above sea level with quality becoming poorer with decreasing elevation.

Well pumping tests conducted in three aquifer locations indicate low to moderate values of permeability (14.9 to 67.0 $m^3/d/m^2$). However, aquifer sections of only 0.60 m to 1.05 m were tested in these dug wells.

Evidence available to date strongly suggests that little possibility exists for the construction of water wells producing more than a few liters per second each from Alexandria Formation aquifer(s).

- Older Sediments:

The Pliocene Formations, Alam El-Khadin and Qasr El-Qatagi, are reported to contain aquifer zones in limestone and sandstone members respectively. In both formations, water bearing strata are associated with synclinal structures and occur in localized portions of the Northwest Province at both Galal and Ghot Rabban.

Water produced from wells in the vicinity is of generally poor quality, ranging betwen 2,800 and 3,400 mg TDS. In the Ghot Rabban vicinity well water from the Pliocene aquifer is somewhat better, containing TDS of 700 to 1,900 mg.

Middle Miocene formations include perched ground water bodies associated, in the main, with synclinal structures and/or facies changes. Notable among such areas are Fuka and El-Qataf Basins. Ground water derived from Fuka Basin averages about 2,000 mg TDS while that from El-Qataf is significantly better at 125-570 mg TDS. Middle Pliocene aquifers are of limited extent and production capacity as demonstrated in a study of Fuka Basin[3], wherein it was determined that on the order of only 2,000 m^3/d could be continuously withdrawn from the aquifer(s).

The water bearing zone(s) in the regionally underlying Lower Miocene formation has not been evaluated conclusively. It is known that the

aquifer is confined with piezometric level reductions to the northwest, and that water quality is relatively poor (3,600 mg TDS).

On the basis of information available concerning ground water occurrence and quality in the Pliocene and Miocene aquifers underlying the Northwest province, it appears unlikely that significantly large and useful additional supplies can be derived from such sources.

As in the case of rainfall and runoff resources, it should again be noted that gross regional water values are useful only in the overall sense, but are not of particular use in planning specific projects for any purpose, including urban development.

- Summary of Ground Water Potential:

In consideration of all information currently available, no significant ground water resources of suitable quantity and/or quality are present in the area that would justify concentrated urban development on a large scale. Ground water conditions generally existing throughout can be best developed on a widespread, low production basis to supply low rate individual producers and small community requirements. Each new project area which is planned to utilize ground water as a source of supply will require specific areal water resources evaluation. On the basis of ground water resources availability alone, extensive population absorption within the region does not appear feasible for the foreseeable future.

iv) **Imported Water Resources.** The Nile River is the only available source for importation of water into the area. Such imported water currently appears to be the only supply feasibly obtainable to promote significantly expanded urban settlement.

Presently, Nile River water, transmitted via the Mariyut Extension, is being used for irrigation projects a short distance west of Alexandria. There are also plans to extend additional irrigation projects into a 90,000 feddan area south of El Hammam; approximately 45 km west of the Western Desert, Cairo-Alexandria Highway. Additional preliminary studies are evaluating other extensions and facilities which could deliver water as far west as Salum near the Egypt-Libya frontier.

It is beyond the scope of this section to comment on the engineering or economic feasibility of transmitting Nile water to remote sectors of the northwest coast.

d. Summary. In view of all information available for review to date, as well as the natural physical characteristics of the Northwest Coast Province, it appears that significant urban expansion of the province will be constrained by water resources availability until Nile water is provided. As in other areas of Egypt where imported water is either currently supplied or planned to be provided, economic and/or political considerations, not physical conditions, will determine urban development rates in the Northwest Coast Province.

Table I-27 summarizes water resources in the province and Table I-16 relates these resources to potential urban development to year 2000.

5. Suez Canal Water Resources Region III

a. General. Port Said, Ismailia and Suez are the major population centers along the Suez Canal from the Mediterranean Sea southward to the Gulf of Suez. The water resources region is primarily defined by geographic location rather than hydrologic conditions, although the latter has commonality throughout the area. Boundaries of the province as defined are shown in Map I-11.

b. Hydrologic Features. The Suez Canal region is approximately 150 km long and 20 km wide and extends from the Mediterranean Sea through the Eastern Desert to the Gulf of Suez. Hydrologic conditions vary somewhat throughout the different environments encountered along this rather linear land segment.

i) **Climate.** In general, the region is dry, hot desert; however, humidity is maintained at relatively high levels throughout because of the influence of the Mediterranean Sea, Gulf of Suez, internal lakes and the Suez Canal itself. Maximum temperatures recorded vary by only a few degrees from Port Said to Suez, in the range of 44-48°C, with the highest average maximum temperatures occurring between May and September annually.

ii) **Rainfall.** Average annual rainfall increases from about 23 mm at Suez to 67 mm at Port Said. Most rain occurs during December, January and February, and frequently falls in heavy showers of short duration.

iii) **Evaporation.** Natural evaporation significantly exceeds precipitation as in most areas of Egypt. Average potential evaporation (Piche) exceeds 3,400 mm at Suez, but drops to between about 2,000 and 2,500 mm at Ismailia and Port Said, respectively. The period of highest evaporation occurs April to October.

iv) **Surface Streams.** No perennial surface streams exist in the Suez Canal region other than those associated with Nile River water diversion works. Natural streams are intermittent and only infrequently, after unusually heavy showers, carry torrential flows. Surface runoff either flows to the Suez Canal and its lake system or percolates into shallow wadi alluvial deposits. Practically no water resources benefit is directly derived from natural surface streams.

c. Water Resources. Water brought from the Nile predominates as the source of supply. Rainfall and surface runoff are captured to a slight degree to serve domestic purposes and ground water is sparsely used to serve non-potable requirements such as for wetting dusty surfaces and coarse washing needs. The latter two resources are miniscule in the resources regime of the area, while imported water is the lifeline source.

i) **Rainfall and Surface Runoff.** Because of the insignificance of these natural resources to current and future urban development in the Suez Canal region, no discussions of their current use or potential development are considered salient to this study.

ii) **Ground Water.** Brackish to saline water prevails in aquifer zones in juxtaposition to and beneath the area. The overwhelming consensus of all investigations, past and present, as well as the general hydrogeologic environment, indicate no ground water resources of suitable quantity and/or quality for urban use consideration exist in the region.

iii) **Imported Water Resources.** This source of water, whether from the Nile River or ground water from other regions, will continue to provide essentially all urban

TABLE I-27
SUMMARY OF WATER RESOURCES CONDITIONS
NORTHWEST COAST REGION II-3

	PROVINCE-WIDE	ZONE 1 Recent Beach Deposits	ZONE 2 Alluvial Deposits (Holocene)	ZONE 3 Alexandria Formation (Pleistocene)	ZONE 4 Older Sediments (Plio-miocene)	COMMENTS
I. GENERAL						
A. Climate Type	Mediterranean-Coastal Desert.					
B. Rainfall (mm)	100-150 average annual.	Generally 150.	100-150.	100-200.	Mostly 100 or less.	Decreases inland.
C. Surface Area (km^2)	12,500.	300.	2,500.	6,500.	3,200.	--
D. Surface Topography	Varies with zone.	Active beaches and dunes.	Wadis and flood plains.	Inactive dunes and depressions.	Featureless and irregular erosion surfaces.	--
E. Evaporation (mm/year)	1,500 to 2,500.	1,500.	1,500-2,000.	2,000+.	2,500.	Increases inland.
II. WATER RESOURCES						
A. Surface Water						
(1) Location	Small amount.	Small amount.	Small amount.	Very small amount.	Very small amount.	Intermittent wadi flooding.
(2) Development potential	Cisterns, small catchments and galeries.	Catchments.	Catchments, cisterns.	Catchments, galaries.	Catchments, cisterns.	--
(3) P.C. relative cost to develop	Moderate to high.	Moderate to high.	Moderate to high.	Moderate to high.	Moderate to high.	--
B. Ground Water						
(1) Formation type	Sedimentary continental and marine formations.	Active dunes and beach sediments.	Continental and marine wadi course sediments.	Slightly undilated limestone dunal sediments.	Interbedded clay and sandstone sediments.	--
(2) Quantity	Small.	Small.	Small.	Small.	Small to moderate.	Sources are all generally unreliable in quantity and quality.
(3) Quality (mg/c TDS)	125 to 5,000+.	Localized 800+.	Localized 1,000+.	1,000 to 5,000+.	Localized 125 to 3,600+.	
(4) Development potential	Generally small capacity wells.	Localized low capacity wells.	Localized low capacity wells.	Localized low to moderate capacity wells.	Localized low to moderate capacity wells	--
(5) P.C. relative to cost to develop	High.	High.	High.	High.	High.	--
C. Imported Water						
(1) Source	Nile River -- Western Delta Canal System.	Pumped, pipeline.	Pumped, pipeline.	Pumped, pipeline.	Pumped, pipeline.	--
(2) P.C. relative return/cost	Low to high.					This item varies with distance from pipeline.
(a) commercial		Moderate.	Low.	Moderate.	Low.	
(b) Light Industrial		Low.	Low.	Moderate.	Low.	
(c) Tourism		High.	Low.	High.	Low.	
(d) Irrigation		High.	Low.	High.	Low.	
(e) Domestic		Low.	Low.	Moderate.	Low.	
D. Other		Moderate.	Moderate.	Moderate.	Moderate.	
(1) P.C. capital and o and m	Saline water conversion.	Moderate to high.	N.A.	High.	Very high.	Irrigation not feasible.
(2) P.C. capital and o and m	Waterwater reclamation.	High	N.A.	Moderate to high.	Very high.	Irrigation only.

SOURCE: Ismaili, Shafir, Gaafar, Darwish, Regional Plan for the Coastal Zone of the Western Desert, 1979.

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supply requirements. Recent Master Plan studies of the major cities of Port Said, Ismailia and Suez have determined the year 2000 requirements for each to be as follows:

City	Water Requirement $(10^3 m^3/d)^3$
Port Said	90,414
Ismailia	70,308
Suez	128,845

Programs to upgrade transmission, treatment and distribution systems for these cities and their intra-sector areas are currently active.

With imported water being the primary and practically only source available to the Suez Canal Province, the predominant constraints to water supply availability within the area will be 1) water transmission facilities; and 2) water delivery policy.

d. Summary. Present and future urban development in the Suez Canal region, in relation to water resources, will be totally dependent upon imported water from the Nile River. The delivery of such water will be regulated by economic and political factors, not natural physical availability from within the region.

TABLE I-28
SUMMARY OF WATER RESOURCES CONDITIONS
SUEZ CANAL REGION III

	Province Wide	Zone 1 Port Said	Zone 2 Ismailia	Zone 3 Suez	Comments
I. GENERAL					
A. Climate Type	Mediterranean - desert	Mediterranean	Low desert	Coastal desert	
B. Rainfall (mm)	Annual average 23-67	67 or less	29+	23+	
C. Surface area (km^2)	3,000				
D. Surface topography	Generally featureless	Marine - deltaic	Relatively flat	Relatively flat	
E. Evaporation (mm/yr)	Potential between 2,000-3,500	2,000+	2,500	3,400	
II. WATER RESOURCES					
A. Surface water	Very little	None (marine)	Very little	Very little	Essentially all imported
1) Location	Few locations throughout	None	Few	Few	
2) Development potential	None	None	None		No practical development foreseen
B. Groundwater	No potable sources	None	None potable	None potable	All Brackish or saline
1) Development potential	None but non-potable	None	None	None	Only brackish or saline
2) PC development cost	N.A.	N.A.	N.A.	N.A.	
C. Imported water	All Nile River water	Nile River	Nile River	Nile River	Possible future ground water
1) Source via	Gravity canal systems	Abbassa Canal	Sweetwater Canal	Sweetwater Canal	
2) Development potential	Good for urban supplies	Fair	Good	Good	Good concentrated growth potential.
3) PC relative return/cost	Relatively low throughout				
a) commercial		High	High	High	Most is gravity source water.
b) industrial		High	High	High	
c) tourism		High	High	High	
		Moderate	Moderate	High (?)	(?) Include Gulf of Suez near Suez.
d) irrigation		Low	Moderate	Low-moderate	
e) domestic		High	High	High	
D. Other					
a) cost and O & M, PC	Saline water conversion	High	High	High	Relative to imported, non-irrigation.
b) cost and O & M, PC	Wastewater reclamation	Very High	Moderate-High	Moderate-High	Relative to imported, irrigation only.

SOURCE: NUPS Summary.

Table I-28 summarizes water resources in the province and Table I-16 relates these resources to potential urban development to year 2000.

6. Nile Delta and Vicinity Water Resources Region IV

a. General. This water resources area is depicted in Map I-11 to include an area of about 28,000 km^2 which includes the Nile Delta north of Greater Cairo to the Mediterranean Sea, the area fringing the delta on the east to the Suez Canal region, and the desert area west of the delta to an arbitrary boundary passing from Giza, west of Sadat City, then to the western extent of Greater Alexandria. For purposes of description, the region has been divided into three zones: 1) the Eastern Desert zone; 2) the Delta zone; and 3) the Western Desert zone. Boundaries of these zones are also shown in Map I-11.

i) **The Eastern Desert Zone.** The defined area of this zone is bounded by the Suez Canal region limit on the east, the northern extent of the Eastern Desert region on the south and Greater Cairo on the southwest. The closing boundary on the northwest follows a short distance east of the Ismailia Sweetwater Canal, crosses to the east of the Faqous Canal, then continues on-line toward El Qantara in the Suez Canal region. Overall, the area is characterized by relatively undeveloped, flat to gently undulating, barren land surfaces, with the exception of a narrow agricultural belt directly adjacent to the Ismailia Canal between Abu Hammad and Ismailia. The northwest edge of the region effectively parallels the eastern irrigated extent of the Nile Delta zone.

ii) **The Nile Delta Zone.** This zone encompasses the generally fan-shaped delta of the Nile River with its apex at Cairo and continuing to increase in span to its terminus along the Mediterranean Sea. The eastern boundary of the zone conforms to the northwestern limit of the Eastern Desert zone as previously

described. The northern delta is defined by the Mediterranean Sea from Port Said to near Alexandria. From the Delta Barrage at Cairo and following west of the Nile River Rosetta branch, the western Delta zone boundary trends west parallel with the Nubariya Canal to Greater Alexandria. With the exception of high salinity surface soils in the coastal sector, essentially the entire delta zone is irrigated and intensely cultivated.

iii) **The Western Desert Zone.** Boundaries of this zone include a roughly spindle-shaped area with Cairo and Alexandria lying at the south and north points respectively. The eastern boundary conforms to the previously described west delta zone limit. Also previously indicated was the western zone boundary which constitutes the arbitrary western extent of the water resources region. This latter line generally parallels the desert highway between Cairo and Alexandria. Surface topography in the Western desert region is characteristically flat to low rolling, with only localized agricultural development and minor population centers.

b. Hydrologic Features. The natural hydrologic character of the subject region has historically been largely modified by manmade features. Obviously, the Nile River and its two major branches, the Rosetta and Damietta, are the most outstanding natural features of the region, but the network of irrigation and potable water supply canals are, perhaps, more important in Egypt than the natural water courses. Future urban development in the desert regions east and west of the delta will ultimately be dependent upon expansion of man-constructed waterway systems.

i) **Climate.** As with other locations in Egypt, the general climatic conditions become increasingly more benevolent from south to north. Cairo, at the apex of the region, experiences seasonal temperatures ranging from about 8.6°C to 34.5°C, with an average annual of 21.5°C. Alexandria, at the western extreme of the region and Port Said at the eastern, have average annual temperatures of 20.0°C and 21.5°C respectively. In the Eastern and Western Desert zones, the average annual temperatures rise to 22.5°C or higher depending on proximity to the delta. Humidity is also influenced strongly in the region with respect to relative delta location; the Delta zone having significantly higher humidity than the desert fringe areas to the east and west.

ii) **Rainfall.** Seasonal precipitation increases rather uniformly from south to north throughout the region. At Cairo, average annual rainfall is approximately 32 mm, while at Alexandria and Port Said the values are 180 and 71 mm respectively. Most rain occurs within the months of November and February, during which time locally heavy showers may result in temporary flooding in scattered sectors. Almost no rain falls during the hotter months of May through September.

iii) **Evaporation.** Potential evaporation, as may be expected, generally increases from north to south across the region, as well as with distance away to the east and west from the delta zone. Average daily evaporation at Cairo is about 6 mm, at Alexandria 4.5 mm, at Port Said 6.8 mm, at Ismailia (a short distance outside the Eastern Desert zone) 5.5 mm, and at Sadat City 8 mm. Potential annual evaporation throughout the region, therefore, ranges between 1,640 mm and 2,920 mm per year.

iv) **Surface Streams.** Flows along the Nile River from Aswan to near Cairo are largely controlled by releases from Lake Nasser at the High Dam. At the north of Cairo, water diversions are made to the Ismailia Sweetwater, Raiyah El Beheira and Raiyah El Tawfiki Canals. The two major surface streams crossing the region — the Rosetta and Damietta branches of the Nile — are controlled at the Delta Barrage near El Qanatir El Aqhiria about 20 km north of Cairo. From that point, numerous secondary and tertiary canals web out over the delta. A simplified schematic of the major canals is depicted in Map I-12. Most canals are directed into the Delta zone, but some touch or cross the Western and Eastern desert zones. Under current conditions of seasonal controlled releases of Nile waters, between 80 and 150 million cubic meters of water pass Cairo into the Delta area each day. After use of the water in the Delta, return irrigation tail waters and surplus waters are channeled to the Mediterranean Sea, saline estuarial lakes or eastward to the Suez Canal. Outflows for 1972 through 1978 are listed in Table I-29.

c. Water Resources.

i) **Rainfall and Surface Runoff.** Rainfall and surface runoff, exclusive of Nile sources, are generally of little importance in the overall water resources regime of the region. The rainfall, as low as it is, does provide a modicum of water to irrigation and some individual residence cisterns. Surface runoff is usually all captured by ditches or other minor diversion structures

TABLE I-29
HISTORIC INFLOW-OUTFLOW BALANCE FOR NILE WATER

Item	Calendar Years 1972	1973	1974	1975	1976	1977	1978
	(volume of water in 1,000 million m³) 1/						
INFLOW							
Measured at Gaafra	54.7	55.9	54.9	53.0	54.0	57.9	62.0
ESTIMATED OUTFLOWS							
Drainage to lakes and seas	16.0	16.0	16.0	14.9	15.9	13.5	14.8
Edfina Barrage	3.5	2.8	3.5	3.7	4.5	7.6	11.8
Enane.a & West Spillways	0.3	0.3	0.2	0.1	0.2	0.2	0.2
INFLOW -- OUTFLOW	34.9	36.8	35.2	34.3	33.4	36.6	35.2

1/ Billion or 10^9 cubic meters

SOURCE: Masterplan for Water Development and Use, Second Interim Report, UNDP, IBRD, 1979.

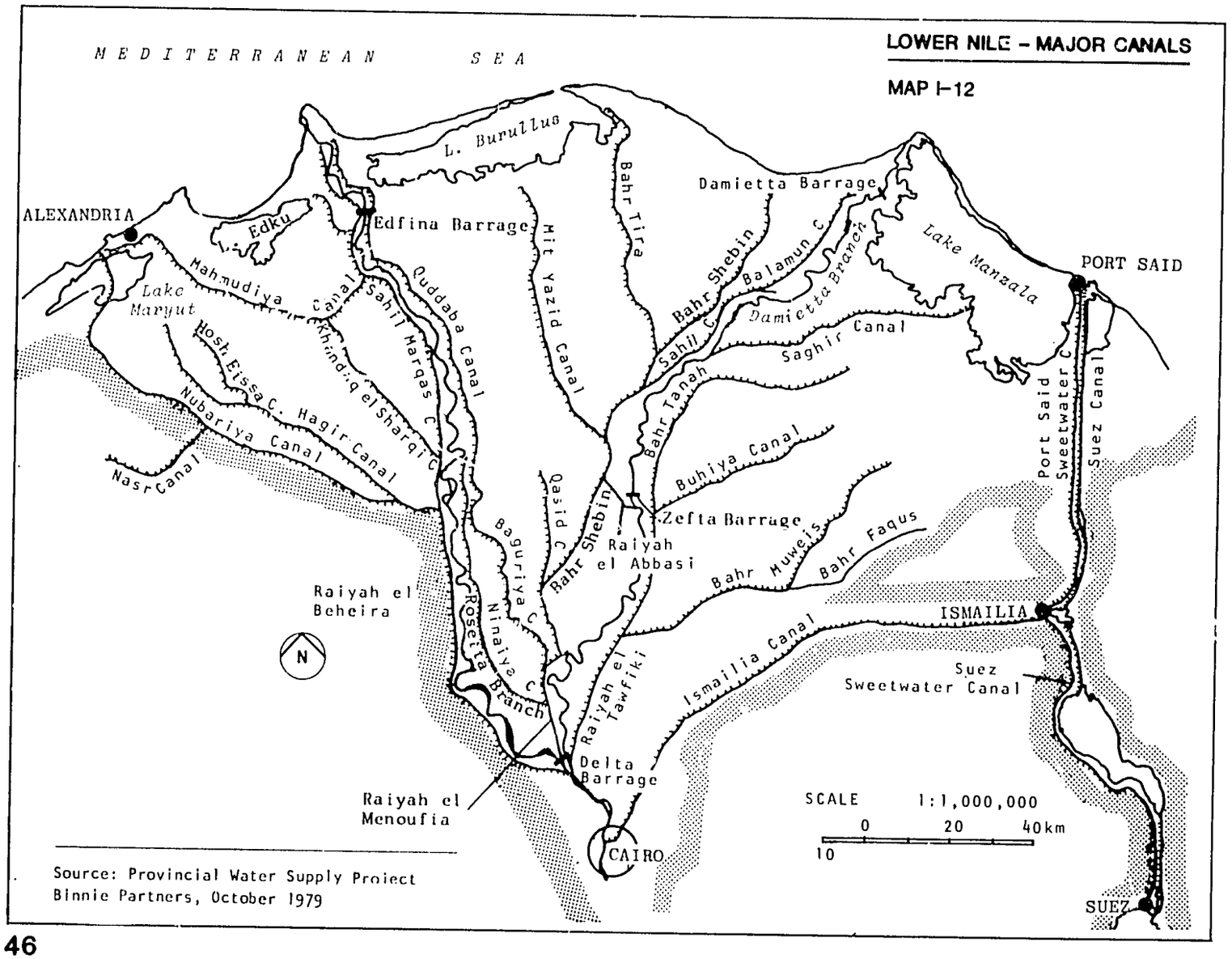
World Bank, Arab Republic of Egypt Irrigation Subsector Review, 1981.

used primarily for irrigation and directed either to cultivated fields or major drainage networks of the Delta. Both rainfall and surface runoff in the Eastern and Western Desert zones are, for the most part, lost to evaporation or, to a minor extent, percolate to shallow underlying ground water bodies.

ii) **Ground Water.** In the Eastern and Western Desert zones of the region, ground water resources are questionable with respect to both quantity and quality. By contrast, the Delta zone contains vast quantities of useful ground water, but is limited by quality considerations in its northerly sector. (Maps I-13 and 14) As the zones have differing ground water regimes, each is discussed independently below.

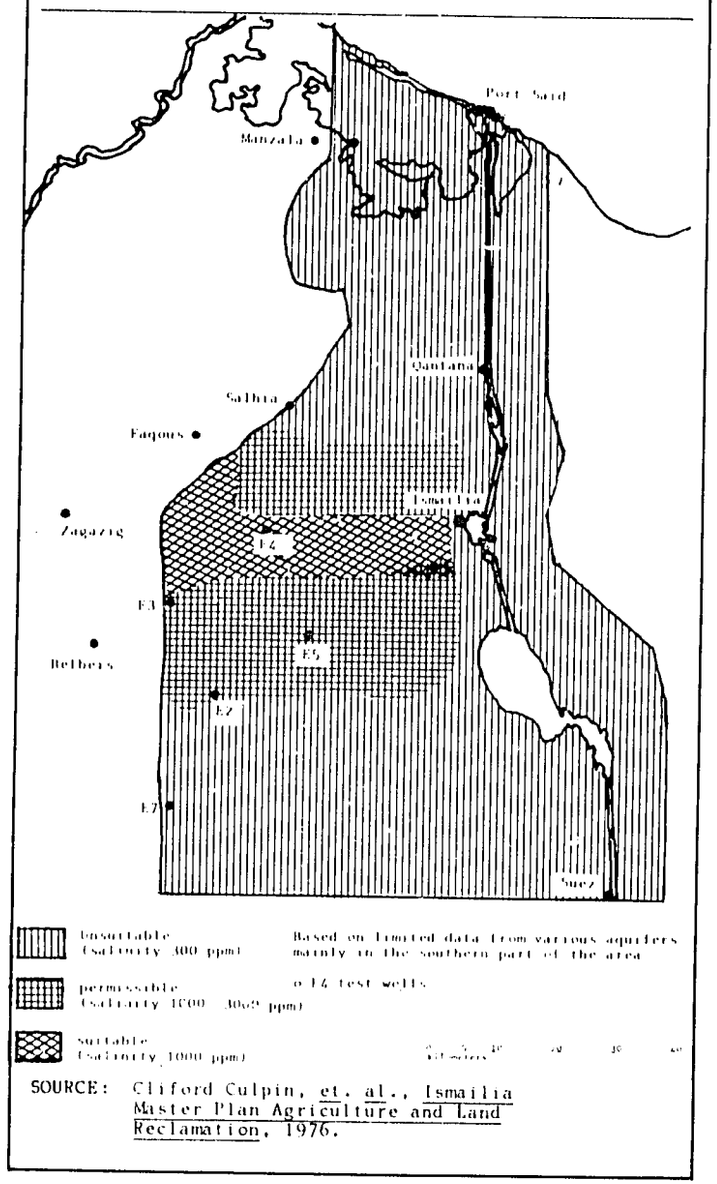
- Eastern Desert:

This zone can be described as a ground water poor area. The southern portion, in the vicinity of the table lands, is typically a low well production, poor quality water area. Further to the north, the Miocene through Quaternary aquifers characteristically are moderate to poor water bearing zones with relatively poor water quality (1,000-3,000 mg/TDS). Only in a narrow belt between Zagazig and Ismailia, parallel to and including the Ismailia Sweetwater Canal, does there exist a sector of reliably good water quality. (Map I-13)



Source: Provincial Water Supply Project
Binnie Partners, October 1979

MAP I-13
GROUND WATER POTENTIAL OF THE EASTERN DESERT ZONE OF THE NILE DELTA REGION

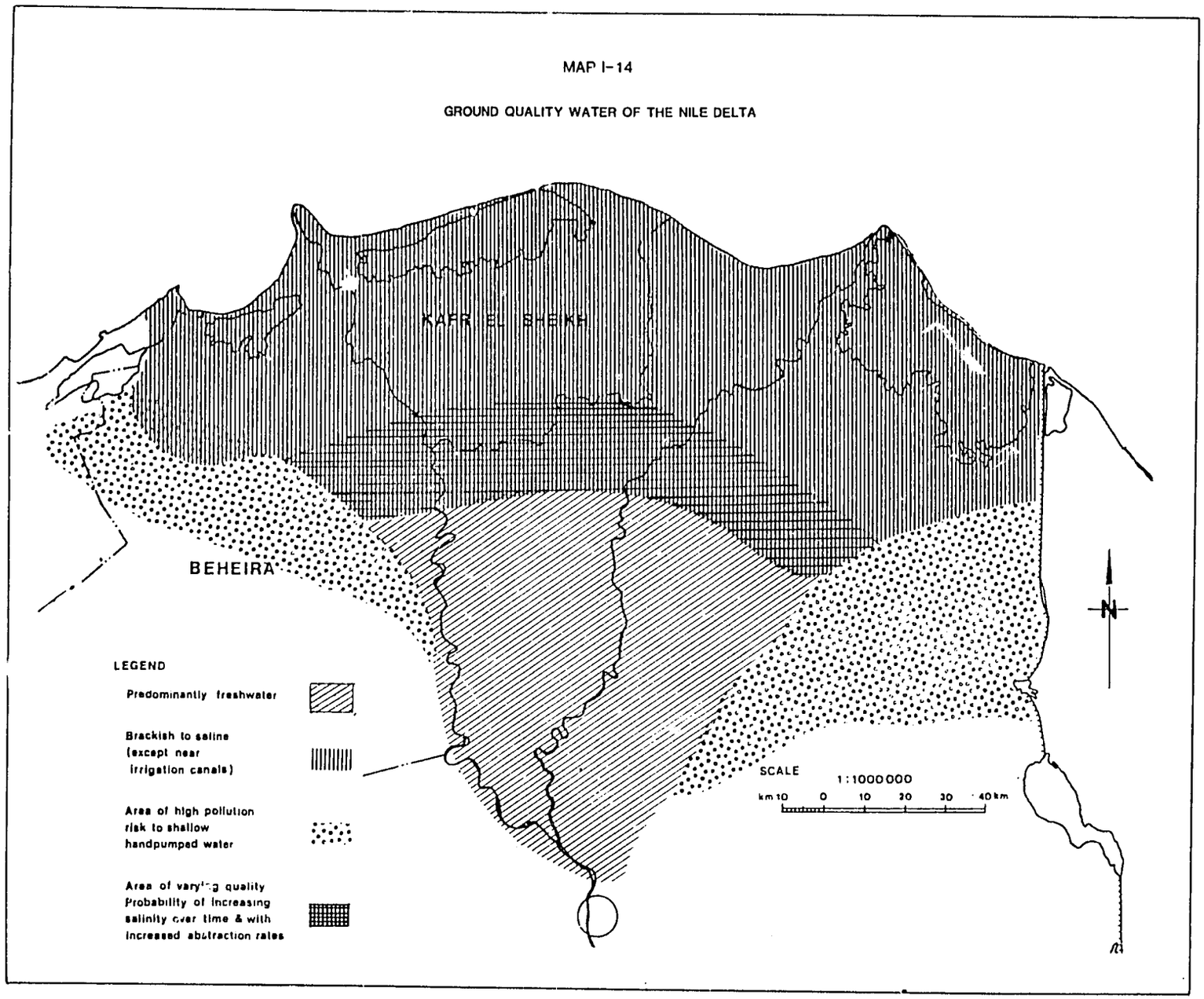


SOURCE: Clifford Culpin, et. al., Ismailia Master Plan Agriculture and Land Reclamation, 1976.

- The Nile Delta:

Within the alluvial aquifers underlying the Nile Delta resides a substantial ground water resource, and there is a wealth of information concerning the water bearing characteristics of these aquifers. In the context of this report, it is only possible to discuss the most salient features of water resources related to those major aquifers.

From aspects of both water quantity and quality, the most important area underlain by the Delta aquifer is between Cairo and El Mahalla El Kubra and following a northern map line from Faqous on the east to near Damanhour on the west. North of that line, the quality of ground water becomes increasingly saline. Along a zonal band extending about 10 km south of the same line, water quality is questionably fresh to brackish. (Map I-14)



Regional hydraulic continuity reportedly exists within the major (deeper) aquifer which is generally confined by a clay cap aquitard varying in thickness from 6 to 25 meters. A shallow localized unconfined aquifer is also present within the regional delta that overlies the clay cap. This aquifer usually reaches thicknesses of only a few meters.

The major deeper confined aquifer attains depths of about 300 meters; however, water quality becomes increasingly questionable with increased depth. Forebay areas (unconfined recharge zones) of the major aquifer are thought for the most part to lie along the most northern, eastern and western periferal sectors of the Delta.

Peizometric levels in the deeper confined aquifer are below ground surface throughout the southern and central portions of the Delta. In approximately the northern one-third of the Delta artesian levels cause upward water movement through the clay cap causing saturated and high salinity conditions in near surface soils.

Quality degradation from return irrigation water and other sources is of continuing concern throughout the Delta. Many active programs are underway to monitor, control and protect ground waters of the Delta from impairment from both contaminated surface water and encroachment of poor quality ground water. Representative quality of deep well water in four areas of the Delta are listed in Table I-30.

Aquifer storage of fresh water in the Delta has been calculated to be on the order of 500 million m^3. Approximately 100 high-capacity wells, producing in excess of 1,000 m^3 per hour, have been identified by the Ministry of Irrigation to be constructed in the deep aquifer. More than 1,000 wells producing between 35 and 350 m^3 per hour have also been located. The relatively high production of the former wells attest to the excellent hydraulic character of the major delta aquifer system as listed in Table I-31.

Additional high capacity wells are planned to be constructed by the larger Delta municipalities and irrigation production is anticipated to increase by 4 million m^3 by year 2000.

It can be safely stated that the vast fresh ground water resources of the Nile Delta can effectively support any urban development plan formulated for that area (exclusive of irrigation) through the year 2000. Ground water resources are not a constraint to urban development where potable water underlies the area.

- The Western Desert Zone:

The planning of Sadat City (which is located in the northern sector of this region) has resulted in updated interpretations of underlying ground water resources.[4] Significant thicknesses of the Delta aquifer reportedly extend as far west as the Cairo-Alexandria road near Sadat City. Original planning estimates predicted ground water resources were locally available to support city growth to 1,000,000 people. Subsequently, in 1979, three water wells were constructed to depths of about 80 meters and tested to produce 3,000 m^3 per hour each. Planning of the city water supply now also includes imported water from the Nile.

The transmissivity of the aquifer(s) beneath the Western Desert region probably becomes increasingly reduced from Sadat City toward Alexandria, as the sediments on the fringes of the Delta and toward the sea become finer. Additionally, water quality deteriorates northward to non-useful levels near Hosh Isa, about 15 km north of latitude 31. On the basis of available information, it is considered doubtful that ground water in reliable quantity and quality can be developed south of Sadat City to provide water supplies for development. A combination of ground and imported water is, however, obtainable which could support populations of 250,000 or greater.

- Nile River Water:

Currently, the Nile provides for the bulk of requirements in the region. A vast reservoir of information quantifying the various uses and locations of use of this water is available. For purposes of urban development alone, it can be said that Nile River water can be made available to supply any concentrated population plan desired in the Delta region. From new cities such as Tenth of Ramadan to expanded urbanization at Tanta (for example), there are no water resources constraints on development. Only the economic and political commitments to construct transmission and delivery facilities from existing Nile River streams to desired locations are required. Quality analyses of Nile River waters of five locations on the Delta are shown in Table I-32.

TABLE I-30
GOWP DEEP WELL WATER QUALITY ANALYSES

Location	Ganang Fuwa System	Sarawa Fuwa System	Gianaclis Abu Hummus System	Hosh Isa Abu Hummus System
Reference Number		1	9	2
Date	12.4.79	12.4.79	3.4.79	3.4.79
Appearance	Clear & Bright	Clear & Bright	Clear & Bright	Clear & Bright
pH value	7.6	7.5	7.7	7.75
Color - °Hazen (filtered)	LT 5	LT 5	LT 5	LT 5
Turbidity - (JTU)	1.0	0.4	LT 1	LT 1
Conductivity -- umhos/cm^3	1,250	1,500	1,700	1,900
Total alkalinity -- ($CaCO_3$)	420	214	244	400
Carbonate hardness -- ($CaCO_3$)	366	214	244	146
Non-carbonate hardness -- ($CaCO_3$)	Nil	226	58	Nil
Total hardness -- ($CaCO_3$)	366	440	302	146
Calcium hardness -- ($CaCO_3$)	234	256	128	68
Magnesium hardness -- ($CaCO_3$)	132	184	178	78
Free carbon dioxide -- (CO_2)	19	14	9	14
Chloride -- (Cl)	404	392	236	226
Sulphate -- (SO_4)	35	58	290	300
Nitrate -- (NO)	0.5	5.1	0.95	0.2
Free ammonia -- (N)	1.35	0.22	LT 0.02	LT 0.01
Total iron -- (Fe)	0.24	0.05	0.04	0.05
Total manganese -- (Mn)	1.25	0.02	0.06	0.06
Oxygen absorbed -- (4 hrs/27°C)	0.8	0.8	LT 0.1	LT 0.1
Total coliform -- (MPN/100 ml)	2	0	0	0
Faecal coliform -- (MPN/100 ml)	0	0	0	0

LT = Less Than
Chemical results in mg/l.
Analyses by BTE.

SOURCE: Binnie and Partners, et. al., Provincial Water Supplies Project, 1979.

TABLE I-31
AVERAGE VALUES OF HYDRAULIC PARAMETERS
K AND S OF NILE DELTA AQUIFER

Location	Date of Test	K m/day	Storativity S	Method of Calculation
Abu-Hammad station	1958	195	--	Equilibrium eq.n (Theim)
Abu-Hamaad station	1958	326	4.2×10^{-4}	Non-equilibrium eq.n (Thies)
Shebin El-Kom station	1958	168	--	Equilibrium eq.n (Theim)
Shebin El-Kom station	1958	124	2.5×10^{-3}	Non-equilibrium eq.n (Thies)
East of Delta	1958	540	--	Mechanical analysis (Hazen)
Middle of Delta	1958	570	--	Mechanical analysis (Hazen)
West of Delta	1958	350	--	Mechanical analysis (Hazen)
Bahr Shebin stations	1961	115	--	Equilibrium eq.n (Theim)
East of Delta	1961	145	--	Mechanical analysis (Hazen)
Middle of Delta	1961	196	--	Mechanical analysis (Hazen)
West of Delta	1961	427	--	Mechanical analysis (Hazen)
Middle of Delta stations	1962	142	--	Equilibrium eq.n (Theim)
West of Delta stations	1962	66	--	Equilibrium eq.n (Theim)
East of Delta	1962	320	--	Mechanical analysis (Hazen)
Middle of Delta	1962	175	--	Mechanical analysis (Hazen)
West of Delta	1962	360	--	Mechanical analysis (Hazen)
Pumping station #5	1969	52	--	Equilibrium eq.n (Kozeny)
Pumping station #5	1969	50	7.9×10^{-3}	Non-equilibrium eq.n Thies)
Pumping station #5	1969	28	5.3×10^{-3}	Leaky aquifer (Hantush)
Pumping station #39	1969	23	3.85×10^{-3}	Leaky aquifer (Hantush)
Pumping station #44	1969	38	6.1×10^{-3}	Leaky aquifer (Hantush)
Pumping station #36	8/76	126	1.9×10^{-4}	Non-equilibrium eq.n (Thies)
Pumping station #37	11/76	73	1.5×10^{-4}	Non-equilibrium eq.n (Thies)
Pumping station #51	2/78	76	--	Equilibrium eq.n (Theim)
Pumping station #51	2/78	78	1.2×10^{-3}	Non-equilibrium eq.n (Thies)
Pumping station #51	2/78	76	1.2×10^{-3}	Leaky aquifer (Walton)
Pumping station #12	10/78	131	--	Equilibrium eq.n (Theim)
Pumping station #12	10/78	126	1.35×10^{-3}	Leaky aquifer (Walton)
Pumping station #98	12/78	117	2.1×10^{-4}	Non-equilibrium eq.n (Thies)
Pumping station #98	12/78	114	3.1×10^{-4}	Leaky aquifer (Walton)
Abu-Hammad station	3/79	153	--	Leaky aquifer (Streltsova)
Abu-Hammad station	3/79	189	--	Leaky aquifer (Jacob)
Shebin El-Kom station	3/79	54	--	Leaky aquifer (Streltsova)
Shebin El-Kom station	3/79	98	--	Leaky aquifer (Jacob)

SOURCE: Binnie and Partners, et. al., Provincial Water Supplies Project, 1979.

e. Summary. The Nile Delta and Vicinity Water Resources Region in general is considered a water rich area from the view of potential urban development. Large sectors of the Delta zone and Western Desert zone have vast highly productive ground water resources. In essence, the entire province can draw upon Nile River water for concentrated urban development (exclusive of large irrigation projects) to provide potable water demands through canal or pipeline systems. Water resources are not considered a constraint to urban development in any but a few small areas of the total region.

Table I-33 summarizes water resources in the region and Table I-16 relates these resources to potential urban development to year 2000.

7. Middle and Upper Nile Water Resources Region V

a. General. The Middle and Upper Nile region, as defined in this report, extends from Cairo southward to the Aswan High Dam along the Nile River Valley. Additionally, the El Fayoum area is included since that large irrigated area derives its water supplies from Nile resources. Irrigated farmlands within the region are very productive and rival those at the Delta. Other than the El Fayoum sector, essentially the entire region lies within the Nile River Valley. Approximately 2.3 million feddans are currently cultivated along the Aswan-Cairo length (900 km) of the Nile. There is potential for an additional 0.28 million feddans of agricultural lands throughout the region. Because the Nile flows perennially and continuously throughout this valley, it is obvious that river waters will provide the overwhelming majority of water requirements as they have for millenia.

b. Hydrologic Features. The most significant hydrologic feature within the region is the Nile River. It is the environmental "lifeline" which turns an otherwise barren desert land into a productive, inhabitable garden.

i) **Climate.** Annual mean temperatures throughout the region increase southward from about 21.5°C at Cairo to 24°C at Qena, then to a maximum at Aswan of

27°C. Although the Nile River and adjacent irrigated areas tend to increase localized humidity, locations a short distance east and west of the river are typically hot and very dry.

ii) **Rainfall.** Rain is sparse along the Nile between Cairo and Aswan. From Cairo to Minia, average annual rainfall is reduced from about 32 mm to 5.3 mm. South of Minia to Aswan, average annual rainfall is generally less than 5.0 mm. Rainfall contributions to the Middle and Upper Nile can be considered as insignificant in the water supply regime.

iii) **Evaporation.** Evaporation increases as temperature rises between Cairo and Aswan. At Cairo, average yearly daily evaporation is 2.3 mm while at Aswan it is 15.4 mm. The southward increase generally corresponds to the regional decrease in rainfall as shown in Table I-34.

iv) **Surface Streams.** Natural perennial streams, other than the Nile, are non-existent in the area. Only intermittent wadi streams are present and these rarely flow. Surface stream runoff to the Nile is not considered to be of any significance.

c. Water Resources. The Nile River is the dominant resource for both surface and ground water supplies; the former being by far the more important.

i) **The Nile River.** Flows in the Nile River can be controlled, due to the completion of the Aswan High Dam in 1970, and a system of reliable water management is being instituted. Efforts toward refining this extremely complex activity will necessarily continue for many years.

Lake Nasser, the storage and regulatory reservoir formed by the construction of the High Dam, has a total water storage design capacity of 164 billion m^3. In accordance with agreements signed in 1959 between Egypt and Sudan, this storage is allotted as follows:

Use and/or Purpose	Billions m^3
Dead storage	30
Flood storage	37
Conservation storage	97
Total	164

Distribution and reservoir losses based on average annual supply are as follows:

Distribution/Loss	Billions m^3
Evaporation and leakage	10.0
Sudan production	18.5
Egypt production	55.5
Total	84.0

TABLE I-32
WATER QUALITY IN THE RIVER NILE -- ROSETTA BRANCH, 1979

Location	Shubra Khit	Mahallet Abu Ali	Disuq Treatment Plant Intake			Fuwa Treatment Plant Intake		Infina
Date Sampled	15.3.79	20.3.79	7.3.79	21.3.79	24.1.79	7.3.79	20.3.79	12.4.79
pH value	7.65	7.55	7.7	7.75	7.85	8.0	7.8	7.95
Color -- °Hazen 0.45 u filtered	8	7	8	5	7	8	5	7
Turbidity JTU	22	8.5	6	5	18	6.5	6	6.10
Conductivity us/cm at 20°C	360	400	320	410	360	325	390	510
Suspended solids (dried at 105°C)	25	18		13	50		18	8
Total alkalinity ($CaCO_3$)	140	150	140	152	150	136	144	168
Total hardness ($CaCO_3$)	132	130	132	130	130	132	134	156
Calcium (Ca)	28	31.2	28.6	32.8	31.2	28.8	34.4	37.6
Magnesium (Mg)	14.9	13.0	14.4	11.5	12.5	14.4	11.5	14.9
Chloride (Cl)	36	36	22	27	30	22	30	40
Nitrate (N)	0.5	0.75	0.9	0.65	0.3	0.6	0.7	0.80
Ammociacal nitrogen (N)	0.56	0.46	0.20	0.50	0.3	0.5	0.36	0.38
Oxygen absorbed (4 hrs @ 27°PC)	1.8	1.0	2.0	1.3	1.9	2.2	0.8	1.4
Iron (Fe)	0.50	0.50	0.32	0.24	0.28	0.12	0.20	0.35
Manganese (Mn)	0.10	0.08	0.16	0.03	0.07	0.10	0.04	0.03
Lead (Pb)					LT 0.02			
Cadmium (Cd)					LT 0.005			
Copper (Cu)					0.03			
Mercury (Hg)					LT 0.0005			
Zinc (Zn)								
Chromium (Cr)					0.05			
Arsenic (As)					LT 0.0005			
Ortho-phosphate (P)	0.09			0.13			0.09	0.11
Reactive silica (SiO_2)								8.0
Total coliform MPN/100 ml	400	800		2,600			1,600	

Chemical results in mg/litre.
All metal results are for total metals.
LT = Less Than,
Analyses by BTE.

SOURCE: Binnie and Partners, et. al., Provincial Water Supplies Project, 1979.

TABLE I-33
SUMMARY OF WATER RESOURCES CONDITIONS
NILE DELTA VICINITY - PROVINCE IV

	Province Wide	REGION 1 Eastern Desert Region	REGION 2 Nile Delta Region	REGION 3 Western Desert Region	Comments
I. GENERAL					
A. Climate type	Modified low desert.	Low desert.	Delta desert.	Low desert.	Delta modified by irrigation and canals
B. Rainfall (mm/yr)	32-180 averages.	32-100 averages	30-180 averages	30-70 averages	Rainfall decreases Alexandria to Cairo
C. Surface area (km^2)	28,600 total.	8,200	18,800	1,600	
D. Evaporation (mm/yr)	Potential 1,640-2,920.				Increases north to south.
II. WATER RESOURCES					
A. Surface water					
1. Quantity	Nile River canal system. Abundant to year 2000.	Via Ismailia Canal (1)	Via Delta network (1)	Via Nubariya Canal (1)	(1) Quantities determined by national policy
2. Quality	170-400 mg/l TDS throughout	(2)	(2)	(2)	(2) Dependent on withdrawal location.
3. Development potential	Very good within province.	Good.	Excellent.	Good.	Related to urban development only.
4. P.C. relative cost to develop	Low to moderate within province.	Moderate (3).	Low.	Moderate (3).	(3) Costly transmission facilities may be required for large populations.
B. Groundwater	Amount varies with region.				
1. Aquifer	Nile Delta alluvium.				Both shallow and deep aquifers.
a) Location	Primarily delta region	Not present.	Throughout region	In southeast sector.	
b) Quantity	500 millard m^3 storage	N.A.	95% in this region	5% in this region	(4) Quantity distribution approximated
c) Quality	Good to poor.	N.A.	500-1,400 mg/l TDS	800-1,500 mg/TDS	Poorer water quality with depth, poor to saline quality in northern delta sectors.
d) Development potential		N.A.	Excellent	Fair	
e) Relative cost PC to develop	Low to moderate PC/region	N.A.	Low for potable uses.	Moderate for all uses.	
2. Aquifer	Plio-Pleistocene and older zones				Other than Nile Delta alluvium.
a) Location	Areas east and west of delta	Throughout region.	Extreme eastern area.	Western sector.	
b) Quantity	Small quantities. throughout.	Less than 10 L/S wells.	insignificant source.	Less than 20 L/S wells.	Usually unreliable as resource.
c) Quality	Usually marginal to poor quality.	1,000-3,000 mg/l TDS (5).	3,000+ mg/l TDS	Poor to saline	(5) Best quality parallels Ismailia Canal.
d) Development potential	Poor potential throughout.	Poor.	Poor.	Poor.	Unsuitable for urban development use.
e) Relative cost PC to develop	High PC/region	High	High	High	Probably unfeasible for urban source.
C. Imported Water	Not required in province.	N.A.	N.A.	N.A.	
D. Other					
1) Demineralization	Not required in province.	N.A.	N.A.	N.A.	
2) Wastewater reclamation	Useful qualities possible for localized irrigation.	Fair potential	Good potential	Good potential	Requires treatment of sewage from concentrated population areas.
3) Irrigation conservation	Good potential throughout province.	Good potential	Good potential	Good potential	Improved irrigation practices can result in large quantities of useful agricultural water resources.

SOURCE: NUPS.

TABLE I-35
WATER CONSERVATION PROJECTS IN SUDAN

Project	EGYPTIAN WMP Year of Completion	EGYPTIAN WMP Estimated Incremental Benefit $10^9 m^3$	SUDAN WMP Proposed Year of Completion	SUDAN WMP Estimated Incremental Benefit $10^9 m^3$	Difference[1] in Incremental Benefit $10^9 m^3$
1. Johglei Phase I	1985	2.30	1983	2.13	+ 0.17
2. Machar Marshes	1990	2.30	1992	1.80	+ 0.50
3. Johglei Phase II	1995	2.20	1997	1.91	+ 0.29
4. Bahr El-Ghatal	2000	2.53	--[2]	--[3]	--

[1] Water benefits estimated by Egyptian WMP are higher as compared to those in Sudanese Plan.

[2] Sudanese Plan does not schedule implementation of Bahr El-Ghatal Project in development plan through year 2000.

[3] Sudanese Plan provides no estimate of incremental water benefits.

SOURCE: World Bank, Arab Republic of Egypt Irrigation Subsector Review, 1981.

TABLE I-34
IRRIGATION SUBSECTOR REVIEW
Allocations of Nile River Mean Year Inflow of Aswan

Description	Prior to Aswan High Dam ($10^9 m^3$)	After Aswan High Dam[1] ($10^9 m^3$)
1. A.R.E.	48.0	55.5
2. Sudan	4.0	18.5
3. Wasted to Sea	32.0	--
4. Evaporation Loss	--	10.0[2]
TOTAL	84.0	84.0[3]

[1] According to 1959 Nile Water Agreement between A.R.E. and Sudan.

[2] Estimated losses from Aswan Reservoir.

[3] Mean year inflow.

SOURCE: World Bank, Arab Republic of Egypt Irrigation Subsector Review, 1981.

Actual inflow to Lake Nasser, as measured at Gaafra for 1972 through 1978, is listed in Table I-29. Currently, planning is underway by the Egypt-Sudan Permanent Joint Technical Commission of four projects to increase the yield of Lake Nasser. The projects are:

Year	Project	Planned Yield
1985	Johglei I	2.3 billions m^3
1990	Machar	2.3 billions m^3
1995	Johglei II	2.2 billions m^3
2000	Bahr-El Ghatal	2.6 billions m^3
	Total	9.4 billions m^3

With this projected increase, it is expected that total yield of Lake Nasser in year 2000 will be about 93.4 billion m^3 (including reservoir losses). The ultimate yearly Nile River water allotment to Egypt has been estimated to be as high as 65.3 billion m^3 (with all possible projects in place). This latter volume would be available at a future time beyond year 2000. Additional information regarding these future water conservation projects is listed in Tables I-34 and 35.

Currently, controlled seasonal river flows passing Cairo vary from about 80 to 150 million m^3 per day. Projected maximum per day demand for that city in the year 2000 is about 11.3 million m^3, or about 7.5 percent of present high flows. If it is assumed that releases from Aswan will be increased substantially by new projects such as Johglei, more water will pass Cairo in year 2000 than at present, even if new land projects along the Middle and Upper Nile are fully implemented. Considering the preceding facts and assumptions, as well as the knowledge that urban water supplies require only small quantities of water when compared to traditional irrigation, it is clear that until at least year 2000 the Nile River can provide water supplies for extensive urban development (exclusive of vast additional irrigation) within the region.

ii) **Ground Water.** The ground water basin which lies beneath and closely adjacent to the Nile Valley from Cairo to Aswan includes an area of about 2 million feddans. Water storage in this linear basin has been estimated at approximately 27 billion m^3. However, since the hydrologic balance of the Nile Valley alluvial aquifer is directly connected hydraulically with Nile surface flows, production from the aquifer is nominally the same as with-drawing water from the river. This is the case with the numerous shallow domestic and irrigation wells which exist throughout the Nile Valley. In essence, the valley aquifer is nothing more than a transmission medium for river surface resources.

Ground water movement, both influent and effluent, is also considered by many to occur within older formations bordering and underlying the alluviated river valley. The quantification of such ground water migration is very difficult and subject to many unknown factors. But given the character of the older formations and the many thousands of years the river has flowed, it is probable that a rather steady state has developed within formation aquifers adjacent to and in hydraulic continuity with the valley aquifer. If this equalibrium were to be modified by, for example, heavy water well production from the Nubian sandstone, additional infiltration would be induced from the Nile Valley into the older bordering sediments.

iii) **Water Quality.** The quality of water of both surface and ground water is generally good to excellent (200 mg/TDS) or less. Only in localized sectors where there are concentrated sources of contaminants such as industrial waste discharges or irrigation drainage return waters does quality degradation occur. Although serious quality problems are not known to persist within the Nile Valley, recommendations have been made by several agencies to establish a national water quality monitoring program to identify and assist in the correction of sources of quality impairment.

d. Summary. Given existing and projected water resources available to the Middle and Upper Nile, and in view of the quantities of water to be released at Aswan to satisfy national

TABLE I-36
SUMMARY OF WATER RESOURCES CONDITIONS
MIDDLE AND UPPER NILE PROVINCE V

	Province Wide	Comments
I. GENERAL		
A. Climate type	Low desert (river valley).	Modified by proximity to Nile River.
B. Rainfall	North to south range 32-5 mm/year.	Increases continuously from Cairo to Aswan.
C. Surface area	20,000 km^2.	
D. Evaporation	Potential ranges from 840-5,600 mm/year.	Increases continuously from Cairo to Aswan.
II. WATER RESOURCES		
A. Surface water	Nile River water only.	
1) Location	Total length of province along Nile.	
a) Quantity	55.5 milliard m^3/year flow currently available.	Year 2000, 65 milliard m^3/year.
b) Quality	Generally excellent throughout (200 mg/l TDS).	Urban development must consider potential degradation.
2) development potential	Excellent throughout province.	Quantities to be regulated by national policy.
3) P.C. relative cost to develop	Low throughout province.	Only gravity or short pipelines with low pumping lifts required from source.
B. Ground water	Abundant potential within province.	
1) Aquifer	Nile Valley alluvium.	
a) Location	Beneath Nile Valley.	Underlies area of 2,000,000 feddans.
b) Quantity	Contains 27 milliard m^3 water.	In hydraulic continuity with Nile surface water.
c) Quality	Similar to Nile River (2000 mg/l TDS).	
2) Development potential	Excellent throughout province.	
3) P.C. relative cost to develop	Low throughout province.	Can be inexpensive, treated potable urban supplies.
C. Imported water	Not required within province.	
D. Other		
1) Demineralization	Not required within province.	
2) Wastewater reclamation	Good potential throughout province, currently all wastewater and irrigation tail waters eventually return to the Nile.	Treated sewage from concentrated population areas can safely reclaim large quantities of water for refuse annually.
3) Irrigation water conservation	Good potential throughout province.	Improvement of irrigation practices can conserve substantial quantities of water annually.

SOURCE: NUPS Summary.

hydroelectric, navigation and irrigation demands within and downstream of the region, no apparent constraint to urban development exists with respect to water resources, between Aswan and Cairo. Future urban planning in the region will probably be regulated by factors such as economic feasibility, political decisions and natural physical conditions (soils, topography, accessibility, etc.).

Table I-36 summarizes water resources conditions in the region and Table I-16 relates water resources to potential urban development to year 2000.

8. Lake Nasser Water Resources Region VI

a. General. The Lake Nasser region, as defined in Map I-11, includes some 22,000 km^2 of Nubian plateau land between Aswan and the Egypt-Sudan boundary. Lake Nasser lies within and throughout the central-western sectors of the region. Little investigation of this area for suitability of development was found in historic references; however, the regional presence of the Nubian sandstone and proximity of Lake Nasser suggest potentially good water resources availability for future urban growth.

b. Hydrologic Features. The most obvious and significant hydrologic feature in the area is Lake Nasser. This artificial reservoir, formed by the High Dam at Aswan, is approximately 500 km in length from Egypt into Sudan. Total volume of the lake is some 162 billion m^3 of Nile River and tributary waters. Other than Lake Nasser, the region is an essentially barren plateau desert lying between 200 and 300 meters above sea level. Additional information relating to the High Dam and Lake Nasser is presented in Table I-37.

i) **Climate.** Harsh low desert climate is characteristic of the region. Little rain falls during most years and long periods of no rain are not unusual. Extremely low humidity is typical throughout the area, with the exception of the direct lake vicinity. Average annual temperature is 27°C with seasonal highs reaching 50°C, one of the hottest regions in Egypt.

ii) **Rainfall.** Average annual rainfall throughout the region is less than 5 mm, with the highest recorded daily precipitation of 5.5 mm at Aswan. Only on very infrequent occasions does enough rain occur to cause surface flows along wadi courses.

iii) **Evaporation.** Evaporation potential is very high, ranging to an average of 15.4 mm per day and above (5,600 mm per year). Lake Nasser itself is calculated to lose between 10 and 13 billion m^3 each year to evaporation alone.

iv) **Surface Streams.** Other than Lake Nasser, the former course of the Nile River, no perennial surface streams occur. Only intermittent wadi flows within the region.

TABLE I-37
THE HIGH DAM IN FIGURES

MEASUREMENT OF THE DAM	
Length at Crest	3,600 meters
Length of Part in River	520 meters
Length of Right Wing	2,325 meters
Length of Left Wing	755 meters
Max. Height above Bed Level	111 meters
Width at Crest	40 meters
Width at Base	980 meters
Vol. of Construction Materials	42.7 million m^3
River Bed Level above Sea Level	85 meters
Crest Level above Sea Level	196 meters
MEASUREMENTS OF THE RESERVOIR	
Max. Water Level of Reservoir	182 meters (above sea level)
Total Capacity	162 billion m^3
Dead Storage Capacity	30 billion m^3
Live Storage Capacity	90 billion m^3
Excess Flood Storage Capacity	37 billion m^3
Length of Reservoir	500 kilometers

SOURCE: J. Waterbury, Hydropolitics of the Nile Valley, 1979.

c. Water Resources. The Lake Nasser region is devoid of useful rainfall or surface water sources, with the exception of the lake. Only lake waters and possibly ground water have development possibilities for urban use.

i) **Lake Nasser.** Water for urban use is available in practically any quantity desired from the lake. For the most part such water would require pumping to locations at elevations above the lake surface as well as treatment to insure potability. Irrigation would, however, not require treatment as it is suitable in its natural state for most agricultural uses. Quantities of water produced from the lake for any use would be determined largely upon decisions of how impounded waters are to be allocated throughout Egypt. No local constraints on the quantity or quality of water available are apparent.

ii) **Ground Water.** Potential for ground water development appears to exist in the Nubian sandstone. Only very preliminary investigation has been conducted concerning this, but one such study calculated that seepage losses from the reservoir amount to about 2.9 billion m^3 each year. If such migration rates to the Nubian sandstone are verified, a substantial artificially produced aquifer could be forming in the Lake Nasser vicinity.

d. Summary. Although only a small amount of information is yet available regarding urban development possibilities in the Lake Nasser region, there appear to be no water resources constraints to development. Plans for developing 100,000 feddans of agricultural lands around Lake Nasser by year 2000 have been formulated. Abundant surface water and possibly ground water are locally obtainable to meet such agricultural demands.

Table I-38 summarizes water resources conditions in the region, and Table I-16 relates water resources to potential urban development to year 2000.

9. Eastern Desert Water Resources Region VII

a. General. The Eastern Desert region is herein defined as that area approximately bounded from the Egypt-Sudan border to Suez along the Red Sea, along the Cairo-Suez Highway to the East Bank of the Nile, southward along the eastern edge of the Nile Valley to Aswan and closing to the Egypt-Sudan boundary along the eastern limit of the Lake Nasser Water Resources region. This area encompasses a total area of about 200,000 km^2. (Map I-11)

b. Hydrologic Features. The Eastern Desert is considered to be an extension of the Western Desert across the Nile River Valley. Harsh, hot, arid climate prevails throughout the region, tempered only slightly in sectors near the Gulf of Suez, Red Sea and Nile Valley. The warmer areas of 25°C and higher exist in the southern sector of the region.

i) **Rainfall.** Rainfall, although usually slight, occurs predominantly during two periods — December through March and June through August. The regional rainfall pattern may be slightly influenced by orographic features, but in general averages between less than 2.0 to about 50 mm annually. Only in the most southern sector does precipitati . exceed 25 mm, while more than 80 percent of the region averages less than 10 mm annually.

ii) **Evaporation.** Evaporation data indicate a regional trend to higher values from Cairo southward. Daily evaporation at Cairo has been calculated to average 60 mm, while at Aswan 15.4 mm, or 2,226.5 and 5,621.0 mm annually, respectively. More temperate evaporation generally prevails along the Eastern Coastal Belt, but still averages on the order of 10 mm per day.

iii) **Stream Characteristics.** The only through-flowing perennial stream in the Eastern Desert area is the Nile River, which is not considered to be part of the Eastern Desert region.

Because of low rainfall and high evaporation factors, surface water flows in Eastern Desert wadis are infrequent. Plateau and tableland areas within the area have poor drainage features and wadi courses usually have moderate to high drainage gradients throughout. Consequently, large areas of the Eastern Desert have drainage features which are either not conducive to collection of regional runoff or, if collection occurs, streams discharge rapidly to the sea or Nile River. Further, most rock surfaces exposed are those of consolidated formations which offer poor percolation conditions, particularly to rapidly flowing, short flow duration streams.

c. Water Resources. Water resources, albeit rather meager, are available in forms of direct rainfall, surface runoff, ground water and imported water. In total, the currently developed resources can support only limited subsistence farming, nomad watering points, dry mining operations, small military facilities, individual and small institution domestic demands and small community systems. Opportunities for substantial water resources development are expected to be limited considering: 1) low regional rainfall; 2) high evaporation rates; 3) the geologic environment; and 4) costs and other constraints associated with importing water. Some very optimistic studies speculate that large replenishable quantities of ground water may be available from the Nubian Formation in the western half of the region. However, this theory is not supported by much factual information. With the exception of imported Nile River water, no water resources are currently known to exist in the proportions and with the reliability necessary for significant urban development.

TABLE I-38
SUMMARY OF RESOURCES CONDITIONS
LAKE NASSER PROVINCE VI

	Province Wide	Comments
I. GENERAL		
A. Climate type	Low desert.	Harsh dry climate.
B. Rainfall	Less than 5 mm/year.	
C. Surface area	22,000 km^2 (approximate).	
D. Evaporation	5,500 mm/year.	
II. WATER RESOURCES		
A. Surface water	Limited use -- high potential.	
1) Location	Lake Nasser.	
2) Development cost	Moderate.	Requires pipelines and pumping.
B. Ground water	Limited use--possible high potential.	
1) Aquifer	Nubian sandstone.	Near Lake Nasser.
2) Water quality	Excellent to good, 400 mg/l TDS (?).	Comparable to Laquietta Valley area.
3) Water quality	Potentially abundant.	Recharged by Lake Nasser.
4) Development potential	Good to excellent.	High capacity wells appear possible.
C. Imported water	N.A.	
D. Other	Not feasible.	

SOURCE: NUPS Summary.

i) **Rainfall and Surface Runoff.** Climate, rainfall and stream characteristics will continue to constrain the development of these resources as in the past. The reliability of such resources as water supplies varies from poor to nil.

ii) **Ground Water.** Ground water from shallow wells and springs have been used in the Eastern Desert for numerous centuries. However, for the most part, such sources were utilized only for watering points by nomadic people and their animal stock. Even today, sedentary irrigation plots are relatively rare and community water supplies are few. Investigations concerning water resources in the region are relatively few and often general in nature. This is probably attributable to both the unfavorable hydrogeologic character of the area and the difficulty involved in obtaining useful field information. Notable documents regarding the subject are as follows:

- Pavaloff, 1962, Ground Water in Egypt and Part of the Eastern Desert, Desert Institute.
- Shata, A., et al., Preliminary Report on Ground Water Resources of the Eastern Desert, Egypt, Ministry of Land Reclamation.
- Arab Society for Mining and Petroleum (ASMP), 1970, Seminar on Ground Water in Egypt, Vol. 3, The Eastern Desert.
- Ganoub, F., 1972, Water Resources between Suez and Raz Banas, General Petroleum Company.
- Norconsult A.S., and Middle East Consulting Office, Structural Plan for
- Pirard, F., 1980, Red Sea Governorate Regional Plan, Final Report, Assessment of Water Resources, A.R.E., Ministry of Development and New communities.

The latter report was drawn upon heavily in preparation of this document because of its comprehensive treatment and currency of information.

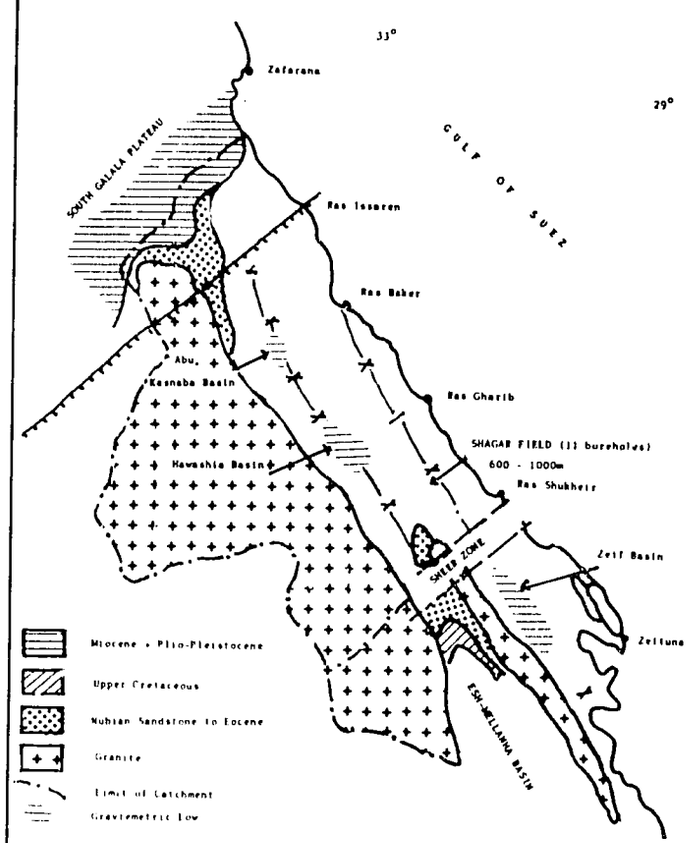
Limited ground water resources are known to be contained locally in most geologic regions and lithologic units in those regions. These resources vary greatly in quality (usually poor) and quantity (usually small). Hydrogeologic conditions in each geologic region are discussed in the following text.

- The Red Sea Coastal Belt Zone:

Hydrologic features in the Coastal Belt can be effectively divided into northern central and southern sub-zones (1, 2, and 3).

MAP I-15

NORTHERN COASTAL ZONE.

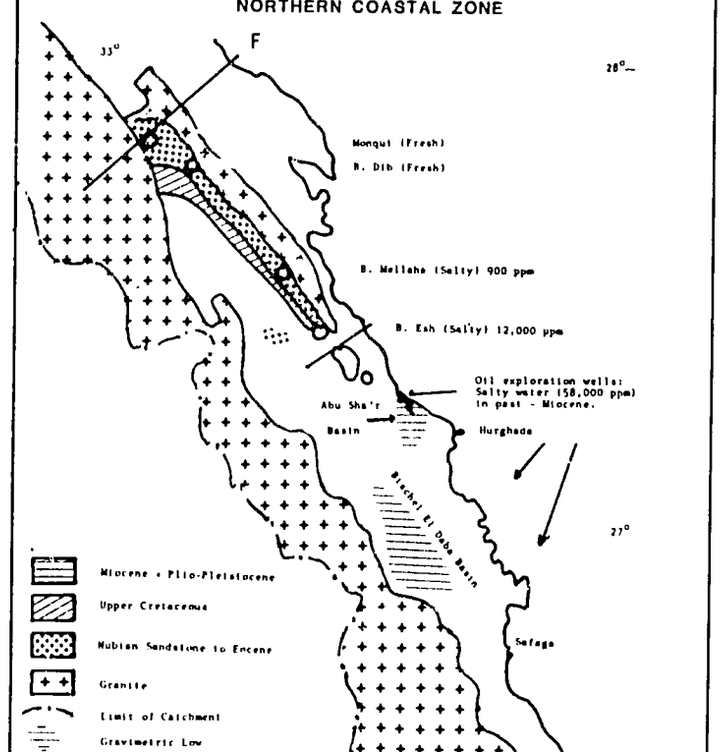


SOURCE: Pirard, F. et. al. Red Sea Governorate Regional Plan. Interim Report. 1980.

The Northern Coastal Sub-Zone (1) lies between Zafarana and Safaga and is within the highly tectonized sector of the Suez zone. (Maps I-15 and 16) Sedimentary rocks exposed at the surface include Plio-Pleistocene and Cretaceous through Eocene formations. Pre-Cambrian rocks also occur in localized outcrops. A few shallow hand dug wells exist in the northern sector, but these are most frequently used only for seasonal watering points for animals because of marginal production and poor water quality. In the southern sector, near Shagar, several deep wells penetrating Miocene and older formation aquifers have been constructed to depths of between 600 and 900 meters. Production from these wells is usually modest; however, one is known to pump approximately 5,000 m^3 per day. Produced well water quality is generally poor with a TDS range of 2,000-3,400 mg/l.

MAP I-16

NORTHERN COASTAL ZONE



SOURCE: Pirard, F. et al. Red Sea Governorate Regional Plan. Interim Report. 1980.

(Table I-39) Static water levels in the confined aquifers penetrated are about 70 m BGS or +30 m elevations. These deeper aquifer zones are associated with two faulted synclinal structures which parallel the Gulf of Suez shoreline.

The Central Coastal Sub-Zone (2) lies between Safaga and Ras-Abu-Awed where surface deposits of Plio-Pleistocene through Miocene persist. Synclinal structures in connection with the Coastal Belt finger inland into the Red Sea Range Basement Complex. (Map I-17) In this area the coastal plain narrows to 5 km or less in width, although associated synclines may extend as far as 35 km inland (Duwi Syncline). Several shallow watering point wells and at least two deeper bores exist in the Central sub-zone which has ground water and aquifer conditions similar to those of the northern. The quality of water derived from wells to date ranges from slightly brackish to saline (1,800 to more than 3,300 mg/TDS). (Table I-40)

In the Southern Coastal Sub-Zone (3), the coastal plain widens south of Quseir to near 25 km and again narrows, south of Ras Banas, to about 5 km on toward the Egypt-Sudan boundary. (Map I-18) Plio-Pleistocene deposits cover most of the coastal plain surface, but exposures of Miocene through Paleozoic rocks have not been noted. Pre-Cambrian Basement rocks may directly underlie the Plio-Pleistocene sediments throughout this area. As in the central and northern sub-zones, numerous shallow brackish watering points exist along the southern coast and two ancient Roman wells are known to exist in Wadi Kalalat which, in the past, reportedly supplied a population of 10,000 people. No newer deep wells are known to have been constructed in this South Coastal sub-zone.

Hydrogeologically, the entire Red Sea Coastal Belt can be classified as a water-poor region with only marginal potential for additional ground water development. From the standpoint of urban development, only small, isolated projects would appear feasible.

- The Red Sea Mountain Range:

This geologic region is, overall, comprised of a Pre-Cambrian Basement Complex of igneous

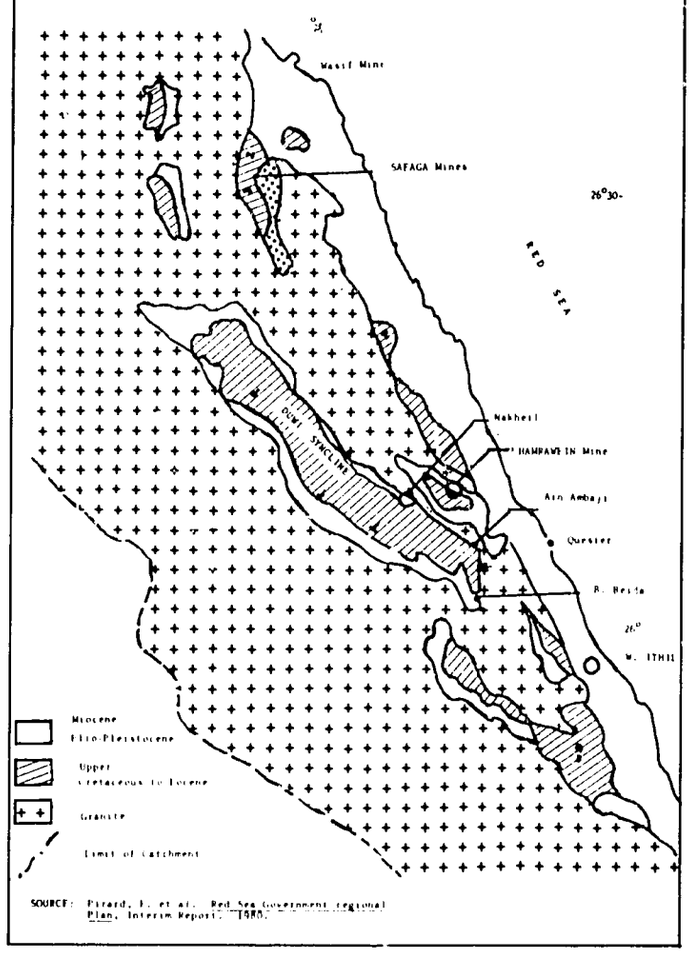
TABLE I-39
NORTHERN COASTAL ZONE WATER QUALITY

Name	Coordinates Long.	Coordinates Lat.	TDS	TH	TA	Ca	Mg	Na+K	Cl	SO_4	HCO_3	Fe	Remarks
Shagar n° 2			2,100	599	103	166	53	485	900	260	124	Tr.	GPC 1966
			2,076	573	92	152	47	530	800	257	112	0.06	GPC 06/1970
				pH: 7.8 -- Suspended iron: 28.94									
Shagar n° 3			1,708	750	500	140	97	355	887	275	61	----	GPC 1966
			2,120	593	116	162	46	562	922	286	142	0.06	GPC 1970
				pH: 7.65 -- Suspended iron: 9.94									
Shagar n° 4			2,260	690	116	186	55	538	965	280	142	0.06	GPC 06/1970
				pH: 7.6 -- Suspended iron: 1.30									
			3,000	710		188	58	756	1,451	205	122	0.9	GUPCO 1979
Shagar n° 5			2,340	380	148	101	31	613	823	576	180	0.24	GPC 06/1970
				pH: 7.5 -- Suspended iron: 0.96									
West Shagar			2,360	382	176	102	31	726	1,028	321	215		GPC 06/1970
				pH: 7.5									
			2,650	680		180	56	634	1,202	271	110	1.3	GUPCO 1979
Shagar n° 6			3,400	1,090		316	73	741	978	1,218	97	1.7	GUPCO 1979
Zafarana			4,900	1,080	110							0.4	Lab. of Desert Inst. 1965

SOURCE: F. Picard, et al, Red Sea Governorate Regional Plan, 1980.

MAP I-17

CENTRAL COASTAL ZONE



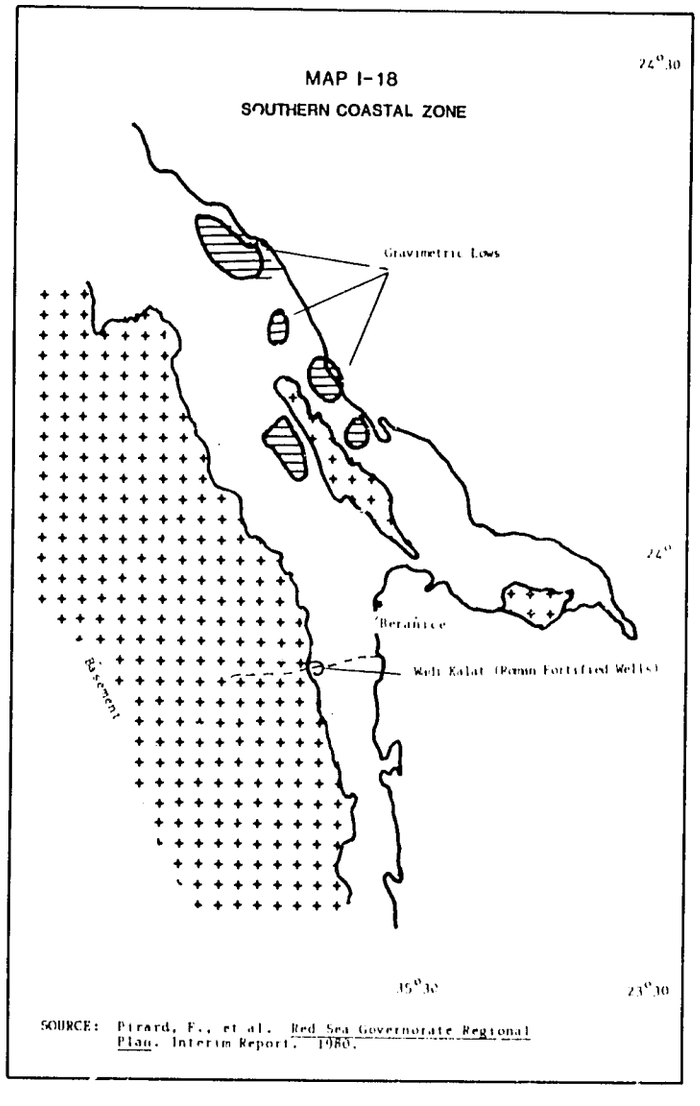
SOURCE: Picard, F. et al. Red Sea Governorate regional Plan, Interim Report, 1980.

and metamorphic rocks. Throughout the region, water potential is extremely poor and the possibility of significant ground water accumulation is essentially nil. Only a few minor springs, shallow wadi watering points and stream collection pools (qalts) exist, and these are largely unreliable supplies.

- The Galala Plateau — Wadi Araba Zone:

For descriptive purposes, this area can be hydrogeologically divided into three sub-zones: 1) the Southern Plateau; 2) the Wadi Araba Depression; and 3) the Northern Plateau. This zone is formed by a tectonically uplifted block of the Western Sedimentary Belt tablelands. The plateau is transected east to west by the eroded Wadi Araba horst block. (Map I-11)

The Southern Plateau Sub-Zone is a plateau feature, capped with Eocene limestone and underlain by Early Tertiary through Lower Cretaceous sediments. It is an uplifted portion of the Eastern Desert. Springs issuing from the flanks of the plateau, such as that at Saint Anthony Monastery and El Damal, constitute the most important existing ground water sources. The elevated nature, drainage characteristics and stratigraphic features of the Southern Plateau do not offer suitable conditions for accumulation and storage of significant ground water. Only at elevations beneath the base at the plateau would an environment conducive to ground water be present. Although it has not been verified, it is possible that a



SOURCE: Pirard, F., et al. Red Sea Governorate Regional Plan. Interim Report. 1980.

TABLE I-40
CENTRAL COASTAL ZONE WATER QUALITY

Name	TDS	TH	TA	Ca	Mg	Na	K	Cl	SO_4	HCO_3	Fe
COASTAL STRIP											
B. Quai	5,220			670	330	776	36.6	1,697	1,600 NO_3 10	143	
B. Quseir (Western Suburbs)	8,015			870	298	1,490	45.2	3,070	2,100 NO_3 10	110	
B.U. Barak	4,357			725	213	377	27.8	1,086	1,800 NO_3 10	73	
B. Safaga	4,812			555	68	1,030	21.0	1,938	1,040	110	
Ithil n° 1	1,800	540	140								0.2
Ithil n° 2	2,488	800	146								0.2
U. Gheig	9,456	3,618	58								0.9
Ain Ambagi (flowing spring)	6,852			872	195	1,260	30.5	2,575	1,800 NO_3 10	79	
B. Nakheil (water hole)	33,530			955	1,960	8,330	192.0	15,798	4,700	1,305	
HAMRAWE IN MINE											
Mine "E"	2,825			282	107	550	13.9	1,001	700 NO_3 10	165	
Mine "E"	2,494 2,462 2,325	(1974) (1971) (1969)									
Mine "B"	10,874	(1974)									
Safaga Mine	4,073			306	205	645	71.5	1,424	840	259	

SOURCE: F. Picard, et. al., Red Sea Governorate Regional Plan, 1980.

useful Nubian Sandstone aquifer may be present at depth (1,500-2,000 m) beneath the plateau surface. Only token water quality information is available in the Southern Plateau, but the data suggest that ground water would range from about 1,600 mg/l and higher TDS, brackish levels.

The Wadi Araba Depression Sub-Zone transects and separates the Northern and Southern Galala Plateau Zones along faults which bound the eroded Wadi Araba horst structure on the north and south. This 10-15 km wide uplifted and subsequently eroded block effectively forms a broad pass (maximum elevation 250 m) between the Red Sea Coastal Belt and the Eastern Desert Regions through the Galala Plateau. Block uplift and erosion has resulted in exposure of Lower Cretaceous (Nubian) and Carboniferous formations on the depression surface. Potential for developing water resources from Nubian and Carboniferous aquifers lying beneath the depression has been recognized and exploration is underway to assess such resources. On the basis of numerous shallow wells known to exist in the area, it is anticipated that water quality will be poor within most Wadi Araba aquifer sections.

The Northern Plateau Sub-Zone hydrogeologic characteristics are similar in most respects to the Southern Plateau. Climate, elevated surface conditions, poor drainage features and stratigraphic position do not provide an environment favorable for ground water. Toward the northern sector of the plateau, erosional valleys (probably structure related) become increasingly frequent. Plateau surface elevations are gradually reduced until they merge with the Western Sedimentary zone then disappear south of the Nile Delta. Along the wadi courses which disect the Northern Plateau (probably fault oriented), shallow watering points exist and a few deeper bores have been drilled. Although some studies indicate ground water to be present in quantity within deeper aquifers underlying the wadi courses and the lower elevation areas to the north, such waters are most frequently of brackish to saline quality. Preliminary planning has been done (Norconsult-MECO) for potential development projects in the Wadi Hagul-Bir Udeib — Wadi Ghuweibba sector along the Gulf of Suez. Such schemes rely for the most part on imported Nile River waters via pipelines from Suez or other overland routes from the Nile. Project considerations have also included desalination of brackish ground water. Several shallow test bores were drilled during the course of these studies in potentially water bearing Miocene sediments associated with graben structures. One well at Ain Sukh penetrated to a depth of 150 m and was tested to produce 2,000+ m^3 per day. Water quality in all wells tested was determined to be good to brackish (1,000-3,000 mg/l). Again, ground water in reliable quantity and of quality suitable for concentrated urban development does not appear to be present. On the basis of natural water resources alone, it is expected that only sparse settlement of the Northern Sector of this sub-zone will occur throughout the foreseeable future.

Hydrogeologic conditions present in the Galala Plateau — Wadi Araba zone do not appear favorable for large scale ground water development. Overall, climate, rainfall, aquifer conditions and ground water quality are considered restrictive to other than small scale and scattered urban development projects.

- The Western Sedimentary Belt Zone:

This can be generally divided into three rather distinct sub-zones based on hydrogeologic characteristics. From south to north they are: 1) the Nubian sub-zone; 2) the Central sub-zone; and 3) the Limestone Tablelands. All three are bounded by the Red Sea Range or Galala Plateau on the east and the Nile River Valley on the west. The Nubian Zone extends southward to near Aswan and the Limestone Tablelands to approximately the Cairo-Suez Highway. This geologic zone is considered to be the eastern continuation and fringe of the Western Desert. (Map I-11)

The Nubian Sub-Zone extends from Aswan to approximately latitude 25°, near the town of Edfu on the Nile River. Throughout essentially the entire area, the Lower Cretaceous, Nubian Sandstone Formation is exposed on the surface and is continuous to depths as great as 1,500 meters. Dipping gently to the west, the formation thins generally to the east, eventually reaching the Pre-Cambrian Basement Complex which forms the Red Sea Mountain Range. Little hydrogeologic information has been developed in this Nubian sub-zone, but several investigations suggest the possibility of substantial ground water. Such speculation has, in the past, been founded on known water bearing conditions of the Nubian Formation in the Western Desert area. More recent authors postulate that the Nile River has been a Nubian Aquifer recharge source throughout Holocene and perhaps Pleistocene geologic history. If such theories of hydraulic continuity between the Nile waters and Nubian Aquifers are proven, a substantial ground water supply source could be developed throughout the Nubian Zone.

The Central Sub-Zone of the Western Sedimentary Belt lies between approximately latitudes 25° and 26°15°, the latter of which passes through the city of Qena on the Nile River. Lower Cretaceous Nubian sandstone, Upper Cretaceous marine elastic sediments and Paleocene-Eocene marine limestone are exposed on the surface in almost equal proportions throughout the zone. Initial southern exposures east of the Nile of the latter two formations occur in this area. Large

alluvial plains, formed along wadi courses having regional drainage areas tributary to the Nile, traverse through the zone. Among these are Wadis Qena, El Mathula (Laqeita Valley), and El Madamud. Only a few significantly deep dug or bored wells are known to exist in the area, although large drainage areas, formation characteristics and proximity to the Nile River favor the presence of ground water accumulation and storage in the alluviated valleys a short distance east of the Nile. A recently completed well in Laqeita Valley (latitude 25°53') penetrated to 450 m and bottomed in the Nubian Formation. This well reportedly has moderate to high water production potential (15-30 l/s) and very good quality (400 mg/TDS). Shallow wells in the sub-zone are few and known to range from less than 20 to about 70 m in depth. Water quality in such wells varies from good to brackish with better quality waters apparently found in the shallow alluvial zones.

Available information suggests that substantial quantities of good quality ground water exist in the Nubian and Alluvial Formations of the Central Sub-Zone, but additional testing and investigation will be necessary to quantify the magnitude and reliability of such resources. Planning for large urban development in this Central Zone would not be advisable on the basis of ground water information presently available.

The Limestone Tablelands Zone includes essentially all of the Western Sedimentary Belt between Qena and the northern limit of the region. The land surface is dominated by Paleocene-Eocene limestone which form relatively flat, poorly drained plateau topography rising to between 400 and 500 meters elevation from latitude 26°15' northward to bear latitude 28°20'. Further north, the plateau is gradually reduced in elevation toward the Nile Delta. Several perennial springs and shallow watering points exist on the flanks of the plateau and in local wadis south of latitude 27°. These water sources become progressively fewer northward until they are virtually non-existent north of latitude 28°. Ground water quality in the few sources tested in the southern section of the zone is predominantly good.

Because of low rainfall, poor drainage, elevated topography, regional lithology, and depths to potential underlying aquifers, the limestone tablelands do not constitute a favorable environment for ground water. Localized sectors close to the Nile may offer the best potential for ground water in the zone. Otherwise, it is doubtful that ground water resources can be developed to sustain urban demands. Only small irrigation and limited population water requirements can be expected to be met.

iii) **Imported Water Resources.** The Nile River is the only feasible source of water for the Eastern Desert Water Resources region. Presently, this is being utilized on a minor scale to supply towns between Hurgada and Safaga on the Red Sea Coast. Between 1966 and 1980, pumping, treatment facilities and pipelines were constructed to deliver 2,200 m^3 per day, 800 m^3 of which were to supply Safaga. However, illegal taps, leaks, and low pressures have markedly reduced deliveries. A second pipeline project has been started to augment water deliveries to the Red Sea sector. A pipeline extension project between Safaga and Quseir is also underway.

Because land surfaces in practically all locales rise eastward and away from Nile Valley sources, pumping will be required to deliver imported water to any development project east of the Nile. Such pumping is costly and requires high returns for project feasibility. Low returns on subsistance agriculture cannot be supported by expensive pumped water. For tourist facilities, light industry and associated population concentrations, where high return on investment is possible, pumped imported water supplies may be feasible.

d. Summary. The constraints to urban development with respect to water resources are generally formidable throughout the Eastern Desert region. Both quantity and quality restrict development to only a few locations along the Eastern Coastal Belt Zone, within the Western Sedimentary Belt zone and in the Wadi Araba Depression. These have not yet been proven to have the long-term reliable water resources necessary to establish significantly large permanent populations. Because of distances from and elevations above potential water sources, primarily the Nile, the feasibility of delivering large quantities of pumped-piped water into the more favorable areas of the province is extremely questionable.

Current information indicates that only sparsely located communities of 5,000 or less population will be possible within the region to the year 2000 and beyond. The four sub-regions could possibly support populations in the range of 10,000-50,000. Only extensive financial commitments required to provide large imported water and/or desalination projects could alter the water resources constraints to large urban development within this area.

Table I-41 summarizes water resources conditions in the region and Table I-16 relates water resources to potential urban development to year 2000.

10. The Western Desert Water Resources Region VIII

a. General. The Western Desert region of Egypt includes an area of more than 750,000 km^2, about 75 percent of the nation's land surface. It is one of the largest and harshest desert areas on earth. Within Egypt, the

southern and western boundaries correspond to the Sudan and Libya frontiers. On the north, it is bounded by the Northwest Coastal Water Resources region which extends inland from the sea for only about 50 km. From the Mediterranean, the eastern boundary follows along the western limits of the Nile Delta, the Middle and Upper Nile Valley, and the Lake Nasser Water Resources region, as depicted on Map 1-11. In general, useful water resources are absent or rare throughout the area except in large oases and, perhaps, in a newly explored area near the Sudan boundary referred to as the Oweinate area.

b. Hydrologic Features. West of the Nile River Valley and throughout the Western Desert, hydrologic features are of minor importance. Only extremely small amounts of rain falls, no significant surface streams occur, humidity is very low and potential evaporation is greater than 5,000 mm per year — enormous by any standards.

Moisture within the region is effectively restricted to oases areas where natural inflows and artificial development of ground water reach the surface. Figure I-1 depicts the average annual rainfall at stations from the Mediterranean coast inland through the desert to Kharga. From Fayoum Oasis to Kharga, average

TABLE I-41
SUMMARY OF WATER RESOURCES CONDITIONS
EASTERN DESERT WATER RESOURCES REGION VII

	PROVINCE-WIDE	REGION I (3 Zones) Red Sea Coastal Belt	REGION II (1 Zone) Red Sea Mountain Range	REGION III (3 Zones) Galala Plateau — Wadi Araba	REGION IV (3 Zones) Western Sedimentary Belt	COMMENTS
I. GENERAL						
A. Climate Type	Hot, dry desert.	Coastal desert.	High desert.	Low-high desert.	High desert.	
B. Rainfall (mm)	5 to 100 average annual.	Less than 20.	Less than 10.	10-25.	Less than 10.	
C. Surface Area (Km^2)	--	--	--	--		
D. Evaporation (mm/year)	Potentially 2,000 to 5,000+.	2,500-3,000.	3,000+.	3,000+.	3,000 to 5,000+.	Increases inland and toward Aswan.
II. WATER RESOURCES						
A. Surface Water						
(1) Location	Very small amount. Small catchments, water holes.	Small amount. Small catchments.	Very small amount. Small catchments, rock holes (galts).	Very small amount. Small catchments.	Very small amount. Small catchments.	Intermittent wadi formations, mostly nomad watering points.
(2) Development potential	Very small.	Small.	Very small.	Very small.	Small.	
(3) P.C. relative cost to develop	High.	High.	High.	High.	High.	
B. Ground Water						
(1) Aquifer and location	Small or unknown amounts.	Small to unknown.	Very small.	Small to unknown.	Small to unknown.	Little deep investigation.
(a) water quantity		Regional alluvial.	Wadi alluvial.	Wadi alluvial, Miocene.	Wadi and plain alluvial.	
(b) water quality		Small amount.	Very small amount.	Moderate amount.	Small amount.	
(2) Aquifer and location		Brackish to saline.	Good to brackish.	Brackish to saline.	Good to brackish.	Usually higher TDS with depth.
(a) water quantity		Miocene Zone 1, shallow.	Basement complex.	Plateau sediments.	Nubian Zone 1.	
(b) water quality		to 5,000 m^3/day, wells	Insignificant	Insignificant.	Unknown potential.	
(3) Aquifer and location		2,000 to 3,400 mg/c TDS.	N.A.	1,600+ mg/c TDS	N.A.	
(a) water quantity		Miocene Zone 2, dunes.	--	Nubian, Wadi Araba.	Nubian Zone 2.	
(b) water quality		Small to unknown.	--	Unknown.	Moderate to uneven.	Active exploration.
(4) Aquifer and location		1,800+ mg/c TDS	--	Probably poor.	400 mg/c at Lagieta.	
(a) water quantity		Miocene Zone 3.	--	Carboniferous, Wadi Araba	Limestone Zone 3.	No known active exploration.
(b) water quality		Unknown.	--	Unknown	Not fully explored.	
(5) Development potential	Good localized potential.	N.A.	--	Probably poor.	Probably poor.	
(6) P.C. relative cost to develop		Localized, fair to poor potential	Poor throughout.	Fair potential in Wadi Araba and Nubian.	Good potential in Nubian Zones 1 and 2.	
C. Imported Water						
(1) Source	High.	High.	Very high.	High to very high.	High.	
(2) P.C. relative return/cost	Nile River.	Nile Valley or Suez.	Nile Valley.	Nile Valley.	Nile Valley, Lake Nasser.	
D. Other	Very high.	Very high.	Very high.	Very high.	High.	Probably not feasible in large quantities.
(1) P.C. capital and o and m	Saline water conversion.	Moderate to high.	Very high.	Moderate to high.	High to very high.	Irrigation not feasible.
(2) P.C. capital and o and m	Wastewater reclamation.	High.	N.A.	N.A.	Generally high.	Irrigation only.

SOURCE: F. Picard, et al., Red Sea Governorate Regional Plan, 1980.

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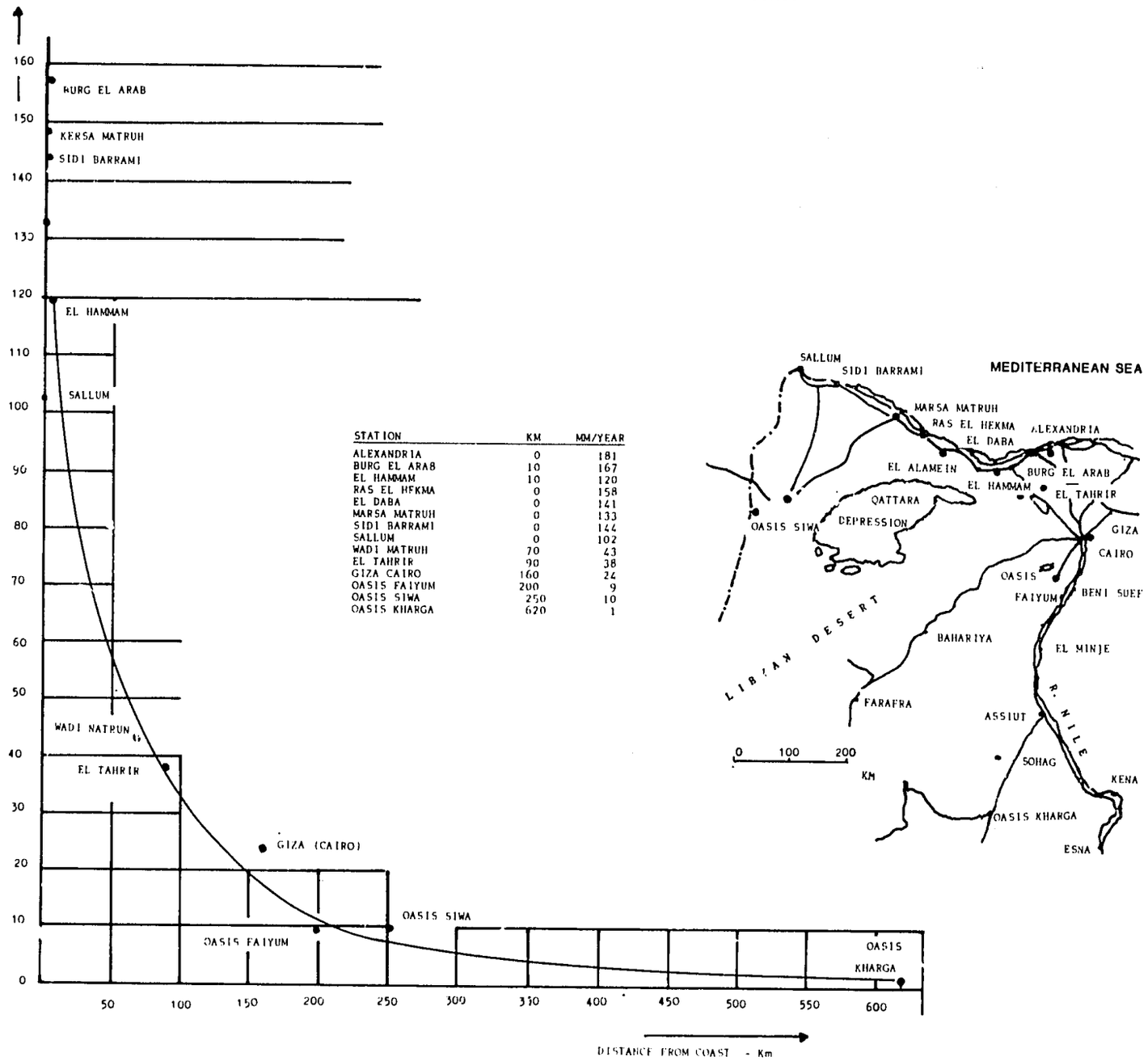
FIGURE I-1

RELATION BETWEEN RAINFALL AND DISTANCE FROM COAST



STATION	KM	MM/YEAR
ALEXANDRIA	0	181
BURG EL ARAB	10	167
EL HAMMAM	10	120
RAS EL HEKMA	0	158
EL DABA	0	141
MARSA MATRUH	0	133
SIDI BARRAMI	0	144
SALLUM	0	102
WADI MATRUH	70	43
EL TAHRIR	90	38
GIZA CAIRO	160	24
OASIS FAIYUM	200	9
OASIS SIWA	250	10
OASIS KHARGA	620	1

SOURCE: Camp Dresser and McKee, Inc., Arab Technical and Economical Consulting Office, Alexandria Waterworks Master Plan Study, 1978.

annual rainfall diminishes from about 9 mm to 2 mm or less. This trend is probably even more severe in the western portion of this great desert. Because of the paucity of hydrologic features in the desert, more detailed discussion is considered inappropriate to this study.

c. Water Resources. Rainfall and surface runoff provide little prospect as water sources in the Western Desert. Imported water is currently used to an extent in the eastern sector of the Miocene Region in the Mariut Extension and Nubaria canal areas. Further development is planned for the Nasr Canal Extension in the future for that same vicinity. Some attention has also been given the possibility of importing Nile River waters onto the depressions of the New Valley area; however, such planning is in very formative stages and is unlikely to bear significant results before the year 2000.

Major interest in the Western Desert, in regard to water resources, is in the New Valley oases and recently explored Oweinate area.

i) **Ground Water.** Ground water occurs throughout the Western Desert; however, the difficulty of producing the water and its generally poor quality restricts development to selected southern areas of the province — primarily the Nubian Region. Map I-19 shows the areas of the Western Desert where unsuitable brackish and saline water are present. North of the brackish zone, depths to aquifers are excessive for feasible production except in proven oasis or depresison areas of the New Valley projects. Possible feasible ground water development areas also exist in the Oweinate area, but studies there of aquifer conditions and hydraulics have not yet been completed.

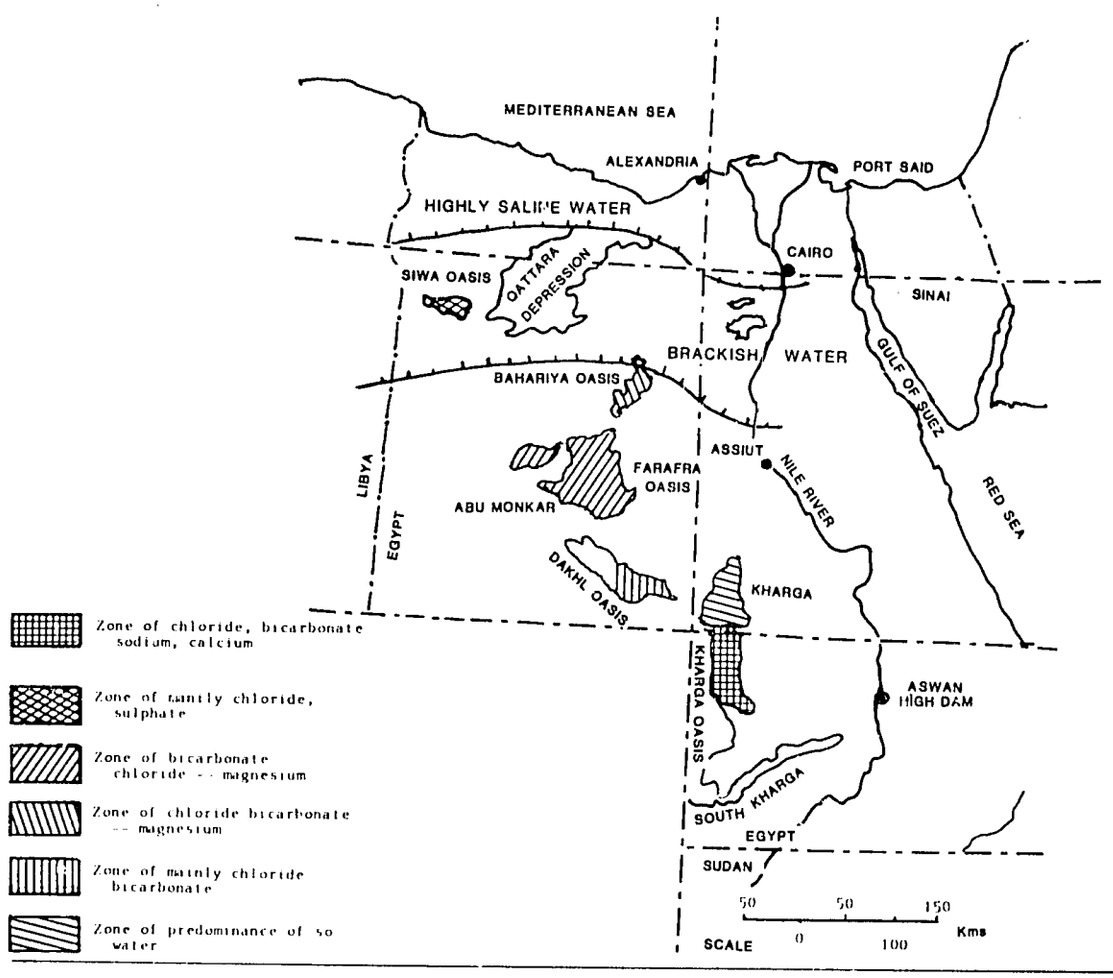
Since 1960, investigation and development of New Valley ground water resources has been ongoing. It has been calculated that fresh water storage within the Nubian and related aquifers is on the order of 2,300 billion m^3 of water. This

formidable aquifer system has been penetrated by approximately 250 test and production wells regionwide. Daily discharge rates at oases of the Western Desert for 1978, both natural and from wells, are listed in Table I-42. Flowing producing wells originally yielded about 8,000 m^3 of water per day, but this quantity has subsequently been reduced to about 5,000 m^3 per day as a result of lowered piezometric levels and the need to pump many wells that no longer flow. Currently, nearly 250 million m^3 per year of water is provided from wells primarily in the oases of Kharga and Dakhlia. It is estimated that natural seepage and well extractions total some 350 million m^3 of water per year while estimated recharge to the area is only about 200 million m^3 per year.

The question of recharge, whether from the vast aquifer storage or from sources south of Egypt, is a matter of controversy. The rate of recharge to the production vicinities, however, is nevertheless known to be substantially less than the rate of withdrawal. Several studies have been conducted to determine the feasible length of time various oases could be utilized at given rates of production. (See Table I-43) Some evaluations (Table I-44) indicate feasible production periods as short as 50 years. However, other studies are proceeding to determine optimum basin management and use rates which will insure much longer resource life in these areas; probably at the expense of reducing the areas which can be irrigated by ground water resources. Water quality is generally good in the Nubian Region aquifers, ranging

MAP I-19

HYDROGEOCHEMICAL ZONATION MAP
WESTERN DESERT AFTER HEMIDA
1979



SOURCE: Nour, S., Meshriki, M. and Amer, A., Ground Water Exploitation Problems in Western Desert, proceedings of the International Conference of the International Conference, Cairo, Egypt; June 25-27, 1979, Water Resources Planning in Egypt.

TABLE I-42
TOTAL DISCHARGE OF WELLS AND NATURAL LOSSES IN WESTERN DESERT

Area	Discharge Wells m^3/day	Natural Losses m^3/day	Total m^3/day
Siwa	120,000	300,000	420,000
Qattara Depression	--	1,400,000	1,400,000
Farafra & Bahariya Oases	145,000	400,000	545,000
Dakhla Oasis	557,000	141,000	698,000
Kharga Oasis	225,260	190,740	416,000
South Kharga Area	--	100,000	100,000
TOTAL	1,047,260	2,531,740	3,579,000

SOURCE: Nour, Meshriki, Amer, Ground Water Exploration Problems in Western Desert, 1979.

TABLE I-43
SUMMARY OF GROUNDWATER MODEL STUDIES IN WESTERN DESERT

Area of Study	Model type	Agency/Date/ Reference	Method applied	Model Results: Simulated Extractions Development Plans ($10^6 m^3$/year)	Predicted pressure drop at end of simulation time (m)	Simulated time (yrs)
Kharga-Dakhla Oases	R-C Analog Model	Industroproject - Yugoslavia 1968 (11)	R-C Electrical analogy	Kharga: 263.17 Dakhla: 467.57	80 56	1968-2010
Western Desert	Regional Digital Model	Ezzat, 1976 (12)	ECAP Program	Recharge to sandstone aquifer system: Eastern Desert: 18.92 Sudan border: 193.7 Gilf El-Kebir: 449.59		1960-1970
Kharga-Dakhla Oases with Abu Tartur phosphate field	Semi-detailed digital model	Ezzat, 1976 (12)	ECAP Program	Kharga: 79.49 Dakhla: 153.71 (1970 extractions) + Abu Tartur: 30.00	54 25 25.8	1970-2070
Kharga-Dakhla Oases	Detailed Digital Model	F.A.O./1976, (13)	Integrated Finite Difference	Kharga: 156.2 Dakhla: 509.3 Abu Tartur: 30.0	87 30-60 34-39	1975-2025
South Qattara Oases Areas (Siwa-Bahariа-Farafra)	Regional Digital Model	Ezzat et al., 1977 (14)	ECAP Program	Siwa: 140.00 Bahariа: 182.00 Farafra: 364.00	60 185 194	1960-2010

SOURCE: Nour, Meshriki, Amer, Ground Water Exploration Problems in Western Desert, 1979.

usually from 100-800 mg/TDS. Deeper aquifer waters are most frequently of better quality than the shallow zones.

All available information indicates that New Valley areas will continue to be intensively irrigated sectors which require only moderate population densities for both agriculture and supporting economic bases. Large urban concentrations should not be expected by the year 2000, based upon regional water availability and its expected uses.

Development plans and schemes in the Western Desert will necessarily be determined on bases of economic and political factors. Such factors will, in turn, be evaluated in the light of physical, engineering and social aspects. Currently, the only area of the Western Desert where significant development using imported water appears probable by the year 2000, lies in the Miocene Region near to the Cairo-Alexandria Desert Highway. Communities can be developed at several locations there and imported water supply needs can be provided if the commitment to do so is forthcoming.

c. Summary. There is some prospect for additional urban development by the year 2000 in the New Valley and the Eastern Miocene zones of the Western Desert region. New Valley urbanization will be largely dependent upon a stabilized matching of ground water resources with optimum agricultural practices. Under these conditions, a few communities of less than 50,000 population may be possible. In the eastern

TABLE I-44

Area	Quantities of Exploitable Water Mm^3/year
Siwa Oasis	140.00
Bahariya Oasis	182.00
Farafra Oasis	364.00
Dakhla Oasis	509.30
Kharga Oasis	156.20

SOURCE: Nour, Meshriki, Amer, Ground Water Exploration Problems in Western Desert, 1979.

Miocene zone west of the Cairo-Alexandria Desert Highway, imported water could be utilized to supply several large, well-planned urban sectors. Water supplies to such areas will require pipelines and pumping stations and, therefore, relatively high delivery costs.

Recent exploration in the Oweinate sector of the Nubian region has located potentially large ground water resources. The hydrogeologic properties of this potential resource will require further analysis before reliable development plans can be formulated. It is possible that some small agriculturally based communities of less than 5,000 people could be established in the Oweinate area by year 2000.

Table I-45 summarizes water resources conditions in the province and Table I-16 relates water resources to potential urban development to year 2000.

11. The Sinai Water Resources Region IX

a. General. The Sinai is a vast desert area of approximately 60,000 km^2. Essentially all desert environments are represented, including: 1) coastal sectors along the Gulf of Aqaba and the Gulf of Suez; 2) low inland desert sectors within the western and northern areas of the province; and 3) high inland deserts throughout southern and central regions. The Sinai is geologically an extension of the eastern desert of Egypt which, through time, has been structurally separated and rotated away from the mainland of Egypt by tectonic activity related to

the Red Sea Rift Zone. The Suez Canal is a link between mainland Egypt and the Sinai.

The Sinai is sparsely populated and only small water resources potential within the region has been discovered to date. An intensive investigation, the Sinai Development Study, is currently being conducted to evaluate all natural and economic resources of the Sinai — one of which is water resources. A further review of water resources available for urban policy planning after the completion of this comprehensive study would be advisable.

b. Hydrological Features. Although rainfall occurs in modest quantities along the Mediterranean coastline, only very small average amounts fall throughout the region. This, coupled with high evaporation in the usually harsh desert climate, results in both rare stream flows and low potential for ground water recharge. Steep topography in the southern and western coastal areas promotes rapid runoff to the sea of much of the little rainfall that does reach wadi courses.

i) **Climate.** For the most part, the Sinai can be classified as low to high desert throughout. Only in localized coastal sections and the higher central mountainous area (such as Mount Sinai), does some relief from the hard desert climate occur. Average annual temperature is fairly constant in the coastal desert sections, ranging from about 22.8°C at El Tor in the south to about 22°C along the Mediterranean fringe in the north of the province. Inland desert area mean temperatures vary with location and elevation, but during summer months are usually significantly warmer than the sea-tempered coastal belts Potential humidity also varies with distance from the sea coasts and probably exceeds an annual average of more than 4,000 mm throughout the area.

ii) **Rainfall.** Precipitation, as in the case of temperature and humidity, varies with proximity to coastlines and elevation. However, a south to north increase in rainfall also prevails at El Tor. A 30-year rainfall record indicates an average 9.4 mm annually, while on the northern Mediterranean coast, east of Port Said, the average exceeds 50 mm. This general south-north trend of increases is probably modified to some extent by orographic features within the central and south-central regions of the Sinai.

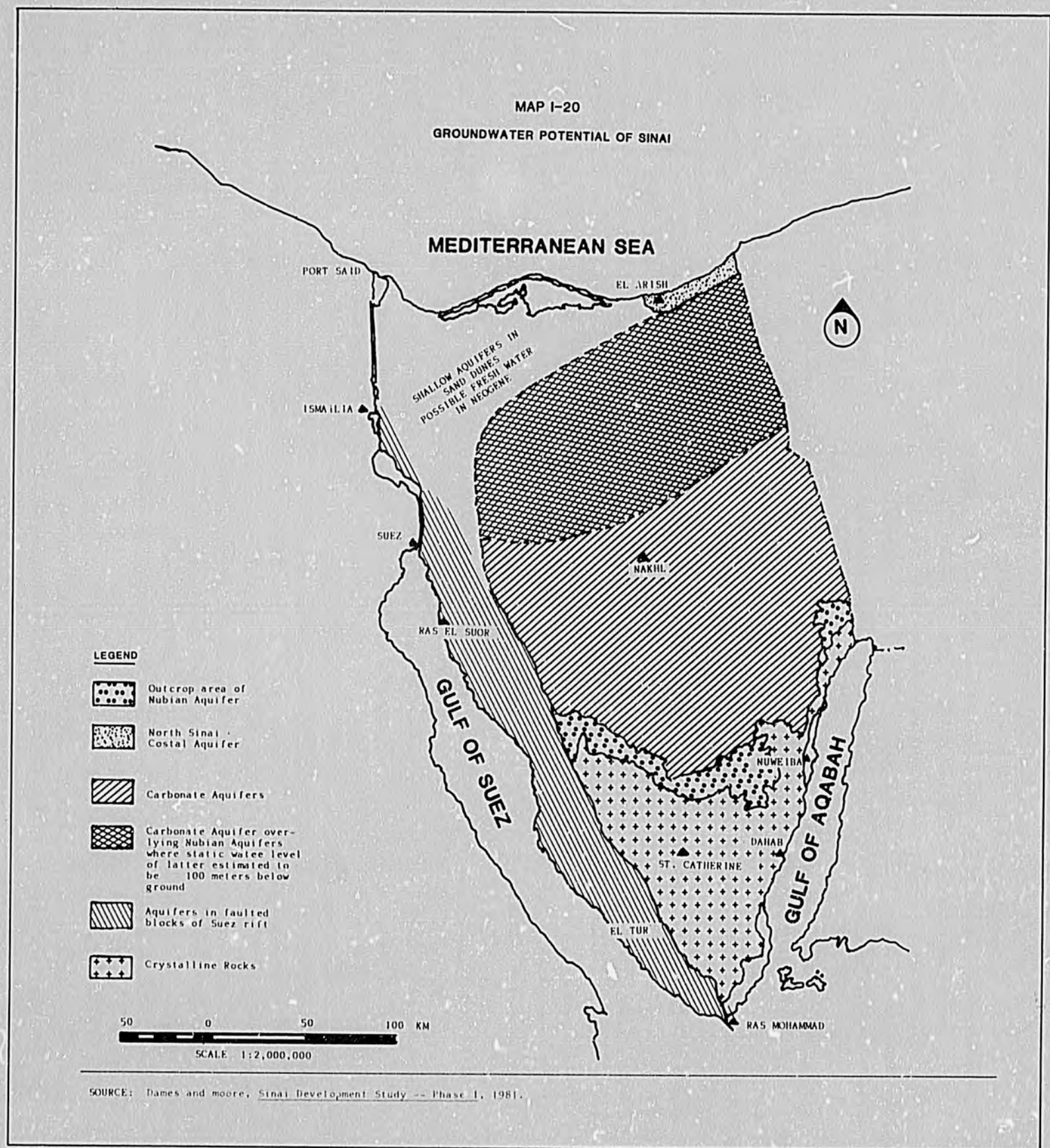
iii) **Surface Streams.** Surface stream flows throughout the province are intermittent and seasonal at best. Short duration flows after rain showers occur infrequently and rarely a torrential flow will cause localized flooding. Wadi Arish in the northeast section is the most significant surface stream in the Sinai. This stream drains a large tributary area of the central Sinai and flows to the Mediterranean Sea near the community of El Arish. Wadi Arish characteristically flows seasonally and, as a secondary feature, provides ground water recharge to a shallow alluvial basin in the vicinity of El Arish.

c. Water Resources. Some small catchment dams have historically been constructed in the Sinai, but the low capacities and rapid silting features of such structures render them inappropriate as reliable urban development facilities.

TABLE I-45
SUMMARY OF WATER RESOURCES CONDITIONS
WESTERN DESERT PROVINCE VIII

	Province Wide	REGION 1 Miocene Region	REGION 2 Eocene Region	REGION 3 Upper Cretaceous Region	REGION 4 Nubian Region	Comments
I. GENERAL						
A. Climate type	Harsh desert.					
B. Rainfall	Average less than 5 mm/yr.	10-40 mm/year.	5-10 mm/year.	Less than 5 mm/year.	2 mm/year.	
C. Surface area	750,000 km^2.	120,000 km^2.	200,000 km^2.	90,000 km^2.	340,000 km^2.	
D. Evaporation	Average 5,000+ mm/year.					
II. WATER RESOURCES						
A. Surface streams	None.	N.A.	N.A.	N.A.	N.A.	
B. Ground water	Regionally abundant.	None useful.	Marginal quality.	Good quantity/quality.	Good quantity/quality.	
1) Aquifer location	Nubian Region.	Regional.	Siwa Oasis.	Farafra, Baharia Oasis.	Dakhla, Kharga Oasis	
a) Water quantity		N.A.	140 million m^3/yr.	546 million m^3/yr.	665 million m^3/yr.	
b) Water quality		Brackish to saline.	1,650-24,500 mg/l TDS.	100-250 mg/l TDS.	220-800 mg/l TDS.	
2) Aquifer location					Owienate.	
a) Water quantity					Undetermined	
b) Water quality					800-1,300 mg/l TDS.	
3) Ground water Development Potential	Good in Regions 3-4. Poor in Regions 1-2.	Poor.	Poor.	Presently good. Developed supplies.	Good present and potential development.	Owienate area undeveloped.
4) P.C. Relative Cost to Develop		N.A.	Low to moderate.	Low to moderate.	Low to moderate.	Owienate probably moderate to high.
C. Imported water						
1) Source	Nile River only.	N.A.	N.A.	N.A.	Lake Nasser.	
2) P.C. Relative Cost	N.A.	N.A.	N.A.	N.A.	Moderate to high.	Conceptual/study phases.
D. Other	Probably unfeasible					
1) Saline water conversion	Unfeasible for regional development	N.A.	N.A.	N.A.	N.A.	Not practical for irrigation sector.
2) Waste water reclamtion	Unfeasible for regional development					Unpractical without sewage systems.

SOURCE: NUPS Summary.



SOURCE: Dames and moore, Sinai Development Study -- Phase I, 1981.

i) **Ground Water.** Only ground water and imported water resources offer feasible supply potential to the Sinai. The former is probably modest but the latter could be important to urban development policy. Current ground water development is largely limited to small capacity, shallow wells along the north and west coastal sectors of the region. Except at El Arish, on the northeast Mediterranean coast, most developed ground water supplies can be described as meager. The hydrogeology of each of the four geologic regions is described separately as follows.

Map I-20 indicates a preliminary assessment of ground water potential in the Sinai as prepared for the Sinai Development Study, Phase I.

- Southern Basement Complex:

This area is essentially devoid of potential ground water because of the impermeable nature of the basement complex rocks forming the surface and underlying the area. Localized springs, both perennial and seasonal, are infrequently found. However, such sources are related to fractures and crush zones which do not receive replenishment or store the volumes of ground water required for reliable urban supplies.

- The Central Sedimentary Zone:

There is some speculation that significant ground water resources can be developed through construction of deep wells in this zone. A band of Nubian sandstone (Lower Cretaceous) is known to crop out along the southern-most boundary of the region which is thought to underly, regionally, the Upper Cretaceous through Eocene formations to the north. The extent and possible productivity of this aquifer has not yet been determined, although testing of its water bearing characteristics has been recommended. Exclusive of the Nubian aquifer, the region holds little likelihood for development of significantly

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great and/or reliable ground water resources. Only limited and localized supplies appear to be developable in view of the low recharge and poor permeability characteristics of formations int he region. Additionally, low individual well yields and poor water quality (1,500-6,000 mg/TDS) would normally be expected.

- The Northern Sedimentary Zone:

The most important developed ground water supply in this region is at El Arish. The community there is supplied from a system of shallow wells constructed in Wadi Arish, an intermittent stream course which drains a large area of the Central Sedimentary Zone. Reportedly, there is some agricultural use of shallow ground water along the wadi, but this is minor. The possibility of developing a more substantial ground water supply at El Arish is presently being explored. Further to the west and south in the region, only subsistance level ground water resources, usually of brackish quality, have been developed. Although some hope is held that significant potable water supplies exist in this sector of the region, none have yet been discovered.

- The West Coastal Belt Zone:

Presently, ground water resources are developed only sparsely within this area and many community supplies are dependent upon tank trucks or ships for potable water. To date, only small localized ground water sources have been discovered and these are frequently of brackish to saline quality. The badly disrupted older sediments, mostly Miocene through Pleistocene in age, do not provide a geologic environment favorable to the accumulation and storage of large ground water bodies. Additionally, the proximity of potentially better aquifer-bearing formations to the Gulf of Suez further impairs the possibility of locating sizable, dependable quality ground water resources in the region.

In order to better assess the water resources of this region, the Sinai Development Study team is currently conducting a comprehensive hydrogeologic investigation of the area. Preliminary findings suggest additional potable resources are locally available from several alluviated wadi areas. No occurrence of ground water of sufficient reliable quantity or quality to base concentrated urban development upon is now known, or expected to be discovered in this Coastal Belt of the Sinai.

ii) **Imported Water Resources.** Water brought from west of the Suez Canal currently appears to be the most feasible future source of supply for urban development in the region which could be in place by the year 2000. One pipeline, from Qantara to Romani, on the north Sinai coast, is currently being completed. Another pipeline is planned to cross at Suez to supply an east bank sector south of that city. Additional high capacity pipelines to

TABLE I-46
SUMMARY OF WATER RESOURCES CONDITIONS
THE SINAI PROVINCE IX

	Province Wide	REGION 1 Southern Basement Complex Region	REGION 2 Central Sedimentary Region	REGION 3 Northern Sedimentary Region	REGION 4 West Coastal Belt Region	Comments
I. GENERAL						
A. Climate type	Low to high desert.					
B. Rainfall	9-50 mm/yr.					
C. Surface area	65,000 km^2.	15,000 km^2.	26,000 km^2.	1,800 km^2.	6,000 km^2.	
D. Evaporation	Average 4,000 mm/yr					
II. WATER RESOURCES						
A. Surface streams	No reliable surface streams.					None useful for urban water supply systems.
1) Location	Regional-intermittant only.	Localized (minor).	Localized (minor).	Wadi Arish	Localized (minor).	
a) quantity				Unknown variable.		
b) quality				Potable.		
B. Ground water	Modest development & potential	Small sources.	Moderate potential.	Small sources.	Localized sources.	
1) Aquifer location	Regionally localized	Fractured zones	Nubian SS, alluvium	Limestone alluvium	Alluvium & older seds	
a) water quantity	1-25 L/S wells.	Mix. 10 L/S wells.	Mix. 15 L/S wells.	Mix. 25 L/S wells	Mix. 20 L/S wells	Unreliable quantities.
b) water quality	Regionally poor to saline.	300-1,500 mg/l TDS.	1,500-6,000 mg/l TDS.	800 mg/l TDS to saline.	3,000 mg/l TDS to saline	Unreliable quantities.
2) Ground water development potential	Generally unreliable relatively small quantities.	Poor to none.	Moderate to potential only.	Small to poor potential.	Small to poor potential.	Additional small services probable.
3) P.C. relative cost to develop	Moderate to high.	N.A.	High.	Moderate to high.	Moderate to high.	
C. Imported Water						
1) Source	Nile River water.	N.A.	N.A.	Qantara, Ismailia	Suez	Requires pipeline and pumping.
2) P.C. relative cost	High	N.A.	N.A.	High	High	
D. Other						
1) Demanetalization	Localized potential	N.A.	N.A.	Moderate potential	Moderate potential	For non-irrigation uses only.
a) P.C. relative cost	High	N.A.	N.A.	High	High	
2) Wastewater reclamation	Not feasible					Requires costly wastewater systems.

SOURCE: RUPS Summary.

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the Suez Canal sector east of the Canal offer the only known potential which could provide a basis for significant urban expansion within the Sinai. The availability of such resources will be based upon financial and political commitments to Sinai development.

iii) **Other Water Resources.** It is possible that desalination of brackish ground water could supply small communities such as tourist facilities, oil towns, isolated settlements, mining camps and military bases, but demineralization plants are generally not feasible as primary urban water sources and clearly not suited for production of irrigation supplies.

d. Summary. Imported and ground water resources are presently the only viable water available to support urban development of any magnitude in the Sinai. Currently, investigations of ground water development potential are active, but on the basis of knowledge to date, the possibility of locating significant reliable unknown sources is considered remote. If this condition is found to be valid, imported water will be required to supply any substantial development in the Sinai by the year 2000 and beyond.

Table I-46 summarizes water resources conditions in the province and Table I-16 relates water resources to potential urban development to year 2000.

FOOTNOTES
(Section C)

1 Mineral Map of Egypt, Ministry of Industry and Mineral Wealth, Egyptian Geological Survey and Mining Authority, Cairo, 1979.

(Section E)

2 Camp Dresser and McKee, Inc., and Arab Technical and Economical Consulting Office, Alexandria Waterworks Master Plan Study, prepared for Ministry of Housing and Reconstruction, A.R.E., 1978.

3 Morean, 1969.

4 Sabbor Associates, David A. Crane and Partners, et al., 1977, The Planning of Sadat City Elements of the Plan (Draft), prepared for Ministry of Housing and Reconstruction, A.R.E.

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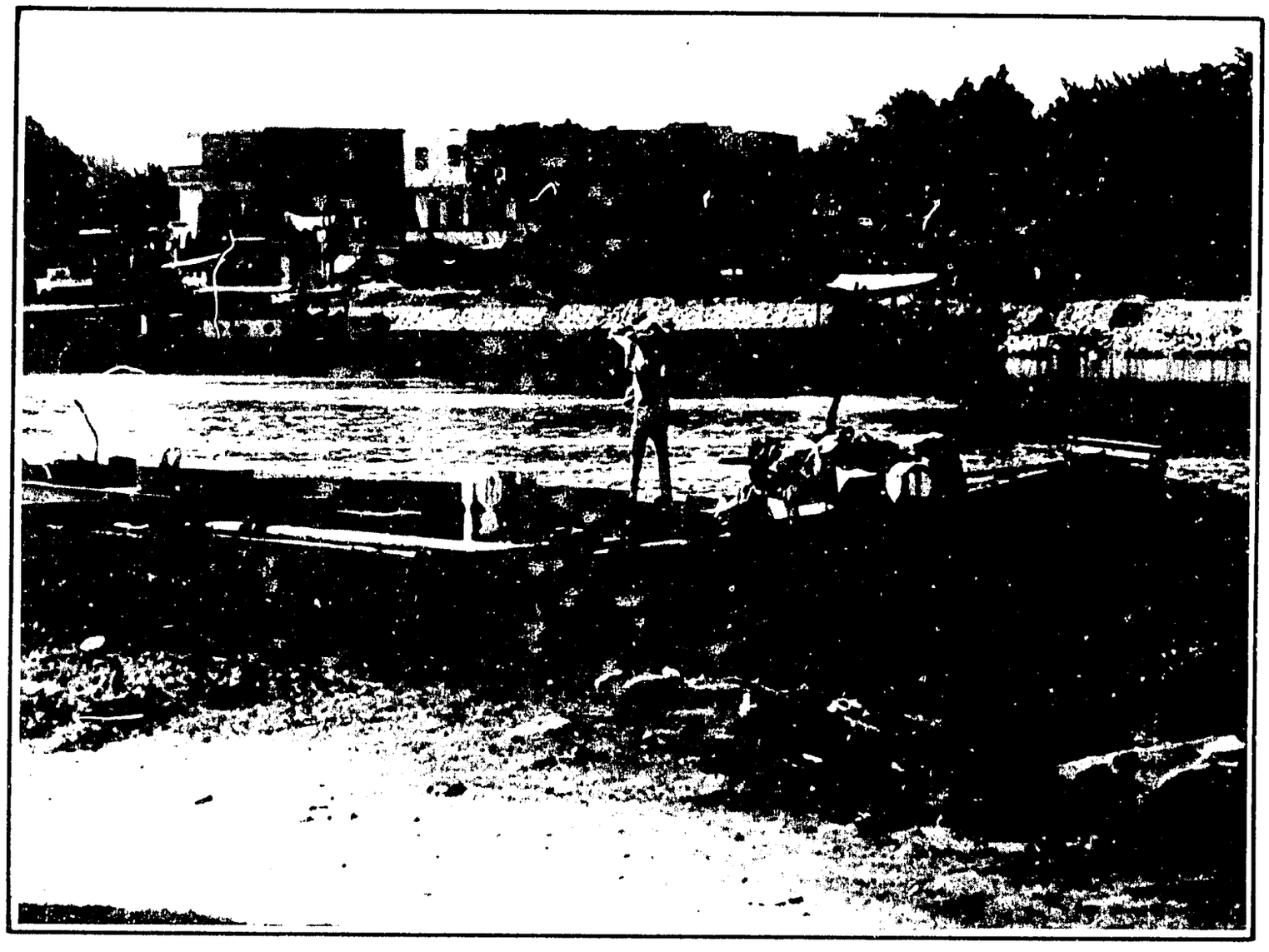

II. NATIONAL POPULATION CHARACTERISTICS, MIGRATION AND DEMOGRAPHIC PROJECTIONS

A. Introduction

Egypt is experiencing intense population pressure on land and living space in the inhabited zones, which amount to only 5.5 percent of the country's territory. The average density of the population in 1976 was 695 persons per square kilometer of habitable land and it had increased to an estimated 763 persons per square kilometers by April 1980 — one of the highest in the world.

In addition, Egypt is relatively highly urbanized in comparison with most other developing countries. Through this century, Egypt has experienced considerable increase in its urban population. The urban population has increased from 2.1 million in 1907 to 16.0 million in 1976, a six-fold increase in about seventy years.

This increase reflects the complex demographic, social, economic and political processes that the country experienced during this period. These include an extensive agricultural development at the turn of the century, an effort to industrialize during the second and third quarters of the century, two world wars, four local wars and the political, social and economic revolution of 1952. The sharp reduction in death rates experienced after the Second World War has directly affected the national growth rates and specifically the urban rates.

In spite of that high rate of growth of urban population, the rural population continues to grow, increasing the pressure of the population on the limited areas of cultivable lands. The process of defining and demarcating urban areas has been based on administrative considerations; mainly administrative and security requirements, rather than on purely demographic and economic considerations. Some settlements administratively and statistically defined as "urban" may be defined sociologically and economically as "rural." They resemble large villages more than small urban centers. On the other hand, there are settlements that are administratively and statistically defined as "rural" that may have more "urban" features than some "urban" settlements. Hence, there is no clear cut line between the urban and rural populations.

B. Urban Population Growth

1. Components of Growth

Urban growth in Egypt is the product of four processes: (a) natural increase; (b) rural-urban migration; (c) changes in administrative definition of a settlement from rural to urban; and (d) changes in city boundaries.

a. **Natural Increase.** The process of natural increase (i.e. the difference between birth and death rates) accounts for the largest proportion of Egypt's urban growth. There are no substantial differences between rural and urban natural growth rates. Though fertility of the middle and high socio-economic groups in urban settlements is lower than the fertility of the low economic groups, the high infant and child mortality rates experienced by the low groups tend to almost balance the natural growth rates of the urban and rural populations.

There is a tendency for rural areas to have lower natural increase rates than small urban areas within the same governorate, sometimes regardless of the fact that the capital city might have a slightly lower natural increase rate. It has been estimated that natural increase accounted for 59 percent of the growth of Egypt's total urban population during the period 1966-1976.

EGYPT IS RELATIVELY HIGHLY URBANIZED

b. Migration. The second process responsible for urban growth in Egypt is rural-urban migration. While urban population increased more than six-fold between 1907-1976, rural population increased by only 127 percent within the same period. This substantial difference between urban and rural growth of the population is mainly due to internal migration rather than to great differences in natural growth rates. (Table II-1)

This trend will continue. The population density in rural settlements, the limited employment opportunities, in addition to the threat of settlement expansion on fertile agricultural land are part of the present reality of rural settlements.

Of the four processes responsible for the urban growth in Egypt, natural increase and internal population movements are the two dominant factors. It has been estimated that almost two-thirds of urban growth is attributed to natural increase and around one-third to internal migration.

c. Administrative Decisions. The third and fourth processes that contribute to urban growth are the products of administrative decisions redefining rural-urban populations. Egypt is divided into governorates. Each governorate — other than the urban governorates of Cairo, Alexandria, Port Said and Suez — is composed of several districts called markaz. Each markaz has a central administrative town that is defined as urban and several rural settlements. Some villages, because of demographic, economic, administrative, political or security reasons, may be redefined as towns and statistically be included within the urban population.

Urban centers may also change boundaries and annex small adjacent villages, changing the size of the urban population.

TABLE II-1
POPULATION IN URBAN & RURAL AREAS IN EGYPT IN CENSUS YEARS 1907 - 1976 [1]

Years	Urban Population	%	Average Annual Rate of Increase 2/	Rural Population	%	Average Annual Rate of Increase 2/	Total Population	Average Annual Rate of Increase 2/
1907	2,125,000	19		9,058,000	81		11,183,000	
1917	2,640,600	21	2.20	10,029,700	79	1.02	12,670,300	1.26
1927	3,715,840	26	3.48	10,367,436	74	0.33	14,083,276	1.01
1937	4,382,083	28	1.66	11,429,001	72	0.98	15,811,084	1.21
1947	6,202,316	33	3.53	12,603,510	67	0.98	18,805,826	1.75
1960	9,651,097	37	3.46	16,120,368	63	1.91	25,771,465	2.45
1966	12,036,787	40	3.75	17,687,212	60	1.56	29,723,999	2.41
1976 1/	16,036,403	44	2.91	20,489,801	56	1.53	36,526,204	2.11

1/ Excluding those outside the country and in the occupied zone on the census date.

2/ Average Annual Rates of Increase are calculated expotentially.

SOURCE: CAPMAS, Population & Development, Cairo, September 1978, p. 159.

CAPMAS, General Population & Housing Census 1976, Vol. 1, Cairo, September 1978, pp. 36-38.

TABLE II-2
POPULATION DISTRIBUTION, URBAN & RURAL - 1976 1/

Governorate	Urban	Rural	Total
Cairo	5,074,016	--	5,074,016
Alexandria	2,317,705	--	2,317,705
Port Said	262,760	--	262,760
Suez	193,965	--	193,965
Ismailia	174,211	179,764	353,975
Beheira	595,100	1,869,345	2,464,445
Damietta	142,707	433,619	576,326
Kafr El Sheikh	291,614	1,115,546	1,407,160
Gharbia	764,307	1,528,933	2,293,240
Dakahlia	656,840	2,080,466	2,737,306
Sharkia	530,051	2,087,887	2,617,938
Menoufia	336,623	1,374,226	1,710,849
Qalyubia	685,238	995,599	1,680,837
Giza	1,378,009	1,038,650	2,416,659
Fayoum	275,378	866,501	1,141,879
Beni Suef	276,429	833,703	1,110,132
Menia	430,462	1,227,053	2,054,105
Assuit	470,369	1,227,053	1,697,422
Sohag	409,520	1,515,294	1,924,814
Qena	392,079	1,317,220	1,709,299
Aswan	234,340	384,178	618,518
Red Sea	48,438	6,977	55,415
New Valley	34,769	50,406	85,175
Matruh	51,756	60,791	112,547
Sinai	9,717	--	9,717
TOTAL	16,036,403	20,589,801	36,626,204

1/ Population present at census date, does not include population abroad (1,425,000) and population in occupied zone of Sinai (147,000).

SOURCE: CAPMAS, Statistical Yearbook, A.R.E., July, 1980. p. 8.

2. Differential Growth of Urban Areas

The urban population in Egypt is not evenly distributed. (See Table II-2 for 1976 population levels by governorate.) The greatest urban concentration is in the Cairo Planning Region where 78 percent of the region is urban population. This population represented about 45 percent of all the urban population of Egypt in 1976. The second highest urban concentration is in the Alexandria Planning Region where 61 percent of the region is urban and represents 18 percent of the total urban population. The remaining 37 percent of the urban population is distributed among the other six regions. Table II-3 shows the percentage distribution of urban population within each planning region and the proportion of the region's urban and rural populations to the nation's urban and rural population.

TABLE II-3
PERCENTAGE OF URBAN POPULATION OF THE EIGHT PLANNING REGIONS AND PERCENTAGE OF URBAN AND RURAL POPULATION TO THE NATIONAL RURAL & URBAN POPULATION IN 1976

Region	% Urban to Region	% Urban to National Urban	% Rural to National Rural
Cairo	77.8	44.5	9.9
Alexandria	60.9	18.2	9.1
Suez Canal	34.3	7.4	11.0
Delta	25.1	13.7	31.7
North Upper Egypt	23.0	6.2	16.1
Assuit	28.3	3.1	6.2
South Upper Egypt	24.7	6.6	15.7
Matruh	46.0	0.3	0.3
Egypt Total	43.7	100	100

SOURCE: Computed from CAPMAS, Statistical Indicators, 8 Volumes.

All rural governorates, with the exception of Giza and Ismailia, have lower proportions of urban population than the national percentage of 43.7. (Table II-4) However, most of these governorates have experienced a higher rate of urbanization between 1960-1976 than the national rate. The exceptions are the governorates of Gharbia, Beni Suef and Sohag.

TABLE II-4
PERCENTAGE OF URBAN POPULATION IN RURAL GOVERNORATES OF EGYPT, 1937-1976 AND PERCENTAGE INCREASE IN URBANIZATION (Between 1960-1976)

Governorates	1937	1947	1960	1976	% Increase 1960-1976
Damietta	25.8	26.7	25.0	24.8	-0.4
Dakahlia	15.5	17.0	18.0	24.0	32.6
Sharkia	12.8	14.8	16.2	20.2	24.7
Qalyub	16.5	19.8	25.4	40.8	61.3
Kafr El Sheikh	16.5	16.8	17.0	20.7	21.8
Gharbia	20.3	25.6	28.2	33.3	18.1
Menouf	10.9	12.4	13.6	19.7	44.8
Beheira	14.9	16.6	18.3	24.1	32.4
Ismailia	100.0	100.0	100.0	49.2	--
Lower Egypt	15.5	17.9	10.6	26.4	35.7
Giza	16.2	22.0	32.5	57.0	75.9
Beni Suef	17.6	19.1	21.3	24.8	17.4
Fayoum	17.3	17.8	19.3	24.1	24.9
Minia	13.5	15.5	17.2	21.0	22.1
Assiut	17.6	20.2	21.8	27.2	30.7
Sohag	16.4	17.0	18.1	21.3	17.7
Qena	12.2	13.6	13.7	22.9	67.1
Aswan	16.7	21.0	25.5	37.9	49.2
Upper Egypt	15.6	17.7	20.6	30.5	48.0
Egypt	28.0	33.0	37.0	43.8	18.4

SOURCE: CAPMAS, Population & Development, Cairo, September 1978, p. 164.

CAPMAS, General Population & Housing Census, 1976, Vol. I.

Damietta is the only governorate in which the percentage of urban population decreased within the same period. Rural areas in the governorate of Damietta have experienced an average annual rate of increase of 2.5 percent over the period 1960-1976, the highest rural growth in all Egypt. (Table II-5)

The three governorates experiencing the highest rate of urbanization are Giza, Qalyubia and Qena. They are followed by the governorates of Aswan, Menoufia, Dakahlia, Beheira and

TABLE II-5
AVERAGE ANNUAL INCREASE RATE OF INTERCENSAL YEARS OF RURAL & URBAN POPULATION OF GOVERNORATES

	Urban			Rural		
	1937-47 2/	1947-60 2/	1960-76 1/	1937-47 2/	1947-60 2/	1960-76 1/
Cairo	4.69	3.85	2.63	0.0	0.0	0.0
Alexandria	2.83	3.74	2.69	0.0	0.0	0.0
Port Said	3.34	2.90	0.43	0.0	0.0	0.0
Suez	9.05	4.65	0.30	0.0	0.0	0.0
Ismailia	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Damietta	2.74	2.50	2.46	2.18	3.23	2.52
Dakahlia	2.69	2.87	3.75	1.53	2.33	1.46
Sharkia	3.01	2.92	3.72	1.28	2.09	1.99
Qalyub	3.04	4.3	6.49	0.76	1.86	1.89
Kafr El Shiekh	2.38	2.74	3.61	2.14	2.64	2.04
Gharbia	3.51	2.82	2.89	0.46	1.81	1.37
Menouf	1.44	2.02	3.86	0.09	1.25	1.04
Beheira	2.67	3.16	4.21	1.39	2.33	1.92
Giza	5.05	6.48	7.49	1.23	2.35	0.88
Beni Suef	1.78	2.09	2.64	0.69	1.05	1.32
Fayoum	1.44	2.28	3.38	1.0	1.55	1.55
Minia	2.57	2.31	3.00	1.14	1.71	1.04
Assiut	2.82	2.47	3.08	1.14	1.71	1.04
Sohag	1.74	2.02	2.28	1.32	1.44	1.00
Qena	1.88	1.55	4.81	0.69	1.48	0.76
Aswan	1.76	3.58	5.61	0.99	1.67	1.83

1/ Computed from 1960 & 1976 Census Data (rates are exponential).

SOURCE: CAPMAS, Population & Development, 2/ Cairo, September 1978, p. 162.

Assiut. Table II-6 details the percentage of each governorate's 1960, 1966 and 1976 total, urban and rural populations to the comparable national figures.

3. Urban Concentration and Settlements

The urban population in Egypt, around 16 million in 1976, was distributed in 152 urban settlements. There are four different administrative types of urban settlements in Egypt.

The first type represents cities that are also governorates (urban governorates): Cairo, Alexandria, Port Said and Suez. The second type is cities that are capitals of governorates; the third type is towns, capitals or centers of districts or markez (plural of markaz); and the fourth type is towns that are defined as urban and have no rural settlements administratively attached to them, such as Fariskour in Damietta and Farshoud in the district of Naga Hammadi, governorate of Qena.

TABLE II-6
PERCENTAGE DISTRIBUTION OF TOTAL URBAN AND RURAL POPULATION BY GOVERNORATES, 1960 - 1976

	% of National Population			% of Total Urban Population			% of Total Rural Population		
	1960	1966	1976	1960	1966	1976	1960	1966	1976
Cairo	13.9	14.0	13.9	34.0	35.0	31.6	0.0	0.0	0.0
Alexandria	5.8	6.0	6.3	15.4	14.9	14.4	0.0	0.0	0.0
Port Said	0.9	0.9	0.7	2.4	2.3	1.6	0.0	0.0	0.0
Suez	0.8	0.9	0.5	2.0	2.3	1.2	0.0	0.0	0.0
Damietta	1.5	1.4	1.5	0.7	0.9	0.9	1.9	1.7	2.0
Dakahlia	7.7	7.6	7.4	3.7	3.9	4.1	10.2	10.0	10.1
Sharkia	7.0	7.0	7.1	3.0	3.2	3.3	9.4	9.4	10.4
Qalyub	3.8	4.0	4.6	2.5	3.2	4.2	4.6	4.6	4.8
Kafr El Sheikh	3.7	3.7	3.8	1.7	1.8	1.8	5.0	5.0	5.4
Gharbia	6.6	6.3	6.3	4.9	5.0	4.8	7.6	7.2	7.4
Menouf	5.2	4.8	4.7	1.8	2.0	2.1	7.2	6.8	6.7
Beheira	6.5	6.6	6.9	3.1	2.9	4.2	8.5	9.0	9.0
Ismailia	1.1	1.1	0.9	2.9	1.5	1.0	0.0	0.9	0.9
Giza	5.1	5.5	6.6	4.4	5.4	8.6	5.6	5.6	5.0
Beni Suef	3.3	3.0	3.0	1.6	1.7	1.7	4.2	4.0	4.0
Fayoum	3.2	3.1	3.1	1.6	1.7	1.7	4.2	4.1	4.2
Minia	6.0	5.7	5.6	2.7	2.8	2.7	8.0	7.6	7.9
Assiut	5.1	4.7	4.6	2.9	2.8	2.9	6.4	6.0	5.9
Sohag	6.1	7.6	5.2	2.9	2.8	2.5	8.0	7.5	7.4
Qena	5.2	5.0	4.6	1.9	2.3	2.4	7.2	6.6	6.4
Aswan	1.5	1.7	1.7	N.A.	N.A.	1.5	N.A.	N.A.	1.9

SOURCE: NUPS analysis from 1960. 1966 and 1976 Census data.

Only two of these cities have populations over one million; Cairo and Alexandria. Approximately 56 percent of the urban population of Egypt resides in these two primate cities. (This percentage includes the populations of cities of Giza and Shoubra El Kheima as part of urban metropolitan Cairo.)

Cairo, as the main primate city, has several boundary definitions. Urban metropolitan Cairo, however, is functionally the most representative of Cairo in spite of the limited administrative definition of the governorate of Cairo, because of the continuity of urban spillover without any rural settlements. Around 42 percent of the urban population resides in this urban cluster. This represents a high level of urban concentration. When the population of the second largest city, Alexandria, is added, they represent 56 percent of the urban population.

TABLE II-7
PERCENTAGE OF URBAN POPULATION BY SIZE OF CITIES, 1947-1976

CLASS (000)	1947		1960		1966		1976	
	No. of Cities	% of Urban	No. of Cities	% of Urban	No. of Cities	% of Urban	No. of Cities	% of Urban
1,000+	1	35	2	50	2	50	2*	56
500-	1	16	--	--	1	5	--	--
100-	7	16	12	23	13	21	16	18
50-	7	8	8	5	9	5	19	8
20-	34	16	46	15	55	15	68	14
20	49	9	53	7	47	5	47	4
TOTAL	99	100	121	100	127	101	152	100
Population Cities 50,000+	16	75	22	78	25	81	37	82

1/ The cities of Giza and Shoubra El Kheima are included in Urban Metropolitan Cairo.

SOURCES: 1947 - 1966 Gamal Ismail Mohamed, Trends and Patterns of Urbanization in Egypt. General Diploma in Demography, Cairo Demographic Center, 1978, p. 27.

1976 computed from CAPMAS, Statistical Indicators, 8 Volumes.

The next class of cities, 100,000-499,000 population, includes 16 cities totalling about three million population (i.e. 18 percent of the urban population). Three of these cities are capitals of markez: Shoubra El Kheima, Kafr El Dawar and Mahalla el Kubra. All three cities are industrial centers and Shoubra El Kheima is part of greater Cairo and Kafr El Dawar is influenced by its proximity to Alexandria. Port Said and Suez are urban governorates.

Only four cities that are capitals of governorates have populations less than 100,000: Damietta, Benha, Kafr El Sheikh and Qena. The remaining 15 cities with populations between 50,000-99,000 are all capitals of markez. This class constitutes 8 percent of the total urban population.

Between 1947 and 1976, the number of urban centers defined as cities increased by 50 percent. (Table II-7) The majority of the increase was in the administrative intermediate cities of 20,000-49,000. However, despite the increase in the number of cities in this class, the proportion of urban population residing in them decreased, indicating greater concentration in larger urban settlements.

The cities of Giza and Shoubra El Kheima which are part of urban metropolitan Cairo registered the highest average annual rate of growth between 1960-1976. They are followed by: Kafr El Dawar in Beheira, an industrial center which also experienced boundary changes; Aswan, because of the Aswan Dam and industrial activities; and Luxor, because of tourism.

Cairo and Alexandria, the two primate cities had a lower average annual rate of growth during the same period than most of the capitals of governorates with the exception of Damanhour (Beheira), Beni Suef and Damietta whose average annual growth rates are lower than their natural increase rates. (Table II-8)

TABLE II-8
POPULATION SIZE, SHARE OF TOTAL URBAN POPULATION AND AVERAGE ANNUAL RATE OF GROWTH BETWEEN 1960-1976 OF CITIES 50,000 AND ABOVE

	1976 Population Size (000)	Average Annual Growth Rate 60-76	% of Total Urban Population
Cairo	5,074	2.63	31.6
Alexandria	2,318	2.69	14.5
Giza	1,233	10.47	7.7
Shoubra El Kheima	394	8.99	2.4
Mahalla El Kubra	--	--	--
(Gharbia)	293	3.15	1.9
Tanta	285	2.75	1.8
Port Said	265	0.43	1.6
Mansoura	258	3.39	1.6
Assiut	214	3.29	1.3
Zagazig	203	3.10	1.3
Suez	194	- 0.30	1.2
Damanhour	189	2.53	1.2
Fayoum	167	3.13	1.0
Kafr El Dawar	161	8.25	1.0
Ismailia	147	--	0.9
Minia	146	2.77	0.9
Aswan	144	7.07	0.9
Beni Suef	119	2.56	0.7
Shebin El Kom	103	4.00	0.6
Sohag	102	3.15	0.6
Qena	94	3.11	0.6
Damietta	94	1.67	0.6
Luxor	93	6.27	0.6
Benha	89	3.33	0.6
Kafr El Sheikh	78	4.46	0.5
Malawy	74	2.18	0.5
Miet Ghamr	72	3.76	0.4
Belbeise	69	3.83	0.4
Qalyub	63	2.36	0.4
Edko	62	3.17	0.4
Matarria	61	0.96	0.4
Dessouk	59	2.50	0.4
Menouf	55	1.73	0.3
Abu Kebir	55	2.53	0.3
Akhmin	53	1.56	0.3
Gerga	51	1.23	0.3
Zefta	50	3.00	0.3
Balkas	50	0.05	0.3

SOURCE: Computed from 1960 Census Data and 1976 data from CAPMAS, Statistical Indicators, 7 Volumes.

C. Internal Migration

1. Migration Pattern

The population of Egyptian cities grew from less than one million in 1800 to over 18 million in 1980. While the urban population grew at a 4 percent growth rate, doubling in 17 years, the average rural growth rate was less than 2 percent doubling every 35 years. Thus, internal migration is responsible for the redistribution of almost one quarter of Egypt's population.[1]

Population movement across boundaries not only increased in volume through time, but also in proportion to the population. Population movements across boundaries amounted to roughly 250,000 in 1907 (3 percent of the population), 1.2 million in 1917 (9 percent of the population), 1.6 million by 1927 (7 percent of total population), slightly levelling to 1.5 million in 1937 (9 percent of the population), increasing to 2.4 million in 1947 (13 percent of the population), to 4.6 million in 1960 (15 percent of the population), 6 million in 1970 and reaching 8 million by 1976. However, these numbers may be slightly exaggerated, as older migrants may be counted as migrants in more than one census.[2]

There is much emphasis in the literature on rural-urban migration and especially migration to the primate cities of Cairo and Alexandria. However, there is also some urban-urban migration, urban-rural migration and even rural-rural migration. A CAPMAS internal migration survey reported that 41.2 percent of all the sample of urban migrants came from urban areas and 57.2 percent came from rural areas. From the total sample of migrants, 74.7 percent were migrants to urban centers. Migrants to rural areas represented 25.3 percent of the sample. From this proportion, 14.7 percent emigrated from urban centers and 84.8 percent from other rural areas.[3]

Of all original migrants (i.e. those who made the decision to migrate and did not accompany migrants), 27 percent moved from urban to urban, 37 percent from rural to urban, 5 percent from urban to rural and 29 percent from rural to rural.[4] Hence, the largest flow of migrants is from rural to urban but there are also substantial movements from urban to urban and from rural to rural.

An estimate of the contribution of net migration to the actual growth of urban population between 1966-1976 indicates that the net migration contribution ranges from 10.9 percent of the actual growth in Damietta to 62.9 percent of the growth in Beheira. (Table II-9) All cities experienced growth from net migration. Thirty-five percent of the growth of urban Cairo Region (Cairo City, Urban Giza Governorate and Urban Qalyubia Governorate) was due to net migration, yet only 6.6 percent of the growth of Cairo City was caused by migration (this is the lowest rate in all Egypt).

TABLE II-9
PERCENTAGE OF POPULATION GROWTH OF URBAN AREAS BY GOVERNORATES CAUSED BY NET MIGRATION BETWEEN 1966-1976

Urban Areas	% Growth by Net Migration	
City of Cairo	6.6	35.4
Qalyubia	59.5	
Giza	64.8	
Alexandria	24.8	
Damietta	10.9	
Dakahlia	35.7	
Sharkia	30.4	
Kafr El Sheikh	34.5	
Gharbia	24.4	
Beheira	62.9	
Menoufia	46.7	
Beni Suef	30.0	
Fayoum	31.9	
Minia	16.2	
Assiut	36.8	
Sohag	negative growth rate	
Kena	36.7	
Aswan	12.5	

SOURCE: Computed from Salem N. Labib, Problems in Rural Development, working paper presented to the Center for Research in Development and Planning of Technology (in Arabic), pp. 14, 16.

During the last decade, the effect of net migration growth was larger in the urban areas of Giza governorate and Qalyubia governorate than in Cairo governorate; 64.8 percent and 59.5 percent respectively. During the five years prior to the census in 1976, around 239,000 moved into Cairo and about 71,000 people moved from Cairo to Alexandria, Suez, Port Said or Ismailia: a proportion of almost 30 percent of recent migrants to Cairo.*

Most immigrants of the last five years to Cairo, Port Said, Suez and Alexandria had their previous residence in urban areas: 62 percent, 72 percent, 81 percent and 66 percent respectively. Almost one quarter of recent immigrants to Suez came from Cairo governorate, and about 40 percent of immigrants to Port Said came from the urban areas of the governorates of Damietta and Dakahlia. All rural governorates contributed a larger proportion of their urban population than their rural population to these four major cities. (See Table II-10 and 11 and Maps II-1 through 5 for a graphic presentation of migration flows.)

It is interesting to note that Cairo proper attracted more rural immigrants than Port Said and Suez in the last five years. Cairo still retains its attractiveness to rural emigrants.

Though a full analysis of origin of recent migrants could not be completed because of lack of data, it is clear that between 1971 and 1976 there has been a trend for the population to move from urban to urban and from smaller to larger urban settlements. Two processes may be occurring. Population from intermediate and small towns is moving into larger centers; and rural populations are moving into second and third class cities as well as to the primate cities.

Unfortunately, census data are insufficient to confirm or reject this hypothesis. Yet the fact that the majority of cities 50,000 and above are experiencing growth from net migration in addition to the high proportion of recent urban migrants to the cities of Cairo, Port Said, Suez and Alexandria and the low growth rates of the rural population all indicate this exchange process of rural population moving to urban, and urban population moving to larger urban centers.

* At the time of writing this report, 1976 migration data were only published for these governorates.

TABLE II-10
PERCENTAGE DISTRIBUTION OF RECENT IMMIGRANTS TO CAIRO, PORT SAID, SUEZ & ALEXANDRIA BY RURAL/URBAN AREA OF GOVERNORATE OF PREVIOUS RESIDENCE IN 1976
(000's)

Previous Residence		Cairo Last 5 Years	Port Said	Suez	Alexandria
Cairo		--	5.4	21.8	8.1
Alexandria		2.9	3.1	3.6	--
Port Said		0.8	--	0.1	1.0
Suez		1.1	0.0	--	1.4
Damietta	- Urban	0.8	17.3	0.4	0.8
	- Rural	0.3	6.7	0.2	0.3
Dakahlia	- Urban	4.6	24.7	5.0	3.6
	- Rural	3.7	12.0	0.6	2.0
Sharkia	- Urban	6.2	3.3	7.9	2.0
	- Rural	4.5	0.7	3.2	1.1
Qalyubia	- Urban	3.8	0.9	8.5	0.7
	- Rural	2.9	0.2	1.5	0.3
Kafr El Sheikh	- Urban	1.0	2.0	0.2	5.2
	- Rural	0.5	1.1	0.1	3.0
Gharbia	- Urban	4.1	7.0	3.9	7.1
	- Rural	2.3	2.5	0.4	3.7
Menoufia	- Urban	5.4	2.2	2.2	3.8
	- Rural	6.1	1.9	0.6	3.3
Beheira	- Urban	1.4	0.3	0.6	15.0
	- Rural	0.8	0.1	0.2	8.3
Ismailia	- Urban	0.8	0.2	0.1	0.5
	- Rural	0.1	0.0	0.1	0.1
Giza	- Urban	4.6	1.2	3.8	0.8
	- Rural	2.0	0.1	1.4	0.2
Beni Suef	- Urban	2.9	1.0	3.8	0.8
	- Rural	2.0	0.4	0.7	0.3
Fayoum	- Urban	3.0	0.4	2.0	0.6
	- Rural	1.9	0.2	0.4	0.2
Minia	- Urban	3.2	0.5	2.9	1.0
	- Rural	1.7	0.1	0.4	0.2
Assiut	- Urban	4.3	1.3	1.1	3.0
	- Rural	3.0	0.7	0.8	1.5
Sohag	- Urban	4.6	0.9	4.5	6.5
	- Rural	3.4	0.9	3.0	3.9
Kena	- Urban	3.3	0.2	3.5	2.6
	- Rural	2.1	0.1	4.5	1.3
Aswan	- Urban	1.6	0.1	0.7	1.4
	- Rural	0.6	0.0	0.2	0.5
Red Sea		0.2	0.0	0.4	0.1
Matrouh		0.1	0.0	0.0	0.7
Sinai		0.5	0.0	0.2	0.1
Wadi El Gedid		0.6	0.0	0.4	0.1
Total Urban Migrants		62.0	72.3	80.8	67.5
Total Rural Migrants		38.0	27.7	19.2	32.5
Delta Urban Migrants ex. Qalyubia & urban govs.		24.3	57.0	20.3	38.0
Delta Rural Migrants		18.4	25.0	5.4	21.8
Upper Egypt Urban ex. Giza		22.9	4.4	18.5	15.9
Upper Egypt Rural ex Giza		14.7	2.4	10.0	8.1

SOURCE: CAPMAS, 1976 Census.

2. Causes of Migration

People are normally prompted to move to new locations for a variety of reasons. Some, having to do with conditions in the original place of residence, are called "push factors" while others, having to do with the expected characteristics of the destination are called "pull factors." Push factors include demographic pressure caused by high natural growth rates, declining economic opportunities, scarcity of services and the grip of rigid customs.[5]

TABLE II-11
THE PERCENTAGE OF RECENT URBAN & RURAL MIGRANTS TO CAIRO, SUEZ, ALEXANDRIA & PORT SAID TO TOTAL URBAN & RURAL POPULATIONS OF GOVERNORATE OF PREVIOUS RESIDENCE IN 1976

	Urban	Rural	No. of Urban	% of Urban	No. of Rural	% of Rural
Damietta	142,707	433,619	41,669	29.2	16,069	3.7
Dakahlia	656,840	2,080,466	77,524	11.8	37,857	1.8
Sharkia	530,051	2,087,887	37,455	7.1	18,833	0.9
Qalyub	685,238	995,599	26,650	3.9	10,260	1.0
Kafr El Sheikh	291,614	1,115,546	10,978	3.8	6,056	0.5
Gharbia	764,307	1,528,933	37,585	4.9	14,707	1.0
Menouf	336,623	1,374,226	24,723	7.3	22,218	1.6
Beheira	595,100	1,869,345	16,531	2.8	8,766	0.5
Ismailia	174,211	179,764	2,951	1.7	495	0.3
Giza	1,378,009	1,038,650	29,180	2.1	7,633	0.7
Beni Suef	278,429	833,703	16,469	5.9	7,015	0.8
Fayoum	275,378	866,501	12,030	4.4	5,816	0.7
Minia	430,462	1,623,643	14,069	3.4	5,225	0.3
Assiut	470,369	1,227,053	17,454	3.7	11,212	0.9
Sohag	409,520	1,515,294	25,989	6.3	18,169	1.2
Qena	392,079	1,317,220	16,287	4.2	14,138	1.1
Aswan	234,340	384,178	6,350	2.7	2,102	0.6
Red Sea	48,438	6,977	1,319	2.7	110	1.6
New Valley	--	--	1,769	--	371	--
Matruh	51,756	60,791	904	1.8	89	0.2
Sinai	--	--	1,583	--	--	--

SOURCE: CAPMAS, 1976 Census.

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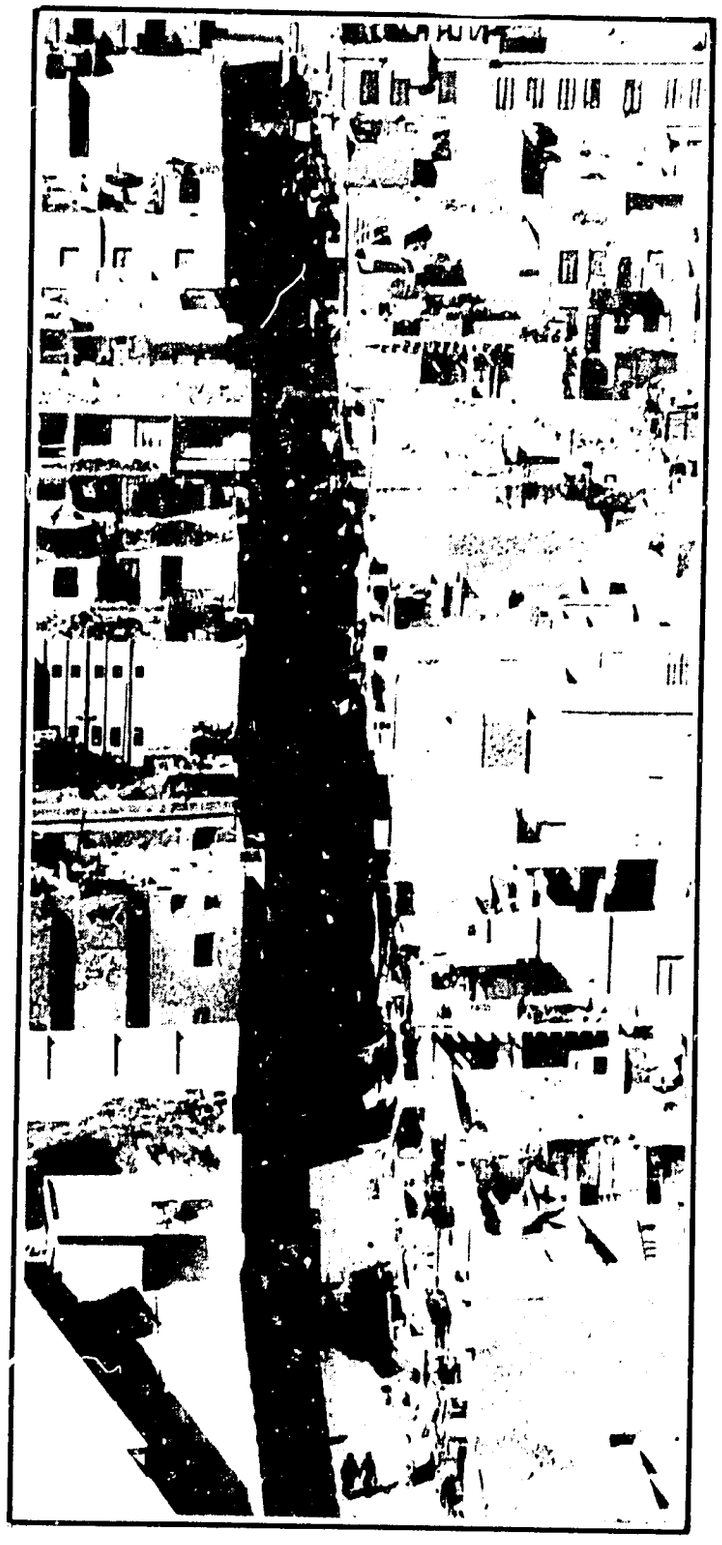
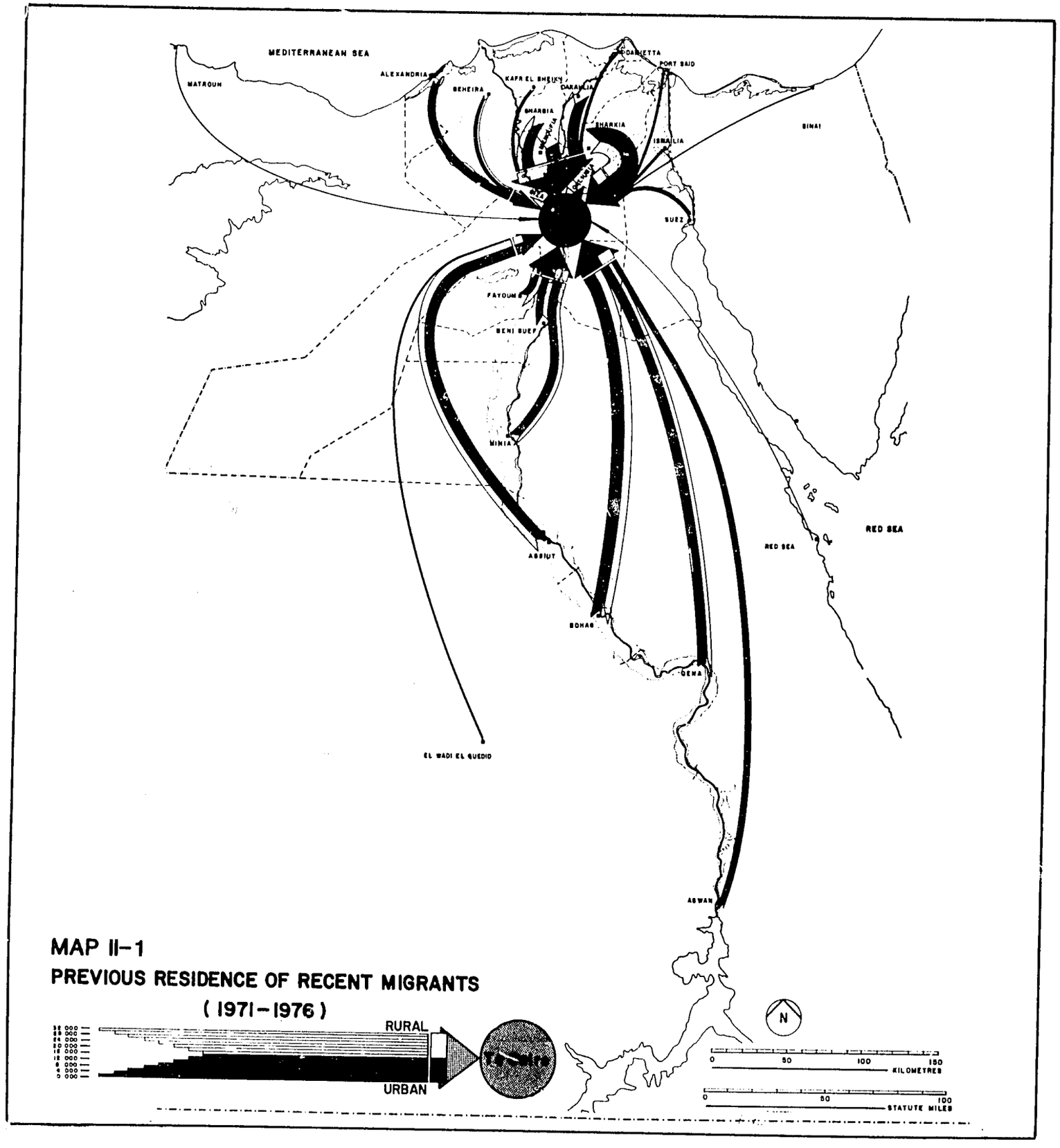
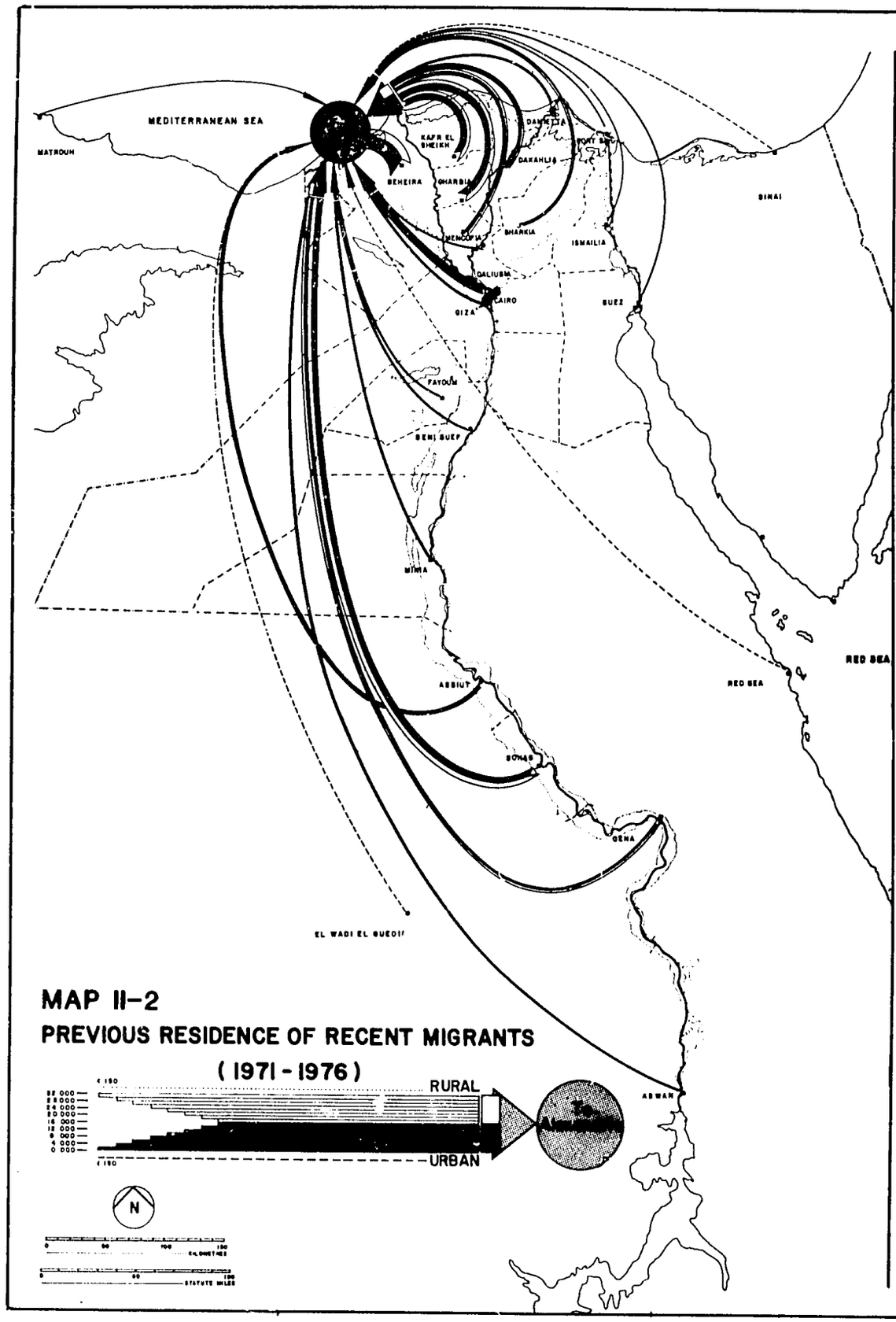
UNDER ANY ASSUMPTION, THE URBAN POPULATION WILL INCREASE FASTER THAN THE RURAL

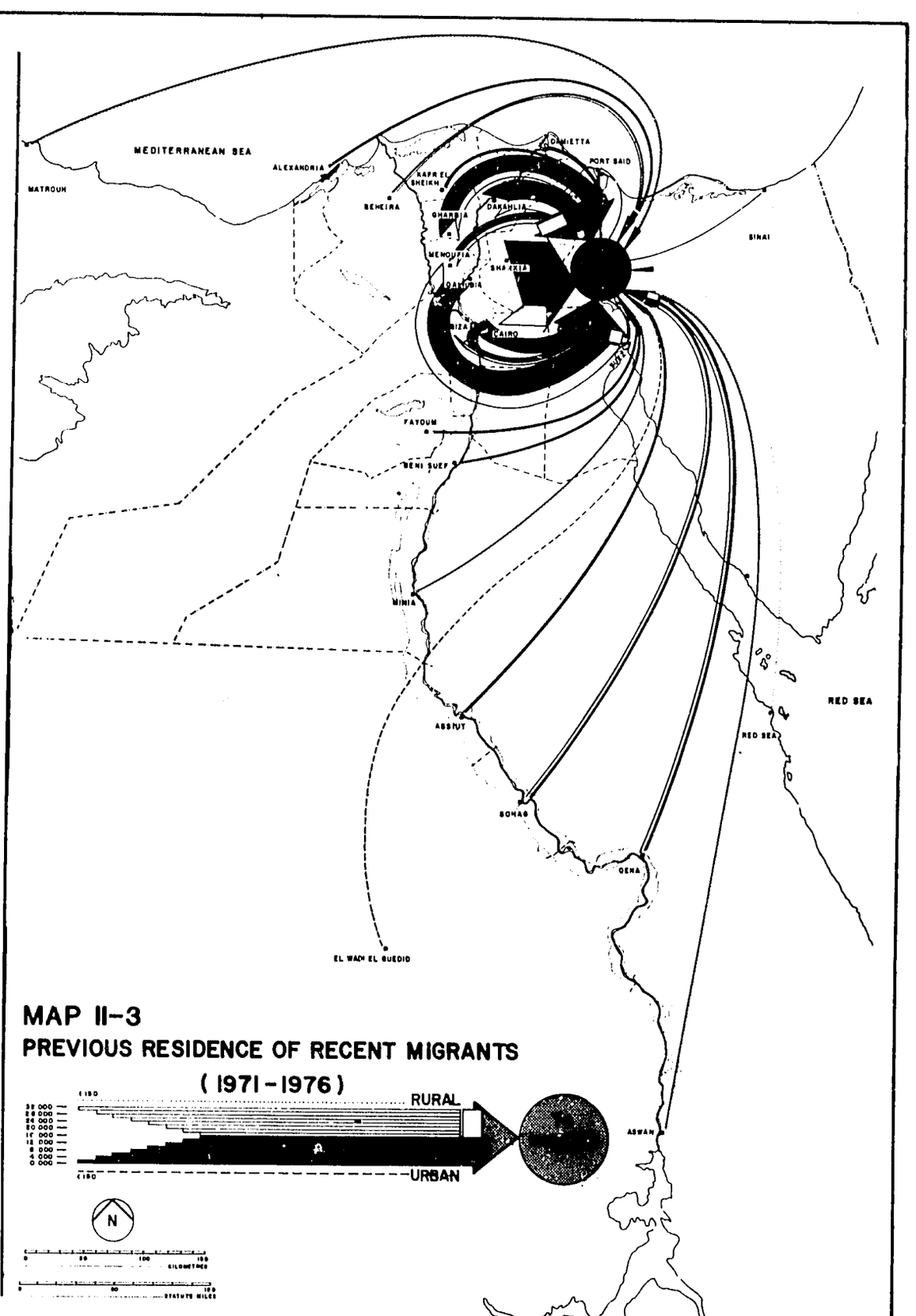




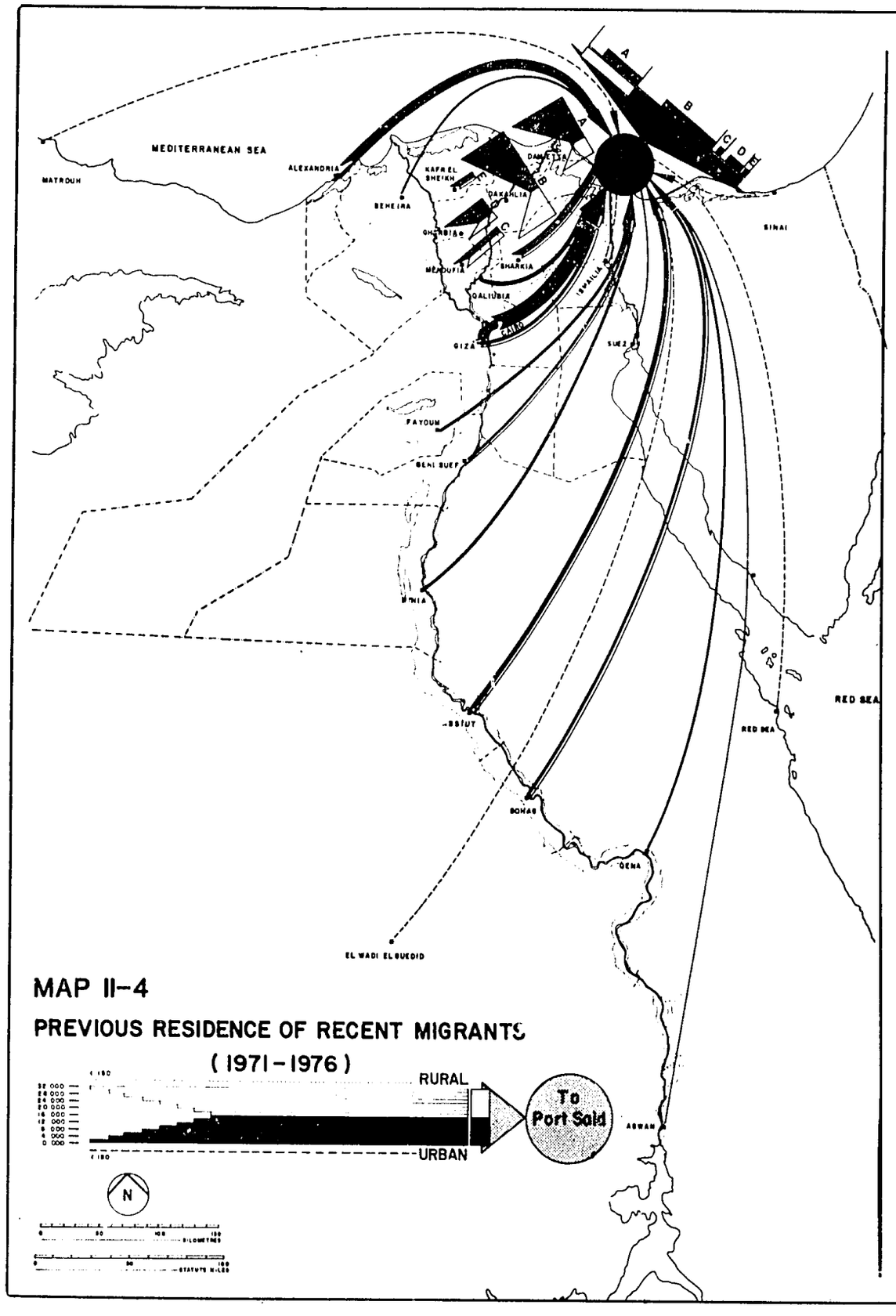
MAP II-1
PREVIOUS RESIDENCE OF RECENT MIGRANTS
(1971-1976)



MAP II-2
PREVIOUS RESIDENCE OF RECENT MIGRANTS
(1971 - 1976)



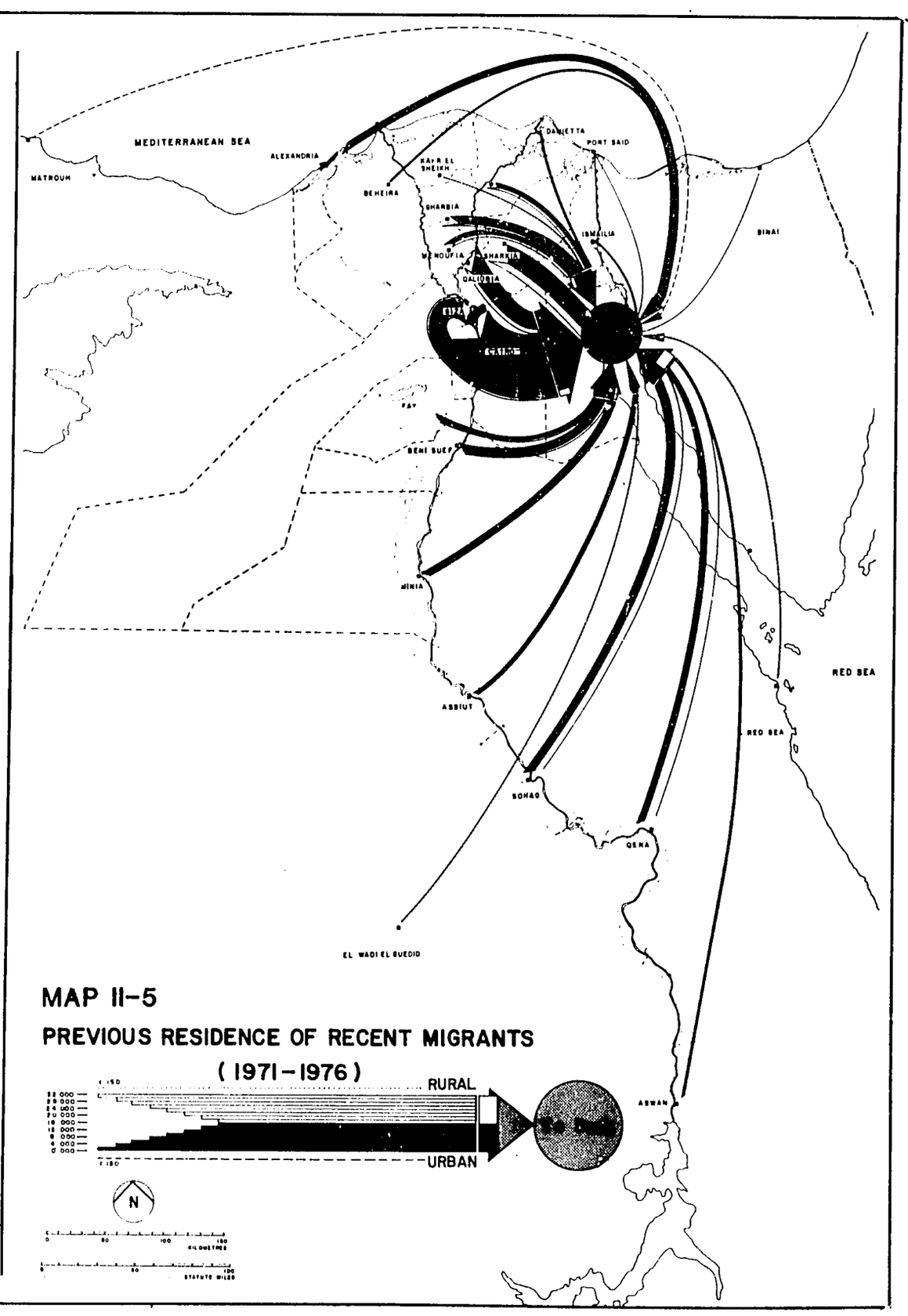
MAP II-3
PREVIOUS RESIDENCE OF RECENT MIGRANTS
(1971 - 1976)



MAP II-4

PREVIOUS RESIDENCE OF RECENT MIGRANTS

(1971 - 1976)



MAP II-5

PREVIOUS RESIDENCE OF RECENT MIGRANTS

(1971 - 1976)

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Pull factors include attractiveness of economic opportunities, including greater employment opportunities and higher wages; the attraction of socio-cultural factors; greater facilities for education, health and recreation, and concentration of political power.[6]

The Internal Migration Survey[7] identified three broad reasons for migration: 1) social reasons which include marriage, divorce, widowhood, or residence with rest of family, or close to family; 2) reasons related to work opportunities; and 3) housing reasons. The main reason for migration given by original male migrants to urban centers was employment opportunities. Original female migrants migrated mostly for social reasons. Only six percent of original urban immigrants reported housing as a cause of migration.

From the review of explanations given by migrants to Cairo and Alexandria for changing their previous residence, the three major reasons mentioned were work and employment, education, and accompanying other migrants. Recent migrants to both Cairo and Alexandria gave similar reasons based on their occupation. The majority of males migrated because of reasons related to work, 65.5 percent of Cairo migrants and 68.8 percent of Alexandria migrants. (Table II-12) The largest proportion of female migrants accompanied original migrants (64 percent of female migrants to Cairo and 67.7 percent of female migrants to Alexandria).

Employment opportunities and work conditions are the dominant motivators for migration to urban areas; and nearly 40 percent of migrants are followers that accompany original migrants.

TABLE II-12
DISTRIBUTION OF OCCUPATIONAL GROUPS BY SEX OF MIGRANTS TO CAIRO & ALEXANDRIA BY THREE MAJOR REASONS FOR CHANGING RESIDENCE FOR POPULATION 15 YEARS & ABOVE IN 1976

Occupation	Work % Cairo	Work % Alexandria	Education % Cairo	Education % Alexandria	Accompanying Migrants % Cairo	Accompanying Migrants % Alexandria	Total Migrants (000) % Cairo	Total Migrants (000) % Alexandria
Technical & Scientific Professions	M. 56.8	62.7	12.4	10.8	16.7	17.1	67.5	18.0
	F. 10.0	11.3	7.7	7.1	52.7	54.3	18.9	5.2
Administrative & Business Directors	M. 63.5	75.2	11.3	8.2	8.6	7.9	16.6	4.0
	F. 13.3	13.3	5.7	5.2	50.2	50.6	1.6	0.4
Clerks	M. 70.1	73.5	3.8	3.2	12.7	14.7	76.2	19.1
	F. 9.4	8.7	3.6	3.1	59.2	60.2	12.4	2.4
Sales Occupations	M. 77.5	78.2	1.0	1.3	10.5	12.5	64.5	16.2
	F. 22.0	18.1	0.9	1.3	45.7	54.2	3.4	0.6
Service Occupations	M. 82.6	85.8	1.0	0.8	7.3	8.1	99.3	29.9
	F. 60.2	60.5	0.6	0.5	24.4	26.2	14.1	3.3
Agriculture & Fishing	M. 63.0	64.4	1.7	1.3	12.0	20.5	6.4	10.3
	F. 6.7	32.3	0.6	--	87.3	42.6	0.7	0.4
Production & Transport	M. 74.7	78.0	0.6	0.9	14.2	14.1	199.3	69.8
	F. 12.3	16.3	0.8	0.8	62.2	61.8	3.6	1.5
Unspecified	M. 39.6	44.3	5.8	4.0	41.4	41.7	18.8	8.0
	F. 8.3	8.4	4.6	4.3	70.2	69.3	6.8	2.2
Total Occupied	M. 71.9	74.9	3.1	2.5	13.3	14.8	548.6	175.3
	F. 22.0	21.8	4.0	3.7	50.0	51.8	61.5	16.0
Unoccupied	M. 35.5	42.8	16.9	19.7	36.1	28.2	118.3	41.2
	F. 3.1	2.9	1.6	2.6	65.2	69.2	541.1	167.7
Total Recent	M. 65.5	68.8	5.6	5.8	17.4	17.3	666.9	216.5
	F. 5.1	4.5	1.9	2.7	63.6	67.7	602.6	183.7
	T. 36.8	39.3	3.8	4.3	39.3	40.5	1,269.6	400.3

SOURCE: NUPS analysis from 1976 Census.

TABLE II-13
AGE STRUCTURE OF RECENT MIGRANTS (Five Years or Less) AND TOTAL POPULATIONS OF CAIRO & ALEXANDRIA IN 1976

Age	Cairo Recent Migrants %	Cairo Total Population %	Alexandria Recent Migrants %	Alexandria Total Population %
0 - 4	12.0	11.7	11.8	11.8
5 - 9	6.2	11.0	6.1	11.2
10 - 14	7.8	12.8	7.3	12.8
15 - 19	20.0	11.9	21.4	11.6
20 - 24	20.1	10.4	20.7	10.6
25 - 29	12.5	8.3	12.4	8.5
30 - 34	6.4	6.5	6.1	6.7
35 - 39	4.4	6.0	3.9	5.5
40 - 44	2.9	5.5	2.7	5.4
45 - 49	2.3	4.3	2.3	5.4
50 - 54	1.6	3.9	1.6	4.2
55 - 59	1.4	2.4	1.4	2.3
60 - 64	1.0	2.3	1.0	2.5
65+	1.5	3.1	1.4	3.1
TOTAL POPULATION	239,218	5,074,017	76,542	2,317,340

SOURCE: NUPS analysis from 1976 Census.

3. Characteristics of Migrants

It is important to detect the characteristics of migrants to be able to identify the people that are more apt to be physically mobile. It is also important to detect the effect of migration on the receiving population. Are people who move substantially different in socio-economic character from the receiving community; or are they the same? If migrants shared the same characteristics as the receiving community, then migration would only increase the absolute numbers but does not necessarily change the composition of the resident population.

To answer these questions, recent migrants to Cairo and Alexandria were compared to the resident populations of the two cities in terms of age, education and occupation structures.

TABLE II-14
EDUCATIONAL STRUCTURE OF RECENT MIGRANTS (LESS THAN FIVE YEARS) AND TOTAL POPULATIONS OF CAIRO & ALEXANDRIA IN 1976 (TEN YEARS & ABOVE)

	Cairo		Alexandria	
	Recent Migrants %	Total Population %	Recent Migrants %	Total Population %
Illiterate	48.0	34.0	47.2	36.9
Read & Write	17.7	25.0	16.3	27.3
Primary Education	5.4	12.6	5.0	12.0
Intermediary	5.0	8.7	4.2	7.0
Secondary	16.7	12.1	19.8	10.0
2 Years Above Secondary	0.9	0.7	0.6	0.5
Bachelor Degree	4.7	5.3	5.0	3.8
Graduate Degree	0.3	0.3	0.3	--
Unspecified	1.4	1.3	1.9	2.4
TOTAL POPULATION	207,724	3,921,198	66,773	1,791,205

SOURCE: NUPS analysis from 1976 Census.

Migrants tend to be concentrated in young age groups, between 15-29 years of age. (Table II-13) This age group is critical for production and reproduction. Migrants increase the the labor force participation rates in the cities as well as increase the proportion of those in the reproductive age which affects the general overall birth rates of the city.

There is greater concentration of illiterates and those with secondary education and above among recent migrants, to Cairo and Alexandria than for the total population. (Table II-14) That means that these two categories are more mobile than those in the middle categories. Also, migration tends to increase the proportion of illiterates in the cities as well as those with secondary education and above. Illiterates are two to three times more likely to be female than male, depending on age group.

Examining the educational status of the recent young (15-34 years) migrants to both Cairo and Alexandria indicates a clear distinction, especially in Alexandria, between the age groups 15-24 and 25-34. Younger migrants (15-24), both males and females tend to have more formal education than the 25-34 year old migrants. This is the age group that is attracted by the available educational institutions in both primate cities. (Table II-15)

The occupational structure of recent migrants to the two primate cities does not

TABLE II-15
EDUCATION STATUS OF RECENT MIGRANTS TO ALEXANDRIA AND CAIRO
AGED 15 - 34, BY SEX, IN 1976

ALEXANDRIA

	15-19		20-24		25-29		30-34	
	M/%	F/%	M/%	F/%	M/%	F/%	M/%	F/%
Illiterate	23.9	60.9	16.5	59.1	34.3	64.8	34.4	66.6
Read & Write	10.9	7.9	9.8	10.1	27.8	9.9	27.3	9.7
Formal Education	63.4	28.8	72.6	29.2	36.9	23.4	37.2	21.7
Unspecified	1.8	2.4	1.1	1.7	1.0	1.9	1.1	2.0
Total Population	4,711	5,745	8,088	10,262	6,299	5,564	4,165	2,457

CAIRO

	15-19		20-24		25-29		30-34	
	M/%	F/%	M/%	F/%	M/%	F/%	M/%	F/%
Illiterate	30.6	65.7	20.2	60.2	29.1	62.4	29.7	65.5
Read & Write	14.7	9.7	11.4	11.6	25.5	11.4	27.1	10.8
Formal Education	53.7	22.7	67.7	27.1	44.7	24.9	42.5	21.9
Unspecified	1.1	1.9	0.8	1.1	0.7	1.3	0.7	1.8
Total Population	11,927	17,804	23,569	30,577	21,807	17,432	12,871	7,590

SOURCE: NUPS analysis from 1976 Census.

differ substantially from the occupational structure of the receiving populations. There is, however, slight concentration in top managerial and professional occupations and much more so in service occupations. (Table II-16)

D. Additional Characteristics of the Population

The demographic and social make-up of the population is inextricably entwined with economic performance. It is the overall quality of life which presumably governments wish to improve with their policy choices. These include

TABLE II-16
OCCUPATIONAL STRUCTURE OF MIGRANT & TOTAL POPULATIONS OF CAIRO & ALEXANDRIA — 1976
(15 YEARS & ABOVE)

Occupation	CAIRO Recent Migrants %	CAIRO Total Population %	ALEXANDRIA Recent Migrants %	ALEXANDRIA Total Population %
Technical & Scientific Professions	14.2	14.4	12.1	11.0
High Management & Administration	3.0	2.6	2.3	1.8
Clerks	14.5	15.3	11.3	12.5
Sales Occupations	11.1	10.0	8.8	9.1
Services Occupations	18.6	12.9	17.3	11.5
Agriculture & Fishing	1.2	1.0	5.6	4.4
Production & Transport	33.3	36.5	37.3	39.5
Unspecified	4.2	7.3	5.3	10.3
% Occupied	48.1	44.6	47.8	44.7
% Unoccupied	51.9	55.4	52.2	55.3
Total Occupied	610,095	1,459,847	191,368	668,371
Total Unoccupied	659,474	1,812,612	208,892	827,151
Total Population	1,269,569	3,272,459	400,260	1,459,522

SOURCE: NUPS Analysis of 1976 Census.

such components as cultural values, religious practices, the sense of distributive justice, the sense of personal security, the level of education and the level of health.

These components are both part of the resource base on which increased economic performance can be built as well as ends in themselves, as non-economic aspects of the quality of life. Indicators chosen to measure these components are a particularly difficult problem for two reasons:

i) They are at the same time means to an end (increased economic production, an outcome of increasing education and health levels) and an end in themselves. Data chosen as an indicator normally cannot measure both well. Further, available research does not adequately quantify the extent to which any or all of these components can be directly tied to economic production in Egypt.

ii) When considered as a means, but particularly as an end, most data are highly subjective. Most data can be collected only by complicated survey instruments which are very expensive to administer and analyze and which normally have considerable intellectual problems. Particularly because of their cost, these data are often unavailable for Egypt, particularly for sub-national levels.

This report, therefore, makes no attempt to provide data on some important, but unfortunately unquantifiable social components of a quality-of-life measure (cultural values, religion, sense of justice, or sense of personal security). Data are provided for basic demographic variables not discussed elsewhere in the report, as well as data on the educational and health characteristics of the population.

1. Demographic Data

Birth, death and fertility rates are needed to be able to project the total size of the population for a given point in the future. (See the more complete discussion on projections in

TABLE II-17
POPULATION OF EGYPT IN 1976

	Urban	Rural	Total
Sex Ratio	105	102	104
Distribution	43.7% (16,036,403)	56.3% (20,589,801)	100% (36,626,204)
Density[1]	9,993	609	
Age Structure			
6	15.4% (2.4m)	18.8% (3.9m)	17.3% (6.3m)
6-64	81.4% (13.0m)	77.3% (15.9m)	79.1% (28.9m)
65+	3.2% (.5m)	3.9% (.8m)	3.6% (1.3m)

Age & Sex Structure of Total Population

	Males %	Females %
15	40.5	39.4
15-44	42.8	43.6
45-59	10.7	10.5
60-64	2.6	2.7
65+	3.4	3.8

Level of Education, by Sex, for 10 Years & Above

	Males %	Females %	Total %
Illiterate	40.0 (5,726,187)	71.0 (9,367,828)	56.0 (15,094,015)
Formal Educ. Below Univ.	25.0 (3,416,495)	13.0 (1,726,481)	19.0 (5,142,970)
University Degree	3.0 (420,227)	1.0 (123,705)	2.0 (543,932)
Post Graduate Degree	(19,099)	(3,204)	(22,303)

Illiteracy Rates by Age & Sex (10 & Above)

Age	Males %	Females %	Total %
10-14	26.0	48.0	36.0
15-19	36.0	57.0	46.0
20-39	42.0	73.0	58.0
40-59	65.0	92.0	79.0

Educational Level by Rural-Urban Residence

	Urban %	Rural %	Total %
Illiterate	39.2% (4.5m)	70.3% (10.3m)	56.3% (15.0m)
R. & W.	24.9% (3.0m)	17.1% (2.5m)	20.6% (5.5m)
Formal Educ.	34.3% (4.1m)	10.6% (1.6m)	21.3% (5.7m)
N. I.	1.6	1.9	1.8

SOURCE: UNFPA, 1980 Egypt Background Paper for Population Assistance, Paper Assessment Mission.[1] Vol. II, Table 101, p. 5.

the following section.) In addition, a basic benchmark figure for total population must be available. In the case of each of these statistics there is normally an undercount or under-registration, especially in rural areas, and data published may or may not be adjusted for the undercount. Frequently, the publication will not indicate whether it is an adjusted figure. Data throughout this section is reported as it appears in the various sources; discrepancies will appear due to different methodologies and sources of data. Sometimes these discrepancies are considerable.

The population of Egypt was enumerated Novermber 22, 1976 at 36,626,204. (Table II-17) The US Bureau of the Census analysis of the undercount (3.7 percent) produced an adjusted total of 38,036,000, very close to CAPMAS' own analysis of the undercount. Similarly, birth and death records are under-registered (US Census estimates 3 percent in 1979 for births and 7 percent for deaths).[8] Table II-18 presents data for National level birth, death, rate of natural increase and fertility rates. Table II-19 shows the rate of National population growth from 1950 to 1981.

TABLE II-18
BIRTH, DEATH, FERTILITY AND NATURAL INCREASE RATES FOR EGYPT
1952 -- 1981, VARIOUS SOURCES

YEAR YEAR	Birth Rate(s)/Source Birth Rate(s)/Source (Per 1,000 Population)	Death Rate(s)/Source Death Rate(s)/Source (Per 1,000 Population)	Rate of Natural Increase/Source (Per 1,000 Population)	Fertility Rate(s)/ Source1/
1952	45.2/2/	17.8/2/	27.4/2/	7.2/5/
1960	43.1/1 44/3/	16.9/2/ 19/3/	26.2/2/ 25/3/	6.8 (1966)/5/
1965	41.7/2/	14.1/2/	27.6/2/	
1970	35.1/2/	15.1/2/	20.0/2/	
1975	36.0/2/ 37.7/6/	12.1/2/ 12.3/6/	23 9/2/	
1976	35.4/2/	11.7/2/	24.7/2/	5.4/5/
1977	38.4/2/ 36/3/ 37.7/6/	11.9/2/ 13/3/	26.5/2/ 23/3/	4.8/3/
1978	37/3/	10.6/2/ 13/3/	28.1/2/ 24/3/	5.0/3/
1979	37/3/ 43/4/	12/3/ 12/4/	25/3/ 31/4/	4.9/3/
1980				
1981	41-42/4/	12/4/	29-30/4/	

1/ Fertility rate is defined as the number of live births at end of childbearing years (45-49).

SOURCES: CAPMAS: Statement of the Population Situation on April 1, 1980.[2]

World Bank. World Development Report.[3] Issues for 1979, 1980, 1981.

U.S. Bureau of the Census. Demographic Estimates for Countries with a Population of 10 Million or More: 1981.[4] Washington, DC 1981.

General Electric -- HLMPO. Egypt: The Effects of Population Factors on Social and Economic Development.[5] RAPID, 1979. p. 6.

United Nations. Department of International Economic and Social Affairs. World Population Trends and Policies: 1979 Monitoring Report.[6] vol. 1, 1980. pp. 35 and 72.

These basic data do not yet show the expected downturn in fertility and in overall population growth rates which began to rise after the 1973 war. It must be pointed out, however, that these data are not as recent as could be wished and are based on estimation and projection techniques with wide margins for error.

The expected difference between urban and rural fertility has not yet appeared, though this observation is based on rather weak and old data.[9] This may be due to the high rate of migration to Egyptian cities. Migrants have a slightly higher fertility rate than non-migrant urban dwellers.[10] Also, many rural migrants do not radically change lifestyles when they move to cities. They tend to cluster with other rural folk, are more likely to seclude women, and those women who do work tend to work at jobs that do not prevent child-raising.[11] Presumably, this phenomenon will diminish as migrants are slowly assimilated into urban lifestyles.

These urban lifestyles do depress actual fertility, although it cannot be said that they depress desired fertility. In fact, lower urban fertility may reflect economic need rather than preference. If so, fertility may continue to rise with improving economic conditions, at least in the short term. Those individuals who participate in the non-agricultural labor force have

TABLE II-19
AVERAGE ANNUAL COMPOUND GROWTH RATE
OF EGYPTIAN POPULATION
(%)

1950-55	2.4
1955-60	2.4
1960-65	2.4
1965-70	2.2
1970-75	2.0
1975-80	2.7
1980-81	3.0

SOURCE: U.S. Bureau of the Census, Demographic Estimates for Countries with a Population of 10 Million of More, 1981. Washington, DC, 1981.

lower fertility rates. Those that are educated have lower fertility rates, and urban dwellers, especially females, are far more likely to be educated (at any level) than their rural counterparts.[12] Again, most of the data used for these analyses are at least 10 years old.

a. Age Structure. The age structure of the population is important for planning for employment, for schools, and for consumption patterns as well as other planning applications. Egypt's population is a young one, due to relatively high fertility and mortality rates. It was younger in 1960, however, than it was in 1976. (See Figure II-3 in following section on population projections for age structures for 1960 and for 1976.) Rising fertility after 1976 has produced an even younger population than the 1976 Census data would indicate. In 1960, the urban population was very much younger than the rural, especially in ages 5 to 30. The less-than-5 group was about the same, reflecting higher mortality in this group. The 1976 Census data show higher urban population in ages 15 to 40, presumably the result of patterns of decreasing urban fertility, increasing rural fertility, and higher rural mortality in the younger age groups. In addition, it probably reflects the fact that younger people migrate to cities more than do older people. (Table II-13)

Tables II-20 through 22 show the age structure by broad age classes for rural governorates, for cities 50,000 and above population, and for regions. Table II-22 shows sharp drops in the under 12 group for governorates in northern Egypt, and more modest but still significant drops for that group in southern Egypt. This pattern is even more obvious in cities 50,000 and over, all of which had declines in the under 12 category between 1960 and 1976. These declines were more marked in Delta cities than in southern Egyptian cities, with some variation in the degree of decline for northern cities outside the Delta.

b. Sex Structure. It is useful to know the sex structure in order to predict fertility and overall population growth. In addition, women are more likely to be dependent on the working population rather than part of the workforce in

TABLE II-20a

POPULATION SIZE, SEX RATIO, AND AGE STRUCTURE OF RURAL GOVERNORATES, 1960 & 1976

GOVERNORATES		POPULATION SIZE			AGE STRUCTURE					
		SEX			<12		12-65		65+	
		MALES	FEMALES	RATIO 1/	N	%	N	%	N	%
Sharkia										
Urban	1960	149,202	146,163	102	112,112	38.0	174,796	59.2	8,461	2.9
	1976	271,187	258,864	105	153,752	29.0	364,289	68.7	12,313	2.3
Rural	1960	764,676	759,757	101	554,417	36.4	917,848	60.2	52,168	3.4
	1976	1,063,673	1,024,214	104	710,490	34.0	1,320,967	63.2	59,397	2.8
Menoufia										
Urban	1960	92,646	91,011	102	65,895	35.9	110,873	60.4	6,892	3.7
	1976	171,493	165,130	104	97,451	28.9	228,244	67.8	10,996	3.3
Rural	1960	583,765	580,528	101	400,214	34.4	706,801	60.7	57,278	4.9
	1976	698,138	676,088	103	443,060	32.2	870,712	63.3	60,519	4.4
Kafr El Sheikh										
Urban	1960	82,864	82,486	100	60,975	36.9	[illegible]	60.3	4,587	2.8
	1976	148,073	143,541	103	86,829	29.7	198,479	68.0	6,551	2.2
Rural	1960	400,044	407,622	98	296,831	36.7	487,885	60.4	22,870	2.8
	1976	554,572	560,974	99	379,246	34.1	705,917	63.5	26,446	2.4
Giza										
Urban	1960	219,260	214,365	102	153,026	35.3	270,403	62.4	10,181	2.3
	1976	706,197	671,812	104	420,059	30.4	932,132	67.6	27,086	2.0
Rural	1960	454,171	448,622	101	316,703	35.1	551,450	61.1	34,640	3.8
	1976	536,159	502,491	107	367,424	35.3	642,675	61.8	29,871	2.9
Qalyub										
Urban	1960	130,676	119,836	109	92,374	36.9	151,518	60.5	6,614	2.6
	1976	355,576	329,662	108	228,257	33.3	444,620	64.9	11,709	1.7
Rural	1960	372,761	364,784	102	262,294	35.6	445,805	60.4	29,445	4.0
	1976	514,540	481,059	107	332,824	33.6	623,209	63.0	33,387	3.4
Beheira										
Urban	1960	154,466	153,050	101	115,167	37.4	183,470	60.0	8,878	2.9
	1976	303,979	291,122	104	194,370	29.7	445,191	68.1	13,897	2.1
Rural	1960	679,952	699,211	97	492,663	35.7	842,753	61.1	42,715	3.1
	1976	935,829	933,506	100	652,741	35.0	1,166,629	62.6	44,464	2.4
Dakahlia										
Urban	1960	182,553	181,670	101	134,797	37.0	219,021	60.1	10 282	2.8
	1976	334,476	322,364	104	181,712	27.7	457,927	69.9	15,633	2.4
Rural	1960	830,054	820,606	101	621,727	36.7	978,808	57.8	49,884	2.9
	1976	1,053,272	1,027,194	102	691,225	33.3	1,330,207	64.0	56,052	2.7
Gharbia										
Urban	1960	243,897	240,584	101	180,252	37.2	291,327	60.1	12,902	2.7
	1976	388,035	376,272	103	207,478	27.1	540,098	70.5	18,761	2.4
Rural	1960	610,716	620,015	98	437,309	35.5	749,538	60.9	43,884	3.6
	1976	771,478	757,455	102	490,474	32.1	988,650	64.7	48,842	3.2

(Continued)

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TABLE II-20b

POPULATION SIZE, SEX RATIO, AND AGE STRUCTURE OF RURAL GOVERNORATES, 1960 & 1976

GOVERNORATES		POPULATION SIZE			AGE STRUCTURE					
		SEX			<12					
		MALES	FEMALES	RATIO 1/	N	%	N	%	N	%
Damietta										
Urban	1960	46,423	47,291	98	35,490	36.7	58,291	60.3	2,929	3.0
	1976	72,451	70,256	103	39,944	28.0	98,333	68.2	4,538	3.2
Rural	1960	148,774	142,474	104	110,359	37.9	172,190	59.1	8,694	3.0
	1976	220,586	213,033	103	141,958	34.3	261,433	63.1	10,909	2.6
Beni Suef										
Urban	1960	91,251	92,336	99	62,650	34.1	114,178	62.2	6,759	3.7
	1976	140,277	136,152	103	85,501	31.0	181,972	65.9	8,720	3.1
Rural	1960	331,331	344,914	96	214,952	31.8	433,346	64.1	27,947	4.1
	1976	419,856	413,847	101	282,012	33.9	519,282	62.4	31,128	3.7
Minia										
Urban	1960	135,728	132,437	102	92,290	34.4	166,213	62.0	9,549	3.6
	1976	221,939	208,523	106	130,259	30.2	287,344	66.7	13,227	3.1
Rural	1960	648,941	643,205	101	416,405	32.2	822,363	63.6	53,366	4.1
	1976	828,986	794,657	104	547,734	33.7	1,018,656	62.7	58,519	3.6
Fayoum										
Urban	1960	80,367	81,476	99	56,614	35.0	98,339	60.8	6,889	4.2
	1976	141,160	134,218	105	89,241	32.3	177,396	64.2	9,791	3.5
Rural	1960	335,514	341,806	98	229,498	33.9	418,590	61.8	29,231	4.3
	1976	442,924	423,577	105	311,719	36.1	519,484	60.1	32,614	3.8
Assiut										
Urban	1960	149,244	140,335	106	100,889	34.8	181,148	62.6	7,532	2.6
	1976	247,473	222,896	111	40,951	30.0	313,903	66.8	15,178	3.2
Rural	1960	527,679	512,340	103	359,632	34.6	650,457	62.5	29,930	2.9
	1976	626,105	600,948	104	428,581	35.0	748,526	61.1	48,239	3.9
Sohag										
Urban	1960	144,766	140,977	103	101,527	35.5	173,037	60.5	11,179	3.9
	1976	212,839	196,681	108	129,152	31.9	262,341	64.7	13,798	3.4
Rural	1960	642,656	650,459	99	448,064	34.6	807,549	62.4	37,502	2.9
	1976	757,679	757,615	100	508,717	33.5	950,273	62.5	60,679	4.0
Qena										
Urban	1960	94,205	90,580	104	62,820	34.0	114,219	54.9	7,746	4.2
	1976	202,394	189,685	107	118,241	30.2	259,379	66.3	13,432	3.4
Rural	1960	579,740	586,832	99	403,748	34.[illegible]	712,849	61.1	50,976	4.4
	1976	657,903	659,317	100	435,848	33.2	824,704	62.7	53,764	4.1
Aswan										
Urban	1960	51,247	46,655	110	33,856	34.6	61,139	62.4	2,906	3.0
	1976	120,262	114,078	105	75,241	32.8	148,886	64.8	5,530	2.4
Rural	1960	137,471	149,977	92	98,293	34.2	174,462	60.7	14,690	5.1
	1976	187,903	196,275	96	128,448	32.9	244,635	62.7	17,192	4.4

1/ Male population as a percentage of female population.

SOURCE: CAPMAS, General Census of 1960 and 1976.

countries such as Egypt (although formal statistics often exaggerate this since some are more likely to be "informally" employed). (Table II-23)

The 1976 Census shows a national sex ratio of 104 males for every 100 females. In urban areas there were 105 males for every 100 females, and in rural areas 102. However, when the data are broken down into age groups, it becomes clear that more females survive into childbearing age than do males:

AGE	MALES	FEMALES
15	40.5%	39.4%
15-44	42.8	43.6
45-59	10.7	10.5
60-64	2.6	2.7
65+	3.4	3.8
	100.0	100.0

Table II-20 presents sex ratios for the rural governorates for 1960 and 1976, for both urban and rural areas. Table II-21 presents sex ratios for cities 50,000 and above for 1960 and 1976, and Table II-22 presents ratios for regions in 1976.

c. Family Formation. Data on family formation is important for predicting future population growth and for anticipating demand for services, including housing. Some of the more important data items were not available for this analysis, including age at first marriage, age at first birthing for women and number of children ever born. The 1960 Census does provide data on average size of households — the 1976 Census for urban and for rural households. (See Tables II-24 through 26 and Part Four, Tables I-1 and I-2)

The average household size is increasing for the nation and for most governorates. The greatest part of the increase is in rural portions of both urban and rural governorates, and in fact, there is no clear pattern of increase in cities 50,000 and over (Part Four, Table I-3). The largest cities show no significant change between

TABLE II-21a
POPULATION SIZE, SEX RATIO, AND AGE STRUCTURE OF CITIES 50,000 & ABOVE IN 1960 AND 1976

CITIES		POPULATION SIZE			AGE STRUCTURE					
		SEX			<12		12-65		65+	
		MALES	FEMALES	RATIO*	N	%	N	%	N	%
Cairo	1960	1,714,505	1,634,474	105	1,180,886	35.3	2,082,426	62.2	85,411	2.5
	1976	2,595,475	2,478,541	105	1,386,532	27.3	3,578,706	70.4	119,225	2.3
Alexandria	1960	769,705	746,529	103	537,721	35.5	937,406	61.8	41,053	2.7
	1976	1,188,840	1,128,865	105	641,134	27.[illegible]	1,623,678	70.0	53,843	2.3
Port Said	1960	125,460	119,858	105	68,981	28.1	149,828	61.1	6,538	2.7
	1976	134,450	128,310	105	64,259	24.5	190,764	72.6	7,597	2.9
Suez	1960	105,452	98,158	107	81,144	39.2	118,420	58.2	4,045	2.0
	1976	102,894	91,071	113	58,137	30.0	131,849	68.0	4,015	2.1
Giza	1960	126,764	123,770	102	83,493	33.3	161,277	64.4	5,774	2.3
	1976	633,076	599,578	--	370,120	30.0	839,381	68.1	23,153	1.9
Benha	1960	26,763	25,923	103	101,247	36.5	31,907	60.6	1,533	2.9
	1976	45,966	42,996	107	24,648	27.7	62,384	70.1	1,960	2.2
Shoubra El Kheima	1960	31,365	28,028	112	37,929	37.7	60,726	60.4	1,948	2.0
	1976	205,180	188,520	109	143,832	36.5	245,370	62.3	4,498	1.1
Qalyub	1960	21,888	21,314	103	15,593	36.1	26,078	60.4	1,531	3.5
	1976	32,473	30,266	107	19,872	31.7	41,269	65.8	1,598	2.5
Damanhour	1960	64,023	62,577	102	46,099	36.4	76,826	60.7	3,674	2.9
	1976	96,940	91,987	105	57,622	30.5	125,775	66.6	5,530	2.9
Edku	1960	19,340	18,437	105	14,612	38.7	21,857	57.8	1,308	3.5
	1976	32,255	29,975	108	19,833	31.9	41,269	66.3	1,128	1.8
Kafr El Dawar	1960	22,034	21,183	104	18,241	42.2	24,259	56.1	717	1.6
	1976	82,4[illegible]1	78,133	105	46,001	28.6	112,516	70.1	2,037	1.3
Zagazig	1960	63,092	61,325	103	47,285	38.0	75,833	60.9	3,380	2.7
	1976	104,500	98,137	106	51,865	25.6	146,309	72.2	4,463	2.2
Abu Kebir	1960	18,386	18,414	100	14,119	38.4	21,622	58.8	1,050	2.9
	1976	27,640	27,215	101	17,189	31.3	36,445	66.4	1,221	2.2
Belbeis	1960	19,382	18,559	104	14,832	39.1	21,903	57.7	1,206	3.2
	1976	35,982	33,398	107	22,880	33.0	44,939	64.8	1,471	2.1
Shebin El Kom	1960	28,239	26,671	106	19,527	35.6	33,490	61.0	1,893	3.4
	1976	53,115	49,729	107	27,380	26.6	72,618	70.6	2,846	2.8
Menouf	1960	21,028	20,886	101	15,514	37.0	24,965	59.6	1,435	3.4
	1976	28,096	27,035	104	15,944	28.9	37,499	68.0	1,688	3.1
Kafr El Sheikh	1960	19,479	19,113	102	14,438	37.5	23,180	60.[illegible]	874	2.3
	1976	40,241	37,296	108	21,344	27.5	54,710	70.5	1,493	1.9
Dessouk	1960	19,679	19,794	99	14,302	36.2	24,043	61.0	1,127	2.9
	1976	30,376	28,274	107	16,507	28.1	40,974	69.9	1,169	2.0
Mansoura	1960	27,010	25,478	106	62,816	39.0	94,297	58.6	3,707	2.3
	1976	31,936	29,217	109	21,134	34.6	38,753	63.4	1,266	2.1
Belkas	1960	8,409	8,153	103	18,958	38.2	29,310	59.0	1,411	2.9
	1976	25,080	24,977	100	14,336	28.6	34,508	68.9	1,213	2.4
Mit Ghamr	1960	19,979	20,037	100	15,098	37.7	23,778	59.4	1,139	2.8
	1976	36,736	35,470	104	20,836	28.8	49,515	68.6	1,855	2.6
Tanta	1960	92,038	92,261	100	65,490	35.5	113,711	61.7	5,098	2.8
	1976	145,183	139,453	104	70,013	24.6	201,001	72.7	7,622	2.7
Mahalla	1960	90,811	87,477	104	69,721	39.1	104,658	58.7	3,909	2.2
	1976	150,085	142,768	105	82,196	28.1	204,918	70.0	5,739	1.9
Zefta	1960	15,797	15,624	101	11,909	37.9	18,547	59.0	965	3.1
	1976	25,727	24,683	104	15,183	30.1	33,849	67.1	1,378	2.7
Damietta	1960	36,743	35,037	105	26,216	36.5	43,278	60.3	2,235	3.2
	1976	47,672	45,874	104	24,312	26.0	66,115	70.7	3,119	3.3
Beni Suef	1960	39,792	39,037	102	27,124	34.4	49,102	62.3	2,603	3.3
	1976	60,118	58,030	104	34,154	28.9	80,316	68.0	3,678	3.1
Minia	1960	48,516	45,991	106	32,550	34.4	58,799	62.2	3,158	3.3
	1976	77,722	68,701	113	39,676	27.1	102,614	70.1	4,133	2.8

(Continued)

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TABLE II-21b
POPULATION SIZE, SEX RATIO AND AGE STRUCTURE OF CITIES 50,000 & ABOVE IN 1960 AND 1976

CITIES		POPULATION SIZE			AGE STRUCTURE					
		SEX			<12		12-65		65+	
		MALES	FEMALES	RATIO*	N	%	N	%	N	%
Malaway	1960	26,385	26,229	101	18,920	34.8	32,357	61.5	1,997	4.0
	1976	38,961	35,565	109	22,747	30.6	49,132	66.2	2,377	3.2
Fayoum	1960	50,682	51,382	99	35,982	35.2	62,012	60.7	4,070	4.0
	1976	85,192	81,889	104	51,107	30.6	110,421	66.1	5,553	3.3
Assiut	1960	66,171	61,314	108	43,504	33.3	78,929	60.4	5,052	3.9
	1976	115,649	98,334	118	57,444	26.8	150,603	70.4	5,936	2.8
Sohag	1960	6,658	6,604	101	21,758	35.1	38,122	61.5	2,064	3.3
	1976	53,063	48,695	109	29,885	29.4	68,785	67.6	3,088	3.0
Ekhmim	1960	20,677	20,903	99	14,899	35.8	24,935	60.0	1,751	4.2
	1976	27,365	25,869	106	17,821	33.5	33,386	62.7	2,027	3.8
Gerga	1960	21,253	20,764	102	14,784	35.2	25,604	60.9	1,629	3.9
	1976	26,581	24,529	108	15,601	30.5	34,004	66.5	1,505	2.9
Qena	1960	29,665	27,752	107	19,294	33.6	35,834	62.4	2,289	4.0
	1976	49,287	44,500	111	28,017	29.9	63,078	67.3	2,692	2.9
Luxor	1960	17,872	17,202	104	11,911	34.0	21,775	62.1	1,388	4.0
	1976	47,543	45,205	105	28,126	30.3	61,169	65.9	3,453	3.7
Aswan	1960	25,778	22,615	114	16,046	33.2	30,947	63.9	1,399	2.9
	1976	74,103	70,274	105	47,774	33.1	93,723	64.9	2,880	2.0
Matruh	1960	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	1976	15,019	12,838	117	9,580	34.4	17,770	63.8	507	1.8
Ismailia	1960	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	1976	75,994	69,984	108	40,072	27.4	102,994	70.5	2,912	2.0

* Male population as a percentage of female population.

SOURCE: CAPMAS: Statistical Indicators, 8 Volumes, 1960.
CAPMAS, General Statistics, 1976.

the two censal years. Clearly, Islamic traditions are an important factor in family formation and structure; the extent to which these traditions are maintained in Egyptian cities and across all of Egypt will affect population directions. See also the discussion on households in Part Four.

TABLE II-22
AGE STRUCTURE BY REGION 1976

REGION	AGE					
	0-11		12-64		65+	
	No.	%	No.	%	No.	%
Cairo	2,735,096	29.8	6,221,342	67.8	221,278	2.4
Urban	2,034,848	28.5	4,995,458	69.3	158,020	2.2
Rural	700,248	34.5	1,225,884	62.4	63,258	3.1
Alexandria	1,488,245	30.8	3,235,498	66.9	112,204	2.3
Urban	835,504	28.1	2,068,869	69.6	67,740	2.3
Rural	652,741	35.0	1,166,629	62.6	44,464	2.4
Suez Canal	1,106,434	32.0	2,256,207	65.3	91,415	2.6
Urban	331,970	28.0	825,595	69.6	27,932	2.3
Rural	774,464	34.1	1,430,612	63.1	63,483	2.8
Delta	2,759,377	31.7	5,679,990	65.3	259,247	3.0
Urban	213,414	28.0	1,523,081	69.4	56,479	2.6
Rural	2,545,963	33.0	4,156,909	63.9	202,768	3.1
North Upper Egypt	1,449,832	33.6	2,711,242	62.8	154,160	3.6
Urban	308,367	31.0	653,820	65.8	31,899	3.2
Rural	1,141,465	34.4	2,057,422	61.9	122,261	3.7
Assiut	601,625	33.8	1,112,237	62.5	66,161	3.7
Urban	153,310	30.4	335,108	66.4	16,021	3.2
Rural	448,315	35.1	777,129	60.9	50,140	3.9
South Upper Egypt	1,405,778	32.8	2,711,137	63.3	164,898	3.9
Urban	330,615	31.5	685,326	65.3	33,138	3.1
Rural	1,075,163	34.2	2,025,811	62.7	131,760	4.1
Matruh	41,545	36.8	68,508	60.7	2,719	2.4
Urban	18,653	36.5	31,307	61.3	1,076	2.1
Rural	22,892	37.1	37,201	60.2	1,643	2.7
TOTAL	11,587,932	100.0	23,996,161	100.0	1,072,082	100.0
	4,226,681	36.5	11,118,564	46.3	392,305	36.6
	7,361,251	63.5	12,877,597	53.7	679,777	63.4

SOURCE: CAPMAS, 1976 Census.

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TABLE II-23
CRUDE ACTIVITY RATES

YEAR	FEMALES	MALES	TOTAL
1937	7.9	65.1	37
1947	7.8	62.8	37
1960	4.8	55.2	30
1866	4.2	50.8	28
1976	9.2	52.9	32

1/ Economically active population (6 years and over) as percent of total population.

SOURCE: Population Census 1937, 1947, 1960, 1966 and 1976, CAPMAS. Reproduced in World Bank, National Urban Sector Report, Annex Volume, p. 12.

TABLE II-24
AVERAGE SIZE OF HOUSEHOLD AND ITS DISTRIBUTION BY SIZE GROUPS EGYPT

YEAR	Percentage Distribution of Households By Number of Members					Average Size of Household
	1	2-3	4-6	7-9	10+	
1947	6.5	34.2	40.3	14.8	4.2	4.7
1957	6.8	31.4	40.1	16.6	5.1	4.8
1960	7.2	31.3	38.1	18.3	5.1	5.0
1976	n.a.	n.a.	n.a.	n.a.	n.a.	5.2

SOURCE: UN Economic Bulletin for Africa, V (January 1958) Table 18; and UAR CAPMAS, Basic Statistics, 1964, (Cairo, 1965), p. 27. Reproduced in World Bank, National Urban Sector Report, 1981. Annex Volume, p. 9.

TABLE II-25
NUMBER OF HOUSEHOLDS, AVERAGE ANNUAL PERCENT INCREASE, AVERAGE HOUSEHOLD SIZE, AND AVERAGE ROOM DENSITY BY RURAL GOVERNORATES IN 1960-1976

GOVERNORATE		Number of Households		Average Percent Annual Increase	Average Number of Persons Per Household		Persons Per Room Density	
		1960	1976	60-76	1960	1976	1960	1976
Giza	T	275,571	482,709	4.70	4.8	5.0	2.2	1.8
	U		291,002			4.7		1.8
	R		191,707			5.4		1.8
Qalyubia	T	195,814	316,711	3.86	5.0	5.3	1.8	1.8
	U		136,379			5.0		2.1
	R		180,332			5.5		1.7
Beheira	T	298,258	400,470	2.14	5.6	6.3	2.2	2.2
	U		114,733			5.7		2.1
	R		285,737			6.5		2.2
Ismailia	T		68,148		5.3	5.2	1.2	1.8
	U		35,750			4.9		1.9
	R		32,398			5.5		1.7
Sharkia	T	348,654	468,310	2.14	5.2	5.6	1.5	1.5
	U		102,154			5.2		1.6
	R		366,156			5.7		1.4
Menoufia	T	269,899	311,401	0.96	5.0	5.5	1.7	1.7
	U		63,659			5.3		1.7
	R		247,742			5.6		1.7
Kafr El Shiekh	T	166,099	230,249	2.41	5.8	6.1	2.0	1.8
	U		53,951			5.4		1.8
	R		176,298			6.3		1.8
Dakahlia	T	374,112	489,741	1.93	5.4	5.6	1.8	1.7
	U		130,428			5.0		1.7
	R		359,313			5.8		1.7
Gharbia	T	332,552	421,741	1.68	5.1	5.6	1.8	1.8
	U		154,796			5.0		1.9
	R		266,945			5.8		1.8
Damietta	T	71,321	105,653	3.00	5.4	5.3	2.2	1.7
	U		28,484			5.0		1.6
	R		77,169			15.4		1.8
Fayoum	T	185,587	220,698	1.18	4.5	5.2	1.8	1.7
	U		54,426			5.0		1.8
	R		166,272			5.2		1.6
Beni Suef	T	198,880	229,343	.96	4.3	4.8	1.6	1.7
	U		56,104			4.9		1.7
	R		173,239			4.8		1.6
Assiut	T	267,955	318,345	1.18	4.8	5.3	2.1	2.0
	U		91,448			5.1		2.0
	R		226,897			5.4		1.9
Sohag	T	309,211	367,555	1.18	5.1	5.2	2.5	2.3
	U		81,777			5.1		2.0
	R		285,778.			5.4		1.9
Qena	T	283,711	341,798	1.28	4.7	5.0	2.5	2.1
	U		77,470			5.0		2.0
	R		264,328			5.0		2.1
Aswan	T	86,892	128,509	2.99	4.4	4.8	1.5	1.6
	U		46,084			5.0		1.8
	R		82,425			4.7		1.5
Matruh	T		18,696			6.0		2.3
	U		9,343			5.5		1.8
	R		9,353			6.6		3.0
Minia	T	349,123	415,782	1.19	4.5	5.0	1.8	1.6
	U		86,513			5.0		1.9
	R		329,269			4.9		1.5

SOURCE: CAPMAS, 1960 and 1976 Census.

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TABLE II-26
NUMBER OF HOUSEHOLDS, AVERAGE ANNUAL RATE OF INCREASE, AVERAGE SIZE OF HOUSEHOLDS AND AVERAGE ROOM DENSITY OF CITIES 50,000 AND ABOVE IN 1960 & 1976

CITY	Number of Households 1960	Number of Households 1976	Average Annual Increase (%)	Average Number of Persons Per Household 1960	Average Number of Persons Per Household 1976	Persons Per Room Density 1960	Persons Per Room Density 1976
Cairo	687,858	1,065,354	3.42	4.8	4.8	2.3	1.9
Alexandria	299,271	466,063	3.48	5.0	4.9	2.0	1.9
Port Said	46,098	52,156	0.01	5.2	5.0	1.2	2.1
Suez	40,334	40,113	0.00	5.0	4.8	1.2	1.8
Giza	52,044	262,505	25.27	4.8	4.7	1.9	1.7
Benha	9,844	17,034	4.56	5.3	5.2	2.2	1.9
Shoubra El Kheima	22,320	81,598	16.60	4.5	4.8	2.8	2.2
Qalyub	8,079	12,065	3.08	5.3	5.2	2.4	2.1
Damanhour	23,062	37,384	3.88	5.4	5.1	2.2	1.6
Edku	6,180	8,883	2.73	6.1	7.0	3.2	2.6
Kafr El Dawar	7,492	27,212	16.45	5.7	5.9	2.7	2.4
Zagazig	23,422	40,580	4.58	5.2	5.0	2.1	1.7
Ismailia	53,571	29,986		5.3		1.2	
Abu Kabir	6,994	9,795	2.50	5.3	5.6	1.8	1.7
Belbeis	6,897	12,994	5.53	5.5	5.3	2.0	1.7
Shebin El Kom	10,740	20,117	5.46	5.0	5.1	2.1	1.7
Menouf	8,290	10,306	1.52	5.0	5.3	2.0	1.6
Kafr El Sheikh	7,175	15,266	7.05	5.3	5.1	2.3	1.7
Dessouk	7,551	11,066	2.91	5.2	5.3	2.2	1.9
Mansoura	29,433	54,019	5.22	5.1	4.8	1.8	1.6
Mataria	7,101	11,760	4.10	5.1	5.2	2.5	2.1
Belkas	6,969	9,270	2.06	5.1	5.4	2.5	1.7
Mit Ghamr	7,562	14,441	5.69	5.3	5.0	2.1	1.6
Tanta	35,975	58,285	3.88	5.1	4.9	2.0	1.6
Mahalla	34,790	58,505	4.26	5.1	5.0	2.4	1.9
Zefta	5,717	9,165	3.77	5.5	5.5	2.2	1.8
Damietta	13,541	19,026	2.53	5.3	4.9	2.0	1.5
Fayoum	21,409	33,828	3.63	4.9	4.9	1.9	1.7
Beni Suef	16,539	24,883	3.15	4.6	4.7	1.9	1.5
Minia	19,514	14,851	2.08	4.7	5.0	2.1	2.0
Assiut	25,233	43,424	4.51	4.7	4.9	1.6	1.8
Sohag	11,956	11,956	4.35	5.0	5.0	1.5	1.7
Ekhmim	8,150	10,237	1.60	5.1	5.2	2.3	2.3
Gerga	8,327	10,774	1.43	5.0	5.0	2.2	2.1
Qena	11,671	18,774	3.80	4.7	4.9	4.1	1.8
Luxor	7,249	18,928	10.07	4.8	4.9	2.1	1.7
Aswan	10,689	29,091	10.76	4.4	4.9	1.9	1.7

SOURCE: CAPMAS, 1960 and 1976 Census.

TABLE II-27
PERCENTAGE DISTRIBUTION OF HOUSEHOLD CONSUMPTION EXPENDITURE 1958/59 -- 1964/65 -- 1974/75

Percentage of Expenditure	1958/59 Rural 1/	1958/59 Urban 2/	1964/65 Rural 1/	1964/65 Urban 2/	1974/75 Rural 1/	1974/75 Urban 2/
Lowest 20%	6.4	5.6	7.0	5.9	5.8	6.3
Second 20%	11.3	9.9	11.9	11.7	11.3	10.7
Third 20%	15.7	13.6	16.1	15.3	15.7	15.8
Fourth 20%	22.8	23.2	22.4	20.2	21.9	17.3
Top 20%	43.9	47.7	42.7	46.9	46.1	50.9
(Top 10%)	(28.2)	(27.9)	(27.5)	(28.2)	(31.0)	(29.3)

1/ Samir Radwan, The Impact of Agrarian Reform on Rural Egypt, Geneva: ILO, 1977, p. 43 (Table 4.4).
2/ Computed from Sample Household Budget Survey, Cairo: CAPMAS, for 1958/59, 1964/65, and 1974/75.

SOURCE: Ibrahim, Soad Eddin, Social Mobility and Income Distribution. Cairo: Egyptian Income Distribution Research Project, 1979. p.14.

Though it is highly relevant to family formation patterns and fertility, little can be said about the implications of contraception practices. The available data are old and not very reliable. They measure use among married women only. World Bank reports note 21 percent usage in 1980 and 1981 publication.[13, 14] The year in which the data were collected is not indicated. Another source, Dorothy Nortman in her Population and Family Planning Programs: A Factbook, shows 21 percent users in 1973.

2. Income and Wealth Characteristics

The perception of equity in the distribution of income or wealth is often identified as a major component of "well-being". It is clearly a factor in the internal security of many countries. Political institutions are often quite responsive to concerns for equity. Perceptions of equity are almost impossible to measure meaningfully through the collection of statistical data. Actual income or wealth distributions are only slightly better measured. For the most part, this is due to technical difficulties of collecting the data, particularly in countries with emerging data and record systems, or with large "informal" sectors. Also, however, it is due to the difficulties faced by governmental leaders in developing measures to reduce income disparity without diminishing overall national production.

TABLE II-28
ESTIMATE OF RURAL AND URBAN POVERTY IN EGYPT, 1958 - 1975

Variable	Area	1958/59	1964/65	1974/75
Poverty line as defined by ILO	Rural 1/	93.0	125.0	270.0
	Urban 2/	121.0	163.0	351.0
Percentage of families below the poverty line	Rural 1/	35.0	26.8	44.0
	Urban 2/	30.0	27.8	34.5

1/ Samir Radwan, The Impact of Agrarian Reform on Rural Egypt. Geneva: ILO, 1977, p. 42.

2/ Computation on the basis of 30% increase in minimum living expenditure in urban areas.

SOURCE: Ibrahim, p. 17.

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TABLE II-29
GINI COEFFICIENT OF GROSS HOUSEHOLD INCOME AND NET INCOME (Incl. Subsidies & Taxes)

	Gross	Net
1958/59	0.444	0.430
1964/65	0.431	0.417
1974/75	0.431	0.412

SOURCE: U.S. AID Egypt, Egypt's Approach to Equity, p. 27.

TABLE II-30
RELATIVE SHARES OF INCOME GROUPS

	Lowest 60%	Next 30%	Top 10%
Early 50's	18.0%	38.5%	43.5%
1972	29.8%	37.0%	33.2%
1976	33.7%	31.7%	34.6%

SOURCE: U.S. AID Egypt, Egypt's Approach to Equity, p. 28.

TABLE II-31
DISTRIBUTION OF URBAN HOUSEHOLD CONSUMPTION

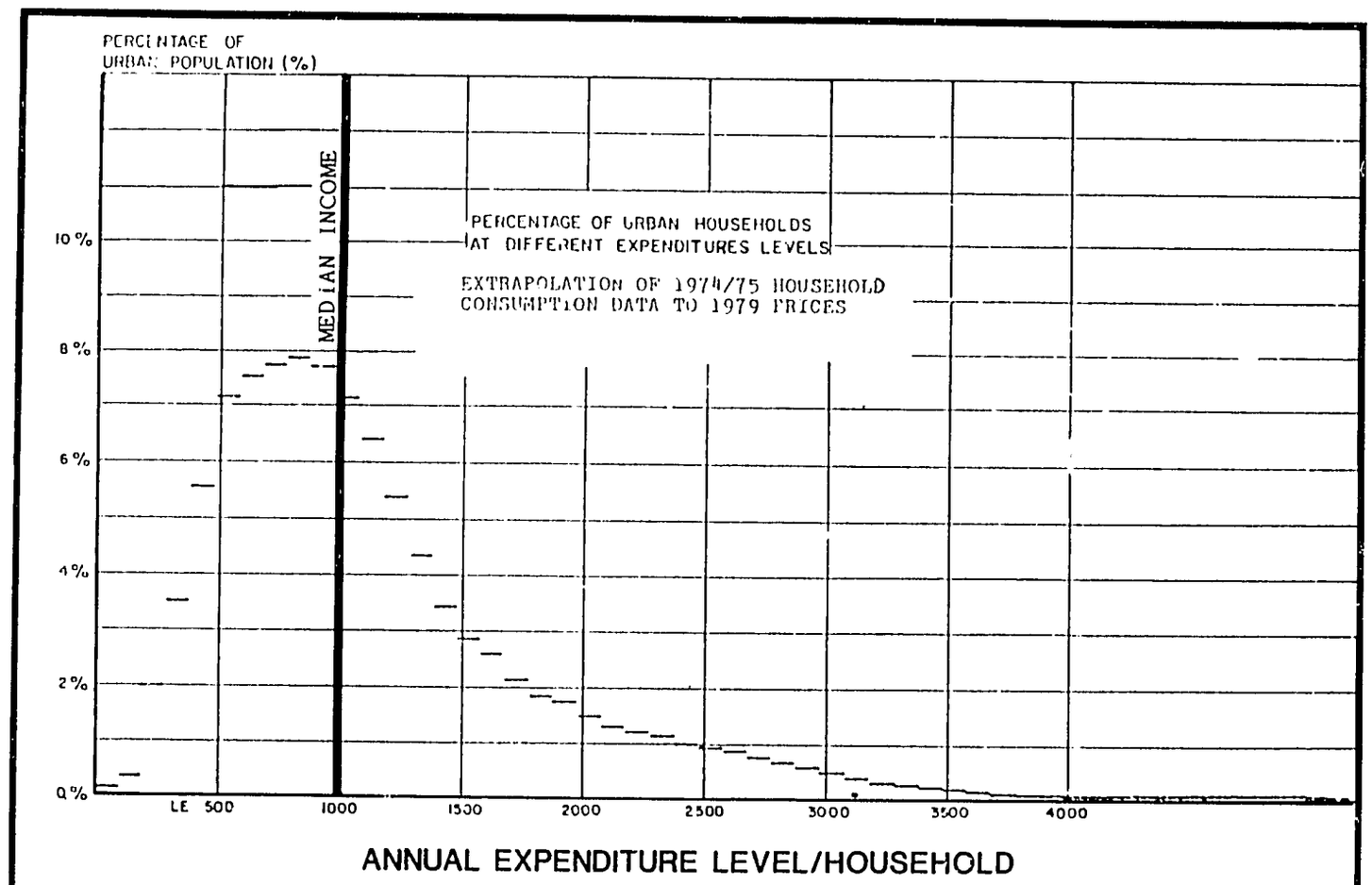
Year	Gini Coefficient
1958/59	0.40
1964/65	0.40
1974/75	0.37

SOURCE: U.S. AID Egypt, Egypt's Approach to Equity, p. 30.

Technical difficulties include intentionally erroneous reporting on the part of respondents to surveys, or those filling out administrative forms such as tax returns. In addition, respondents frequently do not know their incomes and misreport them. Even more of a problem is how to report non-money income. Many of these problems can be diminished by using multiple techniques and matching the results. Frequently used are household consumption expenditure surveys as a surrogate for income. Table II-27 shows urban and rural distributions from household expenditure surveys conducted in 1958-1959, 1964-1965 and 1974-1975. Table II-28 provides estimates of rural and urban poverty in 1958-1959, 1964-1965 and 1974-1975 as measured by the International Labor Office definition of poverty.

Another set of income distribution data is presented in the U.S. AID Egypt discussion of Egypt's Approach to Equity. Table II-29 provides Gini coefficients for the 1958-1959, 1964-1965 and 1974-1975 expenditure surveys and Table II-30 has relative shares of income groups. The

TABLE II-32
ESTIMATE OF URBAN INCOME DISTRIBUTION



SOURCE: USAID Memorandum based on CAPMAS, 1974-75 Urban Household Expenditure Survey adjusted for inflation.

Gini coefficient is a somewhat flawed effort to represent distributions. The figure declines as income disparities are reduced. Both data sets show that overall disparities are being reduced, beginning with the land reform after the 1952 revolution and continuing up to 1976. There is some indication that the share of the most wealthy decile of the population has increased in recent years, but at the expense of the middle and upper groups rather than the poor.

Urban incomes are also becoming slightly more equitable to the extent that the Gini coefficient can measure them (Tables II-31 and 32). However, urban incomes are two to three times higher than rural incomes,[15] due largely to government food subsidies, crop controls and agricultural tax policies. However, it is obvious that poverty is not entirely a rural phenomenon. According to a World Bank publication,[16] 28 percent of Egypt's urban population was below the poverty line in 1975 (using the World Bank definition of poverty),[17] while 19 percent of the rural population was in poverty. These data projected to the year 2000 show there will be even less rural poverty:

YEAR	URBAN	RURAL
1975	28%	19%
1980	24	15
1990	17	9
2000	16	5

These data use U.N. population projections and assume a houshold size of six persons.

TABLE II-33
PRIVATE AND SOCIAL RATES OF RETURN BY EDUCATIONAL LEVELS IN DEVELOPED AND LESS DEVELOPED COUNTRIES

COUNTRIES	Secondary Education		Higher Education	
	Private Rate (%)	Social Rate (%)	Private Rate (%)	Social Rate (%)
Developed	11.9(7)	9.5(8)	11.9(11)	9.4(10)
Less Developed	18.5(14)	15.2(8)	22.0(14)	12.4(8)

N.B.: The number of country observations are in parenthesis. The dividing line between countries is GNP per head of US$1,000.

SOURCE: George Psacharopoulas, cited in Blaug, Mark. Education and the Employment Problem in Developing Countries. Geneva, ILO, 1973.

TABLE II-34
CENTRAL GOVERNMENT EXPENDITURE FOR DEFENSE, EDUCATION, AND HEALTH, 1978 (1975 Dollars)

	Per Capita	As a % of GNP	As a % of All Central Govt. Expenditure
Defense	17	3.7	8.2
Education	24	5.2	11.5
Health	7	1.5	3.4

SOURCE: Compiled from World Bank World Development Report, 1981; Washington, D.C. 1981.

TABLE II-35
LEVELS OF EDUCATION FOR POPULATION 10 YEARS AND ABOVE

	% ILLITERATES		% READ & WRITE		% PRIMARY SECONDARY		% ABOVE SECONDARY	
	M	F	M	F	M	F	M	F
Cairo	30.6	55.8	35.0	21.4	28.1	20.2	6.3	2.6
Urban	25.2	48.5	34.7	21.0	32.3	24.3	7.7	3.2
Rural	50.1	85.3	36.1	11.0	12.7	3.4	1.1	0.2
Alexandria	40.3	64.9	35.4	19.4	20.8	14.2	3.4	1.4
Urban	28.3	50.6	38.4	25.9	27.8	21.3	4.9	2.1
Rural	59.7	88.9	30.5	8.6	9.1	2.4	0.7	0.1
Suez Canal	43.8	73.6	32.6	15.1	21.4	10.7	2.2	0.7
Urban	28.6	51.7	33.8	23.2	33.3	23.4	4.3	1.7
Rural	52.4	85.7	31.9	10.5	14.7	3.6	1.0	0.1
Delta	42.8	57.7	35.4	34.7	19.5	11.8	2.2	0.5
Urban	29.2	53.0	33.6	23.4	32.1	21.8	5.0	1.8
Rural	47.7	81.0	36.0	13.6	15.1	4.6	1.2	0.2
North Upper Egypt	58.0	84.5	28.3	9.9	12.4	5.2	1.2	0.4
Urban	36.3	60.5	31.8	20.4	28.2	17.6	3.7	1.3
Rural	64.9	92.0	27.2	6.7	7.4	1.3	0.5	0.6
Assiut	53.5	83.3	28.5	9.4	16.3	6.8	1.7	0.5
Urban	35.0	61.3	27.3	17.2	33.4	19.8	4.2	1.6
Rural	61.2	92.0	29.0	6.3	9.2	1.7	0.6	0.1
South Upper Egypt	55.4	84.4	29.9	11.0	13.5	4.3	1.2	0.3
Urban	35.9	63.4	34.5	21.9	26.4	13.7	3.2	0.9
Rural	62.1	91.1	28.3	7.5	9.6	1.3	0.5	0.1
Matrouh	60.9	87.3	27.4	7.5	9.6	4.7	2.1	0.4
Urban	41.9	73.8	36.4	14.7	17.8	1.6	4.0	0.9
Rural	78.6	98.1	19.1	1.7	2.0	0.1	0.3	0.0

SOURCE: CAPMAS, 1976 Census.

TABLE II-36 a

EDUCATION STATUS OF THE POPULATION 10 YEARS AND ABOVE BY SEX, IN RURAL GOVERNORATES IN 1960 & 1976 AND THE CHANGE IN ABSOLUTE NUMBER OF ILLITERATES

GOVERNORATES			ILLITERATES				% CHANGE IN NUMBER OF ILLITERATES		READ & WRITE				PRIMARY THROUGH SECONDARY				ABOVE SECONDARY				TOTAL NUMBER	
			MALES	%	FEMALES	%	MALES	FEMALES	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	FEMALES
EL FAYOUM	(Urban)	1960	28,921	52.3	44,436	76.6	60.4	44.0	17,995	32.5	9,485	16.3	6,984	12.6	3,600	6.2	1,228	2.2	192	0.3	55,310	57,989
		1976	46,376	43.9	46,004	64.8			29,616	28.0	16,586	16.8	26,128	24.7	16,785	17.0	3,460	3.3	1,360	1.4	105,580	98,735
	(Rural)	1960	175,686	75.9	228,481	93.1	23.4	18.7	50,194	21.7	14,785	6.0	5,109	2.2	794	0.3	377	-.2	23	0.0	232,613	245,534
		1976	216,806	69.2	271,182	91.9			74,555	23.8	19,736	6.7	20,786	6.6	4,685	1.6	1,096	0.3	184	0.1	313,243	295,787
ASSIUT	(Urban)	1960	52,934	50.9	73,865	74.6	27.6	39.2	31,491	30.3	17,882	18.1	16,317	15.7	6,429	6.5	2,866	2.8	346	0.3	103,926	98,939
		1976	67,532	35.8	102,831	61.9			51,387	27.2	28,463	17.1	61,805	32.7	32,118	19.3	7,951	4.2	2,779	1.7	188,675	166,191
	(Rural)	1960	271,893	74.6	343,673	94.8	5.3	16.0	78,481	21.5	16,246	4.5	12,046	3.3	805	0.2	795	0.2	24	0.0	364,669	362,645
		1976	288,902	61.9	398,682	92.7			134,242	28.8	24,787	5.8	40,766	8.7	6,406	1.5	2,697	0.6	244	0.1	466,607	430,199
SOHAG	(Urban)	1960	54,684	55.1	79,283	80.2	14.4	17.8	30,348	30.6	12,884	15.0	12,051	12.1	4,066	4.1	1,889	1.9	151	0.1	99,303	98,333
		1976	62,541	38.6	93,367	63.8			48,556	30.0	28,150	19.2	44,831	27.6	23,180	15.8	6,174	3.8	1,534	1.0	162,202	146,231
	(Rural)	1960	339,267	76.7	447,272	96.9	7.8	15.9	89,767	20.3	11,203	2.4	10,852	2.4	480	0.1	616	0.1	3	0.0	422,469	461,552
		1976	365,853	64.5	518,623	93.6			154,641	27.2	30,308	5.5	44,305	7.8	4,933	0.9	2,680	0.5	302	0.1	567,478	554,166
QENA	(Urban)	1960	32,029	48.2	48,364	75.5	88.3	95.3	23,427	35.2	12,103	18.9	9,330	14.0	3,107	4.8	1,447	2.2	121	0.2	66,500	64,066
		1976	60,318	37.7	94,463	66.8			57,751	36.1	30,318	21.4	37,806	23.6	15,576	11.0	4,140	2.6	961	0.7	159,995	141,418
	(Rural)	1960	319,198	79.4	395,963	96.5	-0.1	9.8	72,310	18.0	13,550	3.3	8,512	2.1	775	0.2	604	0.1	26	0.0	402,078	412,186
		1976	318,958	65.1	434,649	91.6			137,631	28.1	34,871	7.3	41,228	8.4	4,927	1.0	2,269	0.5	252	0.1	490,086	474,699
ASWAN	(Urban)	1960	16,357	45.0	23,917	74.1	58.9	98.8	13,818	38.0	6,800	21.0	4,799	13.2	1,199	3.7	1,115	3.1	59	0.2	36,368	32,291
		1976	26,002	29.7	47,537	56.9			36,096	39.4	22,816	27.3	26,616	29.1	12,093	14.5	2,846	3.1	1,118	1.3	91,560	83,564
	(Rural)	1960	65,813	69.8	100,624	93.4	3.4	20.5	24,364	25.8	6,139	5.7	3,317	3.5	279	0.2	278	0.3	11	0.0	94,253	107,731
		1976	68,020	47.4	121,242	80.7			51,042	35.5	23,744	15.8	23,181	16.1	5,170	3.4	1,340	0.9	132	0.1	143,583	150,288
GIZA	(Urban)	1960	46,680	30.6	93,622	62.2	227.1	192.7	57,395	37.7	33,316	2.1	34,566	22.7	19,076	12.7	12,216	8.0	2,416	1.6	152,307	150,442
		1976	152,677	27.1	174,039	53.2			195,242	34.6	114,454	22.2	167,136	29.7	106,827	20.7	48,318	8.6	19,560	3.8	563,373	514,880
	(Rural)	1960	209,878	67.5	294,231	93.3	9.7	6.3	85,748	27.6	16,076	5.1	11,899	3.8	1,622	0.5	1,081	0.3	94	0.0	311,012	315,375
		1976	230,208	57.6	312,679	88.9			130,966	32.7	30,332	8.6	35,388	8.8	7,886	2.2	3,358	0.8	532	0.1	399,370	351,429
QALYUBIA	(Urban)	1960	93,397	44.1	64,289	79.2	91.6	124.4	34,913	39.1	12,621	15.6	9,999	11.2	3,367	4.1	1,256	1.4	173	0.2	89,381	81,154
		1976	75,495	28.8	144,272	61.4			114,259	43.5	53,459	22.7	64,212	24.5	34,750	14.8	8,565	3.2	2,423	1.0	262,331	234,904
	(Rural)	1960	149,882	59.0	233,622	91.2	13.5	8.9	84,405	34.0	18,932	7.4	15,249	6.0	1,826	0.7	1,165	0.5	90	0.0	253,919	256,238
		1976	170,130	42.6	254,348	81.2			157,332	39.4	42,823	13.7	66,268	16.6	15,063	4.8	5,119	1.3	782	0.3	398,849	313,016
BEHEIRA	(Urban)	1960	47,864	45.8	79,644	75.9	81.2	77.4	41,229	39.5	19,552	18.6	12,803	12.3	4,564	4.3	1,937	1.8	208	0.2	104,441	104,958
		1976	86,745	33.4	141,298	59.6			106,882	41.2	27,621	24.3	57,461	22.2	35,706	15.1	8,203	3.2	2,398	1.0	259,291	237,023
	(Rural)	1960	335,319	71.9	462,729	94.1	27.2	28.2	111,531	23.9	23,270	4.7	14,990	3.2	1,672	0.3	1,428	0.3	67	0.0	466,123	491,643
		1976	426,404	59.7	593,332	88.9			217,529	30.5	57,154	8.6	64,885	9.1	15,958	2.4	4,823	0.7	981	0.1	713,611	667,425
SHARKIA	(Urban)	1960	40,514	40.6	71,258	71.5	49.7	50.0	40,376	40.5	20,873	20.9	15,526	15.6	6,265	6.3	2,695	2.7	396	0.4	99,674	99,591
		1976	60,651	28.1	106,889	53.6			72,954	33.8	44,843	22.5	71,141	32.9	43,490	21.8	10,915	5.1	4,005	2.0	215,661	199,227
	(Rural)	1960	335,886	65.3	490,524	92.5	23.6	28.1	147,835	28.7	32,899	6.2	25,597	4.9	2,524	0.5	1,954	0.4	77	0.01	514,324	530,141
		1976	415,060	52.6	628,270	86.1			248,889	31.5	74,190	10.2	117,744	14.9	26,622	3.6	7,990	1.0	361	0.2	789,683	729,943
MENOUFIA	(Urban)	1960	28,139	44.3	47,382	74.2	50.1	52.1	24,825	39.1	12,292	19.2	8,544	13.4	3,490	5.5	1,773	2.8	298	0.5	63,545	63,835
		1976	42,227	31.3	72,057	56.8			47,212	35.0	27,681	21.8	39,035	29.0	25,163	19.8	6,193	4.6	1,991	1.6	134,667	126,892
	(Rural)	1960	226,189	56.1	372,206	89.5	-0.9	7.0	144,175	35.7	38,353	9.2	29,095	7.2	3,039	0.7	2,473	0.6	110	0.0	403,367	415,786
		1976	224,052	41.7	398,423	80.3			204,117	38.0	7 .279	14.6	101,394	18.9	24,527	4.9	7,396	1.4	944	0.2	536,959	496,173

(Continued)

3. Educational Characteristics

The educational characteristics of a population are important to know both as a measure of the quality of life, in which education is in part an end; as well as the role education plays in increased economic well-being, in which case education is a means toward an end.

The connection between education and economic performance is clear virtually the world over, but economic rates of return are especially high in developing countries.[18] The social rate of return for both secondary and higher education is much higher in developed countries than in less developed countries, but not nearly as high as the private rate of return. (Table II-33) This has policy implications for Egypt, which provides both secondary and higher education virtually free of charge.

In Egypt, data to support rate of return analyses are inadequate. There are not detailed budget data at national or governorate levels, there are not good income data to show either income foregone while attending school or income earned afterwards. Further, many "products" of the educational system enter public service under a policy which requires that government place graduates. The return from such employment is difficult to estimate. Table II-34 shows central government expenditure for defense, for education and for health in 1978.

Non-economic outcomes of educational processes are even more difficult to measure, although literacy rates are of value in countries with relatively high illiteracy. Normally, one has to fall back on data which represent numbers of service points, numbers passing through the system, or costs of operating the system.

Egypt has placed considerable emphasis on improving education since the 1952 revolution. Education is essentially free, although private schools do exist. The government has pushed hard to increase the number of schools and teachers and the quality of the product. It is widely felt that the pace of construction outstripped the capacity to train teachers and administrators, and present policies include

TABLE II-36b
EDUCATION STATUS OF THE POPULATION 10 YEARS AND ABOVE
BY SEX, IN RURAL GOVERNORATES IN 1960 & 1976
AND THE CHANGE IN ABSOLUTE NUMBER OF ILLITERATES

GOVERNORATES			ILLITERATES				% CHANGE IN NUMBER OF ILLITERATES		READ & WRITE				PRIMARY THROUGH SECONDARY				ABOVE SECONDARY				TOTAL NUMBER	
			MALES	%	FEMALES	%	MALES	FEMALES	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	FEMALES
DAKAHLIA	(Urban)	1960	44,191	35.6	32,748	65.8	72.4	50.4	53,477	43.1	30,817	24.5	21,587	17.4	10,631	8.4	4,166	3.4	592	0.5	124,111	125,831
		1976	76,183	27.7	124,422	50.3			93,672	34.1	62,951	25.4	90,047	32.8	55,100	22.3	14,889	5.4	5,012	2.0	274,791	247,485
	(Rural)	1960	316,070	57.3	489,623	86.8	16.2	22.5	194,933	35.4	64,412	11.4	34,381	6.2	4,239	0.7	2,319	0.4	117	0.0	551,182	563,725
		1976	367,378	45.9	599,711	79.7			305,309	38.1	113,368	15.1	118,816	14.8	38,296	5.1	9,034	1.1	1,281	0.2	800,537	752,656
GHARBIA	(Urban)	1960	61,034	37.0	115,040	69.5	28.2	32.3	69,591	41.5	34,802	21.0	29,751	18.0	13,374	8.1	4,776	2.9	837	0.5	165,072	165,454
		1976	78,218	25.9	152,190	51.5			95,786	31.7	66,340	22.4	111,445	36.9	71,202	24.1	16,585	5.5	5,942	2.0	302,034	295,674
	(Rural)	1960	259,718	62.5	404,477	92.3	2.2	14.7	130,109	31.3	29,221	6.4	21,843	5.3	2,392	0.5	1,620	0.4	86	0.0	415,240	438,079
		1976	265,396	45.8	463,998	84.1			212,115	36.6	63,632	11.5	95,048	16.4	22,931	4.1	7,346	1.3	898	0.2	579,905	551,459
DAMIETTA	(Urban)	1960	16,222	47.7	21,323	65.3	11.8	13.4	13,151	38.7	8,738	26.8	3,681	10.8	2,211	6.8	779	2.3	126	0.4	34,018	32,649
		1976	18,140	32.2	24,176	44.5			20,032	35.5	14,463	26.6	15,580	28.1	14,809	27.3	2,370	4.2	868	1.6	56,392	54,316
	(Rural)	1960	55,750	55.9	76,037	78.4	22.9	20.7	37,150	37.3	18,344	18.9	5,455	5.5	1,760	1.8	781	0.8	78	0.1	99,690	96,971
		1976	68,502	44.6	91,767	62.9			60,354	39.3	38,723	26.6	22,721	14.8	14,925	10.2	1,810	1.2	346	0.2	153,387	145,786
BENI SUEF	(Urban)	1960	30,944	48.7	50,686	76.7	29.8	26.2	22,156	34.8	10,961	16.6	8,763	13.8	3,845	5.8	1,437	2.3	335	0.5	63,585	66,054
		1976	40,156	36.6	63,963	61.8			35,220	32.1	21,440	20.7	30,398	27.7	16,840	16.3	3,963	3.6	1,310	1.3	109,737	103,553
	(Rural)	1960	163,292	69.1	238,688	93.8	10.6	12.5	64,640	27.3	13,996	5.5	7,185	3.0	718	0.3	438	0.3	14	0.0	236,292	254,363
		1976	180,644	58.3	268,561	91.5			98,904	31.9	20,877	7.1	26,048	8.4	4,039	1.4	1,401	1.4	149	0.1	309,997	293,626
MINIA	(Urban)	1960	41,349	43.6	67,668	71.9	34.0	28.3	36,442	38.4	19,675	20.9	14,002	14.8	5,931	6.3	2,592	2.7	290	0.3	94,795	94,057
		1976	55,414	31.7	86,792	57.1			59,470	34.0	34,315	22.6	52,977	30.3	28,601	18.8	6,782	3.9	2,170	1.4	174,643	151,878
	(Rural)	1960	334,306	72.5	443,265	94.4	21.8	17.2	111,396	24.1	23,205	4.9	13,007	2.8	1,229	0.3	974	0.2	29	0.0	461,267	469,699
		1976	407,207	65.9	519,671	92.4			163,526	26.5	36,391	6.5	44,416	7.2	6,126	1.1	2,783	0.4	400	0.1	617,932	562,588

NOTE: Totals do not add due to unallocated non-responses.

SOURCE: CAPMAS, Statistical Indicators, 8 Volumes.
CAPMAS, 1960 Census.

TABLE II-37 a

EDUCATION STATUS OF THE POPULATION 10 YEARS AND ABOVE, BY SEX, IN CITIES 50,000 AND ABOVE IN 1960 & 1976 AND THE PERCENT CHANGE IN ABSOLUTE NUMBER OF ILLITERATES

CITIES	YEAR	ILLITERATES				% CHANGE IN NUMBER OF ILLITERATES		READ & WRITE				PRIMARY THROUGH SECONDARY				ABOVE SECONDARY				TOTAL NUMBER	
		MALES	%	FEMALES	%	MALES	FEMALES	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	FEMALES
CAIRO	1960	403,434	33.7	710,886	62.4	25.4	24.8	474,210	40.0	270,763	23.7	240,927	20.1	127,516	11.2	61,262	5.1	12,228	1.1	1,195,213	1,129,696
	1976	505,705	24.2	887,032	45.6			701,936	33.6	477,661	24.6	710,666	34.1	513,332	26.4	167,143	8.1	65,504	3.4	2,085,450	1,943,529
ALEXANDRIA	1960	195,583	36.5	335,066	64.2	34.2	25.8	233,559	43.6	134,362	25.7	82,565	15.4	42,424	8.1	18,611	3.5	3,398	0.6	530,318	515,250
	1976	262,382	27.6	421,516	48.2			357,471	37.6	231,324	26.4	279,600	29.4	200,896	22.9	51,740	5.4	21,193	2.4	951,193	874,999
PORT SAID	1960	34,312	34.6	54,261	65.3	-10.5	-18.0	37,736	43.5	22,271	26.8	12,163	14.0	6,710	8.1	2,014	2.3	355	0.4	86,225	83,597
	1976	30,696	27.9	44,483	44.7			33,591	30.5	22,703	22.8	41,019	37.3	30,569	30.7	4,730	4.3	1,817	1.8	110,036	99,572
SUEZ	1960	28,978	42.1	45,781	71.8	-10.5	-14.2	29,424	42.8	13,862	21.7	8,639	12.6	3,404	5.3	1,217	1.8	134	0.2	68,258	63,181
	1976	25,855	32.8	39,299	57.7			27,178	36.5	14,780	21.7	23,908	30.3	13,533	19.9	1,823	2.3	469	0.7	78,764	68,081
GIZA	1960	23,599	25.9	49,330	55.2	454.7	382.9	30,874	34.0	21,466	24.0	24,410	26.9	14,947	16.7	10,985	12.1	2,230	2.5	90,849	89,367
	1976	130,908	26.0	238,221	51.3			170,624	33.9	104,117	22.4	155,303	30.8	102,683	22.1	46,923	9.3	19,205	4.1	503,758	464,226
BENHA	1960	6,528	35.6	11,973	66.5	39.4	22.9	7,576	41.3	4,165	23.1	3,523	19.2	1,602	8.9	644	3.5	104	0.6	18,355	17,989
	1976	9,098	26.4	14,718	44.2			11,132	29.8	7,460	22.4	14,013	37.6	10,170	30.6	3,013	8.1	923	2.8	37,256	33,271
SHOUBRA EL KHEIMA	1960	16,949	47.6	27,040	85.8	185.6	210.8	15,960	44.8	3,798	12.0	2,398	6.7	435	1.4	132	0.4	11	0.03	35,637	31,523
	1976	48,403	32.1	84,043	65.1			72,672	48.3	31,582	24.5	27,231	18.1	12,770	9.9	2,273	1.5	593	0.6	150,579	128,988
QALYUB	1960	8,717	57.3	12,215	81.9	9.4	28.3	4,487	29.8	1,931	12.9	1,510	10.0	555	3.7	195	1.3	38	0.3	15,046	43,543
	1976	9,538	39.8	15,673	69.0			7,904	33.0	3,764	16.6	5,751	24.0	3,032	13.3	771	3.2	237	1.0	23,964	22,706
DAMANHOUR	1960	16,585	37.5	29,749	67.3	12.6	9.2	19,224	43.5	10,367	23.8	6,954	15.7	2,899	6.6	1,230	2.8	174	0.4	44,200	43,543
	1976	18,673	24.3	32,485	45.9			29,671	38.6	20,327	28.7	23,997	31.2	16,392	23.2	4,455	5.8	1,525	2.1	76,796	70,725
EDKU	1960	8,060	62.3	11,117	89.3	64.0	52.3	4,226	32.7	1,114	9.2	500	3.9	40	0.3	44	0.3	2	0.02	12,935	12,450
	1976	13,221	53.1	16,931	80.5			9,446	37.9	3,328	15.8	1,975	7.9	722	3.4	264	1.0	42	0.2	24,906	21,023
KAFR EL DAWAR	1960	4,212	30.3	9,296	69.4	236.6	264.4	7,248	43.6	11,360	27.0	9,104	21.3	4,054	4.3	123	0.9	9	0.1	13,887	13,395
	1976	14,178	23.7	33,876	58.2			29,396	49.2	14,684	25.2	14,928	24.9	9,399	16.2	1,267	2.1	190	0.3	59,769	58,149
ZAGAZIG	1960	12,945	30.3	25,977	61.7	85.3	24.1	18,613	43.6	11,360	27.0	9,104	21.3	4,054	9.6	1,757	4.1	300	0.7	42,734	42,098
	1976	16,867	19.4	32,232	41.0			27,340	31.4	19,826	25.2	36,514	41.9	23,787	30.2	6,349	7.3	2,737	3.5	87,100	78,582
BELKAS	1960	9,070	54.1	13,233	79.9	-19.7	-11.4	5,729	34.1	2,426	14.6	1,790	10.7	887	5.3	187	1.1	23	0.1	16,776	16,569
	1976	7,279	30.2	11,719	59.6			11,057	45.8	4,416	22.4	4,904	20.3	3,298	16.8	871	3.6	218	1.1	24,111	19,651
MIT GHAMR	1960	4,953	36.9	9,326	67.1	86.9	61.7	5,460	40.7	3,082	22.2	2,406	17.9	1,235	8.9	485	3.6	81	0.6	13,412	13,898
	1976	9,260	27.3	15,083	57.5			10,959	32.3	8,764	29.9	11,886	35.1	4,861	16.6	1,780	5.2	582	2.8	33,885	29,290
TANTA	1960	19,097	30.1	40,164	62.1	36.4	26.7	26,285	41.4	16,310	25.2	14,834	23.4	7,560	11.6	2,885	4.5	608	0.9	63,468	64,642
	1976	26,051	22.0	50,891	45.8			36,051	30.5	24,752	22.3	47,232	39.9	32,041	28.8	8,973	7.6	3,476	3.1	118,307	111,160
MAHALLA EL KUBRA	1960	23,234	38.6	42,824	73.6	19.3	37.4	26,096	43.3	11,042	19.0	13,603	22.6	5,760	9.9	1,505	2.5	175	0.3	60,192	58,185
	1976	27,722	25.3	58,834	51.6			32,982	30.1	26,818	23.5	24,435	22.3	12,884	11.3	2,520	2.3	912	0.8	109,573	114,019
LUXOR	1960	4,973	26.6	8,013	51.6	194.2	179.7	4,423	23.7	2,820	18.2	3,133	16.6	840	5.4	820	4.3	54	0.3	18,688	15,521
	1976	14,633	26.1	22,411	43.7			14,082	25.1	7,224	14.1	17,978	32.1	8,745	17.1	1,910	3.4	867	1.7	56,050	51,231
ASWAN	1960	7,106	20.6	10,754	29.5	91.6	150.2	7,629	22.1	3,873	10.6	750	2.1	148	0.4	141	0.4	7	0.02	34,565	36,409
	1976	13,614	24.3	26,908	52.5			22,548	40.2	14,711	28.7	13,222	23.6	8,611	16.8	3,081	5.5	769	1.5	56,025	51,253
MARSA MATRUH	1960	N.A.		N.A.		N.A.	N.A.	N.A.		N.A.		N.A.		N.A.		N.A.		N.A.		18,786	15,078
	1976	4,337	36.2	5,780	63.8			4,157	34.7	1,619	17.9	2,061	17.2	109	1.2	371	3.1	--	--	11,981	9,060
ISMAILIA	1960																				
	1976	N.A.		N.A.		N.A.	N.A.	N.A.		N.A.		N.A.		N.A.		N.A.		N.A.		N.A.	N.A.

(Continued on Following Page)

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TABLE II-37b

EDUCATION STATUS OF THE POPULATION 10 YEARS AND ABOVE, BY SEX, IN CITIES 50,000 AND ABOVE IN 1960 & 1976 AND THE PERCENT CHANGE IN ABSOLUTE NUMBER OF ILLITERATES

CITIES	YEAR	ILLITERATES				% CHANGE IN NUMBER OF ILLITERATES		READ & WRITE				PRIMARY THROUGH SECONDARY				ABOVE SECONDARY				TOTAL NUMBER	
		MALES	%	FEMALES	%	MALES	FEMALES	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	%	FEMALES	%	MALES	FEMALES
ZEFTA	1960	4,694	44.3	7,783	72.9	43.4	36.4	4,345	41.0	2,291	21.4	1,308	12.3	498	4.7	192	1.8	28	0.3	10,539	10,600
	1976	6,729	33.3	10,616	58.6			7,040	34.9	3,659	20.2	5,555	27.5	3,582	19.8	853	4.2	255	1.4	20,177	18,112
DAMIETTA	1960	11,844	46.6	15,085	62.3	-2.7	-11.7	9,941	39.1	7,009	28.9	2,853	11.2	1,842	7.6	672	2.6	121	0.5	25,310	24,057
	1976	11,528	30.3	13,315	37.0			13,386	35.2	10,235	28.4	11,337	29.8	11,739	32.6	1,831	4.8	720	2.0	38,082	36,009
BENI SUEF	1960	10,679	38.3	18,026	64.9	13.6	17.3	10,436	37.4	6,436	23.2	5,579	20.0	2,901	10.4	1,050	3.8	171	0.6	27,910	27,760
	1976	12,129	24.7	21,151	45.6			15,253	31.4	12,672	27.3	18,595	38.2	11,609	25.0	2,640	5.4	916	2.0	48,617	46,348
MINIA	1960	10,905	31.9	19,317	59.4	17.6	4.1	14,595	42.8	9,636	29.7	6,975	20.4	3,088	9.5	1,413	4.1	178	0.5	34,133	32,498
	1976	12,824	20.1	19,801	40.0			21,901	34.3	14,107	28.5	25,596	40.1	14,334	28.9	3,529	5.5	1,245	2.5	63,850	49,485
MALLAWI	1960	9,271	50.8	14,435	77.0	26.9	14.4	6,480	35.4	3,183	17.0	2,025	11.1	940	5.0	374	2.1	38	0.2	18,264	18,737
	1976	11,765	36.9	16,517	60.1			11,685	36.7	6,927	25.2	7,271	22.8	3,695	13.4	1,148	3.6	337	1.2	31,869	27,476
EL FAYOUM	1960	15,110	43.5	25,413	69.9	44.7	34.7	12,842	36.9	7,548	20.8	5,697	16.4	3,189	8.8	1,112	3.2	178	0.5	34,761	36,328
	1976	21,870	34.0	34,226	55.6			18,651	29.0	11,641	18.9	20,764	32.3	14,462	23.5	2,997	4.7	1,187	1.9	64,282	61,516
ASSIUT	1960	18,147	38.9	27,460	63.1	9.9	20.0	15,958	34.2	10,782	24.8	10,388	22.2	4,841	11.1	2,069	4.4	317	0.7	46,696	43,538
	1976	19,948	21.7	32,953	44.0			22,059	24.0	15,380	20.5	43,821	47.7	24,270	32.4	6,088	6.6	2,315	3.1	91,916	74,918
SOHAG	1960	7,157	32.6	13,705	64.5	8.5	15.4	9,019	40.9	5,268	24.8	4,841	21.9	2,089	9.8	960	4.3	95	0.4	22,061	21,237
	1976	7,763	18.5	15,822	43.7			12,058	28.7	8,274	22.8	19,034	45.4	11,298	31.2	3,078	7.3	815	2.2	41,933	36,204
EKHMIM	1960	9,191	65.3	12,767	87.4	-6.9	7.9	3,775	26.8	1,625	11.1	1,003	7.1	172	1.2	90	0.6	2	0.01	14,076	14,609
	1976	8,558	44.8	13,779	74.6			5,399	28.3	2,702	14.6	4,374	24.8	1,932	10.5	393	2.0	55	0.3	19,084	18,468
GERGA	1960	7,670	52.1	11,645	79.6	14.4	-4.6	4,665	31.7	2,317	15.8	2,050	13.9	570	3.9	302	2.0	19	0.1	14,725	14,632
	1976	8,771	37.1	11,105	55.8			8,368	35.4	5,526	27.8	5,527	23.4	3,049	15.3	961	4.1	204	1.0	23,627	19,884
QENA	1960	9,933	46.9	14,247	72.7	5.8	37.4	7,382	34.9	4,129	21.1	3,085	14.6	1,021	5.2	648	3.1	57	0.3	21,150	19,598
	1976	10,512	26.8	19,576	57.2			13,928	35.6	8,095	23.7	13,217	33.7	6,173	18.0	1,499	3.8	358	1.0	39,156	34,202
ABU KEBIR	1960	7,000	57.9	10,556	83.9	33.4	34.5	4,001	33.1	1,582	12.6	920	7.6	343	2.7	131	1.1	9	0.1	12,088	12,579
	1976	9,339	43.0	14,202	69.5			6,857	31.6	3,304	16.2	4,945	22.8	2,784	13.6	582	2.7	153	0.7	21,723	20,443
BELBEIS	1960	6,438	50.3	9,893	80.2	37.0	57.3	4,503	35.2	1,842	15.0	1,578	12.3	438	3.6	202	1.6	21	0.2	12,808	12,328
	1976	8,823	32.2	15,561	61.2			10,474	38.3	5,588	22.0	7,162	26.2	3,927	15.4	902	3.3	335	1.3	27,361	25,411
SHEBIN EL KOM	1960	7,121	36.4	11,932	63.9	29.1	52.1	7,796	39.9	4,674	25.0	3,345	17.1	1,761	9.5	906	4.6	191	1.0	19,544	18,680
	1976	9,196	21.4	18,147	42.6			15,368	35.8	10,267	24.1	15,590	36.3	13,239	31.1	2,746	6.4	916	2.1	42,900	42,569
MENOUF	1960	6,673	46.7	10,675	74.3	24.1	13.5	5,475	38.4	2,817	19.6	1,727	12.1	760	5.[illegible]	372	2.6	66	0.5	14,276	14,364
	1976	8,284	37.4	12,122	58.1			6,884	31.1	4,453	21.3	6,057	27.3	3,892	18.6	925	4.2	393	1.9	22,150	20,860
KAFR EL SHEIKH	1960	5,204	39.2	9,828	75.7	32.7	52.0	5,275	39.7	2,270	17.5	2,213	16.7	732	5.6	521	3.9	45	0.3	13,213	12,875
	1976	6,906	21.7	14,942	52.2			10,174	32.0	6,180	21.6	12,243	39.1	6,920	24.2	2,251	7.1	592	2.1	31,757	28,634
DESSOUK	1960	6,642	49.3	10,770	76.9	30.2	21.4	4,832	35.9	2,433	17.4	1,632	12.1	667	4.8	291	2.2	28	0.2	13,397	13,898
	1976	8,649	33.3	13,075	57.4			10,452	40.3	5,894	25.9	5,644	21.7	3,461	15.2	1,202	4.6	342	1.5	25,947	22,772
MANSOURA	1960	13,249	25.3	29,573	55.8	36.5	25.9	24,279	46.4	16,074	30.3	11,839	22.6	6,570	12.4	2,723	5.2	423	0.8	52,339	52,935
	1976	18,080	16.7	37,253	38.2			34,478	31.9	27,207	27.9	46,873	43.4	30,020	30.7	8,641	8.0	3,136	3.2	108,072	97,616
MATARIA	1960	N.A.		N.A.		N.A.	N.A.	N.A.		N.A.		N.A.		N.A.		N.A.		N.A.		N.A.	N.A.
	1976	15,003	63.7	15,187	72.4			6,283	26.7	4,274	20.4	1,962	8.3	1,401	6.7	317	1.3	112	0.5	23,565	20,974

NOTE: Totals do not add due to unallocated non-responses.

SOURCE: CAPMAS, Statistical Indicators, 1976.
CAPMAS, 1960 Census.

upgrading in these areas as well as in the curriculum. Official goals include 100 percent enrollment of the primary age group (6-12 years old) by 1985. This will be very difficult in light of traditions regarding the education of girls. Major educational policies are decided by the central government.

Tables II-35, 36 and 37 present level of education by sex for economic regions, for governorates and for cities 50,000 and over in population, all derived from the 1976 Census. The disparity between males and females is immediately obvious from each of these tables, with female illiteracy roughly 50 percent higher than male. The sex disparity is markedly more pronounced in rural areas than in urban areas, and in southern Egypt and Matruh more than northern Egypt generally.

Overall literacy in Egypt increased from 26.0 to 44.0 percent over the period 1960-1976. (Table II-38) Table II-39 indicates the rural illiteracy rate overall is a little less than twice that of the urban rate. However, the number who can read and write (but have not passed secondary school) is almost as high in rural areas as urban areas for males. The number of males who complete secondary school is two to three times as high in urban areas as rural. The contrast is much more marked for those with above secondary levels of education. There are no sharp contrasts among either the governorates or the cities which do not seem to be explained by their relative "ruralness" or distance from the Cairo-Delta area.

TABLE II-38
ADULT LITERACY, EGYPT
PERCENT OF ADULT POPULATION

1960	26.0
1970	40.0
1976	44.0

SOURCE: World Bank. World Development Report: 1981; World Bank. World Tables, 1980.

Levels of education improved between the 1960 and 1976 Censuses for males, for females, for urban dwellers and rural dwellers. (See especially Table II-36) However, there are differences in the rates of change. While illiteracy has increased in absolute terms, illiterates as a percentage of the population has decreased. Generally, male illiteracy was reduced more than female. This fact is especially true in the rural areas of Upper Egypt where a substantial segment of the female population remains illiterate. In fact, UNESCO data[19] show 86.3 males enrolled in first grade as a percent of 6 year-old boys in 1966, rising to 90.1 in 1974. For females the 1966 figure was 61.5, declining to 61.1 in 1974.

TABLE II-39
PERCENTAGE DECLINE IN THE PERCENT ILLITERATES BETWEEN 1960 AND 1976 BY URBAN/RURAL RESIDENCE AND BY SEX FOR RURAL GOVERNORATES AND CITIES IN URBAN GOVERNORATES

GOVERNORATE	URBAN		RURAL	
	Males (%)	Females (%)	Males (%)	Females (%)
Giza	11.4	14.5	14.7	4.7
Qalyubia	34.7	22.5	27.8	11.0
Beheira	27.1	21.5	17.0	5.5
Menoufia	29.3	23.5	25.7	10.3
Sharkia	30.8	25.0	19.4	6.9
Dakahlia	22.2	23.6	20.0	8.2
Gharbia	30.0	25.9	26.7	8.9
Damietta	32.5	31.9	20.2	19.8
Beni Suef	24.8	19.4	15.6	2.5
Minia	27.3	20.6	9.1	2.1
Fayoum	16.1	15.4	8.8	1.3
Assiut	29.7	17.0	17.0	2.3
Sohag	29.9	20.4	15.9	3.4
Qena	21.8	11.5	18.0	5.1
Aswan	34.0	23.2	32.1	13.6

CITY	Males (%)	Females (%)
Cairo	28.2	26.9
Alexandria	24.4	24.9
Port Said	19.4	31.5
Suez	22.1	19.6

SOURCE: Derived from Tables II-55 and II-56.

NUPS did not have access to retrospective enrollment data for governorates or for cities and cannot, therefore, confirm the urban/rural trend nor correct for effects of migration. However, World Bank data for Egyptian primary school enrollment show only a total rise of 12 percent between 1960 and 1978 for females and 9 percent for males.[20] (Table II-40) A different World Bank publication[21] shows 49 percent of the males and 28.6 percent of the females in the 12-17 age group were enrolled in 1977 (by a different age group definition). For the 18-23 year group, 26.4 percent of males and 13.1 percent of females are enrolled (though not necessarily in the "appropriate" level of school for a given age).

Table II-41 shows enrollment, numbers of teachers, of classrooms and schools by level/type of school, by governorate. Unfortunately, the age-specific Census data does not permit determining the percentage of enrollment for the relevant age groups by governorate or by economic region.

TABLE II-40
SCHOOL ENROLLMENT AS A PERCENTAGE OF AGE GROUP

	Primary School			Secondary School	Higher Education (as % of age) (20-24)
YEAR	TOTAL	MALE	FEMALE	TOTAL	TOTAL
1960	66	80	52	16	5
1970[1/]	70			33	
1975					14
1977	72	87	56	46	
1978	74	88	58	47	

SOURCES: Generally, World Bank. World Development Report, Issues for 1979, 1980, 1981.

1970 data, World Bank, World Tables,[1/] 1976.

The number of service points are traditionally reflected by student/teacher ratios, student/classroom ratios, and number of schools. The correlations between these data and educational quality are unclear, but lower ratios do imply increased willingness to pay for education. In Egypt, where such decisions are centralized in the capital at Cairo, the distribution of enrolled students is rather even. (See for example, Table II-42, which shows ratios by primary school for governorate.) There are lower student/teacher ratios in rural and remote areas where distances require the construction of more schools for a given population level.

In addition to overall numbers passing through the system, it is useful to get an idea of the efficiency of the system. The "survival" rate of cohort group entering school and the rate at which grades are repeated by students reflect very strongly the efficiency with which an educational system meets its goals. For the group entering first grade in 1970, 96.4 percent reached grade 2, 93.2 percent of those students reached grade 3, 89.7 percent of that group reached grade 4, 83.2 percent of those children reached grade 5, and 79.3 percent of fifth graders went on to grade 6. This compares favorably with many developing countries, but some — Gambia, Singapore, Tanzania, Jordan and Guyana especially — have much lower drop-out rates.[22] Egypt shows some of the lowest repitition rates for developing countries in 1974— 14 percent of second graders, 15 percent of fourth graders, and 13 percent of sixth graders.[23]

For higher education, the cost per student is one of the lowest among developing countries. This is largely due to economies of scale achieved with the very large university facilities. This cost has been basically steady since 1957, in constant dollars. (Table II-43)

The recent Human Resources Development Study[24] survey of the three major canal cities contains a section on educational characteristics which is recommended to the reader. This 7 percent sample survey of persons living in low-income areas of Suez, Ismailia and Port Said yielded especially interesting results on illiteracy and level of attained education.

TABLE II-41a
NUMBER OF STUDENTS, TEACHERS, CLASSROOMS AND SCHOOLS BY GOVERNORATES, 1980

LEVEL/TYPE	STUDENTS	TEACHERS	CLASSROOMS	SCHOOLS	STUDENT/TEACHER RATIO	STUDENT/CLASSROOM RATIO
CAIRO						
PRIMARY	673,546	19,625	16,715	1,172	34.3	40.3
PREPARATORY	278,396	9,334	7,387	397	29.8	37.7
GENERAL SECONDARY	126,003	6,891	3,090	130	18.3	40.8
TECHNICAL SECONDARY	97,754	4,266	2,507	61	22.9	39.0
TOTAL	1,175,699	40,116	29,699	1,760	29.3	39.6
UNIVERSITY*	164,[illegible]	N.A.	N.A.	N.A.	N.A.	N.A.
ALEXANDRIA						
PRIMARY	321,791	9,551	7,449	579	33.7	43.4
PREPARATORY	123,856	4,424	3,053	160	28.0	40.6
GENERAL SECONDARY	50,140	2,204	1,157	50	22.7	43.3
TECHNICAL SECONDARY	33,400	2,059	1,014	31	16.2	32.9
TOTAL	529,187	18,238	12,643	820	29.0	41.9
UNIVERSITY*	71,424	N.A.	N.A.	N.A.	N.A.	N.A.
PORT SAID						
PRIMARY	36,767	2,217	948	79	16.6	38.8
PREPARATORY	15,182	762	502	44	19.9	30.2
GENERAL SECONDARY	7,217	377	209	10	19.1	34.5
TECHNICAL SECONDARY	7,661	807	251	7	9.5	30.5
TOTAL	66,827	4,163	1,910	140	16.1	35.0
UNIVERSITY*	--	--	--	--	--	--
ISMAILIA						
PRIMARY	55,111	1,608	1,333	133	34.3	41.3
PREPARATORY	19,028	618	481	51	30.8	39.6
GENERAL SECONDARY	4,999	193	130	8	25.9	38.4
TECHNICAL SECONDARY	8,991	474	257	6	19.0	35.0
TOTAL	88,129	2,893	2,201	178	30.5	40.0
UNIVERSITY*	7,192	N.A.	N.A.	N.A.	N.A.	N.A.
SUEZ						
PRIMARY	33,713	974	862	70	34.6	39.1
PREPARATORY	12,500	380	338	9	32.9	37.0
GENERAL SECONDARY	3,624	[illegible]	93	5	25.3	39.0
TECHNICAL SECONDARY	6,363	238	186	5	26.7	34.2
TOTAL	56,200	1,735	1,479	89	32.4	38.0
UNIVERSITY*	--	--	--	--	--	--
BEHEIRA						
PRIMARY	274,581	8,460	6,504	731	32.4	42.2
PREPARATORY	87,313	2,839	2,134	88	30.8	40.9
GENERAL SECONDARY	18,994	835	452	19	22.7	42.0
TECHNICAL SECONDARY	31,313	1,539	868	22	20.3	36.1
TOTAL	412,201	13,673	9,958	860	30.2	41.4
UNIVERSITY*	--	--	--	--	--	--

(Continued)

TABLE II-41b
NUMBER OF STUDENTS, TEACHERS, CLASSROOMS AND SCHOOLS BY GOVERNORATE, 1980*

LEVEL/TYPE	STUDENTS	TEACHERS	CLASSROOMS	SCHOOLS	STUDENT/TEACHER RATIO	STUDENT/CLASSROOM RATIO
GHARBIA						
PRIMARY	276,635	8,952	6,828	700	30.9	40.5
PREPARATORY	104,407	4,131	2,622	118	25.3	39.8
GENERAL SECONDARY	22,864	1,363	605	24	16.8	37.8
TECHNICAL SECONDARY	41,[illegible]	2,649	1,179	24	15.7	35.2
T O T A L	445,464	17,605	11,234	866	26.0	39.7
UNIVERSITY*	21,832	N.A.	N.A.	N.A.	N.A.	N.A.
KAFR EL SHEIKH						
PRIMARY	154,479	4,704	3,772	475	32.8	40.9
PREPARATORY	48,308	1,546	1,258	58	31.2	38.4
GENERAL SECONDARY	13,312	519	327	15	25.6	40.7
TECHNICAL SECONDARY	20,591	940	591	13	21.9	34.8
T O T A L	236,690	7,709	5,948	561	30.7	39.8
UNIVERSITY*	--	--	--	--	--	--
MENOUFIA						
PRIMARY	226,978	6,197	5,771	545	36.6	39.3
PREPARATORY	81,378	2,945	2,007	99	27.6	40.5
GENERAL SECONDARY	19,856	9[illegible]	458	23	21.8	43.3
TECHNICAL SECONDARY	29,709	1,901	925	23	15.6	32.1
T O T A L	357,921	11,905	9,161	690	29.9	39.1
UNIVERSITY*	11,801	N.A.	N.A.	N.A.	N.A.	N.A.
QALYUBIA						
PRIMAEY	234,569	5,569	5,551	543	42.1	42.2
PREPARATORY	76,373	2,561	1,858	108	29.8	41.1
GENERAL SECONDARY	17,374	838	415	16	20.7	41.9
TECHNICAL SECONDARY	28,995	1,678	843	24	17.3	34.4
T O T A L	357,311	10,646	8,667	691	33.6	41.2
UNIVERSITY*	--	--	--	--	--	--
DAKAHLIA						
PRIMARY	348,617	10,832	8,974	983	32.2	38.8
PREPARATORY	124,438	3,877	3,402	169	32.1	36.6
GENERAL SECONDARY	37,821	1,815	904	36	20.8	41.8
TECHNICAL SECONDARY	48,753	2,664	1,573	35	18.3	31.0
T O T A L	559,629	19,188	14,853	1,223	29.2	37.7
UNIVERSITY*	31,398	N.A.	N.A.	N.A.	N.A.	N.A.
DAMIETTA						
PRIMARY	85,108	2,580	2,193	231	33.0	38.8
PREPARATORY	25,201	1,031	780	44	24.4	32.3
GENERAL SECONDARY	8,482	306	214	6	27.7	39.6
TECHNICAL SECONDARY	10,214	681	318	10	15.0	32.1
T O T A L	129,005	4,598	3,505	291	28.1	36.8
UNIVERSITY*	--	--	--	--	--	--

(Continued)

TABLE II-41c
NUMBER OF STUDENTS, TEACHERS, CLASSROOMS AND SCHOOLS BY GOVERNORATE, 1980

LEVEL/TYPE	STUDENTS	TEACHERS	CLASSROOMS	SCHOOLS	STUDENT/TEACHER RATIO	STUDENT/CLASSROOM RATIO
SHARKIA						
PRIMARY	308,017	8,884	7,682	905	34.7	40.1
PREPARATORY	108,537	3,703	2,967	194	29.3	36.6
GENERAL SECONDARY	28,[illegible]0	1,261	666	40	22.3	42.2
TECHNICAL SECONDARY	37,582	2,057	1,119	37	18.3	33.6
T O T A L	482,256	15,905	12,434	1,176	30.3	38.8
UNIVERSITY*	35,355	N.A.	N.A.	N.A.	N.A.	N.A.
GIZA						
PRIMARY	303,389	6,981	6,958	465	43.5	43.6
PREPARATORY	94,16[illegible]	3,095	2,278	111	30.4	41.3
GENERAL SECONDARY	31,825	1,449	753	30	22.0	42.3
TECHNICAL SECONDARY	29,429	1,507	870	20	19.5	33.8
T O T A L	458,807	13,032	10,859	626	35.2	42.3
UNIVERSITY*	91,851	N.A.	N.A.	N.A.	N.A.	N.A.
EL FAYOUM						
PRIMARY	109,324	3,691	2,892	315	29.6	37.8
PREPARATORY	29,857	1,124	773	39	26.6	38.6
GENERAL SECONDARY	8,103	354	198	6	22.9	40.9
TECHNICAL SECONDARY	12,299	758	357	8	16.2	34.4
T O T A L	159,583	5,927	4,220	368	26.9	37.8
UNIVERSITY*	--	--	--	--	--	--
BENI SUEF						
PRIMARY	116,195	4,319	3,262	352	26.9	35.6
PREPARATORY	31,227	1,133	781	44	27.6	40.0
GENERAL SECONDARY	6,850	365	181	8	18.8	37.8
TECHNICAL SECONDARY	13,760	1,066	401	15	12.9	34.3
T O T A L	168,032	6,883	4,626	419	24.4	36.3
UNIVERSITY*	--	--	--	--	--	--
MINIA						
PRIMARY	193,191	7,706	5,286	643	25.1	36.5
PREPARATORY	57,879	2,333	1,417	81	24.8	40.8
GENERAL SECONDARY	12,262	695	300	14	17.6	40.9
TECHNICAL SECONDARY	21,406	1,702	593	20	12.6	36.1
T O T A L	284,738	12,436	7,596	758	22.9	37.5
UNIVERSITY*	10,286	N.A.	N.A.	N.A.	N.A.	N.A.
ASSIUT						
PRIMARY	179,177	5,567	4,517	521	32.2	39.7
PREPARATORY	54,398	2,106	1,456	89	25.8	37.4
GENERAL SECONDARY	12,830	686	352	18	18.7	36.4
TECHNICAL SECONDARY	19,026	1,341	583	17	14.2	32.6
T O T A L	265,421	9,700	6,908	645	27.4	38.4
UNIVERSITY*	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

(Continued)

4. Health Characteristics

A healthy population is a means as well as an end to development. The health characteristics of the population directly affect the general productivity of a nation. They affect the supply, quality and cost of manpower required for development. On the other hand, the goal of development is to raise the quality of life for a population, and health is an important component of the quality of life.

The health status of a population is usually tied closely to the level of education and to the level of income. Health is determined by family conditions, and the level of health education. The relative investment a nation makes on curative as opposed to preventative medicine is a measure of efficiency of a health system, since prevention of disease is usually a cheaper alternative than curing disease.

There are several indicators of the health status of a population that are generally available: nutritional status, infant mortality and child mortality rates, life expectancy at birth, and maternal mortality rates. These data, as well as leading causes of illness and death will be reviewed in the following section.

a. Nutritional Status. Compared to some other countries, nutrition is not a major problem in Egypt. The Egyptian population in the aggregate has access to adequate amounts of food, although there are some distributional problems in some neighborhoods of some cities. It has been estimated that the average per capita daily consumption was 2,760 calories in 1977, or 109 percent of the daily requirement.[25] A 1979 study[26] showed total calorie consumption of 3,122 per capita per day. Around 11 percent of this average calorie intake is from proteins. The average daily protein consumption is 86.7 grams and its main source is plant protein.[27]

A 1979 nutrition survey estimated that 1.11 million pre-school children in 17 governorates investigated had stunted growth (less than 90 percent of expected height for age).[28] Such stunting is an indicator of under-nutrition of

TABLE II-41d
NUMBER OF STUDENTS, TEACHERS, CLASSROOMS AND SCHOOLS
BY GOVERNORATE, 1980

LEVEL/TYPE	STUDENTS	TEACHERS	CLASSROOMS	SCHOOLS	STUDENT/TEACHER RATIO	STUDENT/CLASSROOM RATIO
SOHAG						
PRIMARY	188,533	7,423	5,107	609	25.4	36.9
PREPARATORY	56,369	2,440	1,439	81	23.1	39.2
GENERAL SECONDARY	12,890	583	327	14	22.1	39.4
TECHNICAL SECONDARY	19,075	1,428	571	20	13.3	33.4
TOTAL	276,867	11,874	7,444	724	23.3	37.2
UNIVERSITY*	-	--	--	--	--	--
QENA						
PRIMARY	174,526	5,983	4,798	503	29.2	36.4
PREPARATORY	51,474	1,852	1,293	89	27.8	39.8
GENERAL SECONDARY	12,275	615	304	18	19.9	40.1
TECHNICAL SECONDARY	19,976	1,090	586	15	13.3	34.1
TOTAL	258,251	9,540	6,981	625	27.1	37.0
UNIVERSITY*	--	--	--	--	--	--
ASWAN						
PRIMARY	92,137	2,980	2,382	280	30.9	38.7
PREPARATORY	32,229	1,117	849	49	28.9	38.0
GENERAL SECONDARY	6,759	274	177	7	24.7	38.2
TECHNICAL SECONDARY	12,261	725	362	12	16.9	33.9
TOTAL	143,376	5,096	3,770	347	28.1	38.0
UNIVERSITY*	--	--	--	--	--	--
MATRUH						
PRIMARY	13,039	510	422	77	25.6	30.9
PREPARATORY	2,669	178	85	8	15.0	31.4
GENERAL SECONDARY	1,054	70	34	1	15.0	31.0
TECHNICAL SECONDARY	85	10	4	--	8.5	21.2
TOTAL	16,847	768	545	86	21.9	30.9
UNIVERSITY*	--	--	--	--	--	--
NEW VALLEY						
PRIMARY	15,440	814	547	70	19.0	28.2
PREPARATORY	5,405	205	192	12	26.4	28.2
GENERAL SECONDARY	1,375	88	46	2	15.6	29.9
TECHNICAL SECONDARY	1,891	112	69	3	16.9	27.4
TOTAL	24,111	1,219	854	87	19.8	28.2
UNIVERSITY*	--	--	--	--	--	--
RED SEA						
PRIMARY	8,163	386	243	22	21.1	33.6
PREPARATORY	3,011	214	103	8	14.1	29.2
GENERAL SECONDARY	1,059	76	38	3	13.9	27.9
TECHNICAL SECONDARY	1,118	75	35	2	14.9	31.9
TOTAL	13,351	751	419	35	17.8	31.9
UNIVERSITY*	--	--	--	--	--	--

(Continued)

calories and proteins. (Table II-44) Wasting, which is based on the ratio of weight to height was not found to be a significant problem. (Table II-45) Anemia, which is defined as less than 10 grams of hemoglobin in 10 ml of blood, was estimated to affect 1.4 million pre-school children. (Table II-46)

The prevalence of these three conditions is greater in Upper than Lower Egypt and in rural areas more than in urban areas. However, lower income groups in metropolitan areas of Cairo and Alexandria have rates similar to those in rural areas. Malnutrition of pre-school children tends to be associated with rural living, the less privileged areas of large cities, breast feeding practices, low occupational status of the father, low educational level of the father, and high birth order of the child.[29] In addition to the degree of accessibility to food as a major source of malnutrition, the level of awareness of parents, especially mothers, is also an important contributor to malnutrition. Children may have enough food as measured by caloric value, but may be taking in insufficient quantities of other required nutrients. Health education is generally low in both rural areas and among the urban low socioeconomic groups, many of whom are recent migrants from rural areas.

In addition to the income and geographic distribution of lower nutrition levels, it is important to look for patterns of distribution within families. Total caloric supply may be adequate, but inequitably distributed. In some countries men consume an inordinate share of the total supply. There are not adequate data to confirm or reject such an hypothesis for Egypt.

Food availability, although adequate at present in the aggregate, may affect general nutritional levels in the near future. Availability of food has been satisfactory in the recent past in both urban and rural areas. The Ministry of Supply exerts special efforts to see that basic food requirements are met, especially in urban areas. However, the projected growth of the population and the ongoing rate of decrease in

TABLE II-41e
NUMBER OF STUDENTS, TEACHERS, CLASSROOMS AND SCHOOLS BY GOVERNORATE, 1980

LEVEL/TYPE	STUDENTS	TEACHERS	CLASSROOMS	SCHOOLS	STUDENT/TEACHER RATIO	STUDENT/CLASSROOM RATIO
NORTH SINAI						
PRIMARY	10,480	393	268	30	26.7	39.1
PREPARATORY	2,832	117	71	7	24.2	40.0
GENERAL SECONDARY	1,943	100	53	4	19.4	36.7
TECHNICAL SECONDARY	298	37	9	2	8.0	33.1
T O T A L	15,553	647	401	43	24.0	38.8
UNIVERSITY*	--	--	--	--	--	--
SOUTH SINAI						
PRIMARY	1,061	131	80	27	8.1	13.3
PREPARATORY	31	21	3	1	2.6	10.3
GENERAL SECONDARY	21	6	1	--	3.5	21.0
TECHNICAL SECONDARY	--	--	--	--	--	--
T O T A L	1,113	158	84	28	7.5	13.3
UNIVERSITY*	--	--	--	--	--	--

* = 1978 Census.

NOTE: Cairo University figures are included in Giza due to its location within the administrative boundaries of Giza Governorate.

SOURCE: Ministry of Education.

TABLE II-42
STUDENT/TEACHER AND STUDENT/CLASSROOM RATIOS FOR PRIMARY SCHOOLS, BY GOVERNORATE, 1980

	STUDENT/TEACHER	STUDENT/CLASSROOM
Cairo	34.3	40.3
Alexandria	33.7	43.4
Port Said	16.6	38.8
Ismailia	34.3	41.3
Suez	34.6	39.1
Beheira	32.4	42.2
Gharbia	30.9	40.5
Kafr El Sheikh	32.8	40.9
Menoufia	36.6	39.3
Qalyubia	42.1	42.2
Dakahlia	32.2	38.8
Damietta	33.0	38.8
Sharkia	34.7	40.1
Giza	43.5	43.6
El Fayoum	29.6	37.8
Beni Suef	26.9	35.6
Minia	25.1	36.5
Assuit	32.2	39.7
Sohag	25.4	36.9
Qena	29.2	36.4
Aswan	30.9	38.7
Matruh	25.6	30.9
New Valley	19.0	28.2
Red Sea	21.1	33.6
North Sinai	26.7	39.1
South Sinai	8.1	13.3

SOURCE: Ministry of Education.

TABLE II-43
HIGHER EDUCATION ENROLLMENT AND COST PER STUDENT IN EGYPT, SELECTED YEARS, 1957-1975

YEAR	NUMBER OF STUDENTS (IN '000)	HIGHER EDUCATION SHARE OF EDUCATION BUDGET (PERCENTAGE)	COST PER STUDENT (IN CONSTANT 1957 US DOLLARS)
1957	83	13.8	201
1961	115	13.8	219
1962	143	20.8	309
1963	146	20.9	286
1964	144	21.4	298
1965	177	19.2	213
1970	218	20.4	195
1974	381	29.4	227
1975	426	30.0	210

NOTE: Cost refers to recurrent expenditure.

SOURCE: Psacharpoulas, George. Higher Education in Developing Countries: A Cost-Benefit Analysis. Washington, D.C. World Bank, 1980, p. 78.

Based on UNESCO, Statistical Yearbook, various years and International Monetary Fund, International Financial Statistics, various issues.

the quantity of fertile agricultural lands will put greater strains on the government to be able to satisfy food requirements.

b. Mortality Rates. Deaths of infants, children and adults still in their productive years are of particular concern in developing countries. Mortality in each of these categories has been declining in Egypt as reflected in infant mortality rates, rates for death of children 1-4 years old, and overall life expectancy. (Tables II-47, 48, 49)

c. Causes of Mortality: Infant and Child Mortality. Infant mortality rates in Egypt are declining gradually but are still high relative to Egypt's overall level of development. Around 10 percent (8.5 to 10.8 percent in 1978, depending on the data source) of all live births die prior

TABLE II-44
PERCENTAGE DISTRIBUTION OF PRESCHOOL CHILDREN BY HEIGHT FOR AGE CLASSES AND GEOGRAPHIC AREA: EGYPT 1978

	PERCENTAGE OF REFERENCE MEDIAN					
	Chronic Undernutrition		Normal			
GEOGRAPHIC AREA	Severe <85.0	Moderate 85.0-89.9	90.0-94.9	95.0+	Total[1/]	
Lower Rural	4.6%	17.2%	41.8%	36.4%	100.0%	(3,552)
Upper Rural	6.7%	20.8%	39.3%	33.2%	100.0%	(1,784)
Large Villages	4.6%	19.7%	44.7%	31.0%	100.0%	(889)
Small Towns	2.9%	11.9%	41.4%	43.8%	100.0%	(894)
Small Cities	1.7%	8.9%	33.2%	56.2%	100.0%	(897)
Total Representative Sample	4.5%	16.7%	40.4%	38.4%	100.0%	(8,016)
Cairo-Giza Low Income	3.5%	15.5%	41.1%	39.9%	100.0%	(890)
Alexandria Low Income	2.9%	12.8%	43.2%	41.1%	100.0%	(888)
Special Group (High Income)	0.1%	1.0%	9.7%	89.2%	100.0%	(1,883)

1/All percentages are weighted by universe population proportions. The actual number of persons surveyed are given in parenthesis.

SOURCE: Nutrition Institute: 1979, p. 27.

TABLE II-45
PERCENTAGE DISTRIBUTION OF PRESCHOOL CHILDREN BY WEIGHT FOR AGE CLASSES AND GEOGRAPHIC AREA: EGYPT 1978

	PERCENTAGE OF REFERENCE MEDIAN					
	Acute Undernutrition		Normal	Over Weight		
GEOGRAPHIC AREA	Severe <80.0	Moderate 80.0-84.9	85.0-119.9	120.0+	Total[1/]	
Lower Rural	0.7%	1.7%	94.2%	3.4%	100.0%	(3,552)
Upper Rural	0.8%	2.1%	94.7%	2.5%	100.0%	(1,784)
Large Villages	0.3%	1.6%	94.4%	3.7%	100.0%	(889)
Small Villages	0.6%	1.9%	94.9%	2.7%	100.0%	(894)
Small Cities	0.3%	1.0%	96.0%	2.7%	100.0%	(897)
Total Representative Sample	0.6%	1.7%	94.7%	3.1%	100.0%	(8,016)
Cairo-Giza Low Income	0.8%	2.7%	94.0%	2.5%	100.0%	(890)
Alexandria Low Income	0.2%	0.3%	95.9%	3.5%	100.0%	(888)
Special Group (High Income)	0.1%	1.0%	94.1%	4.8%	100.0%	(1,883)

1/All percentages are weighted by universe population proportions. The actual number of persons surveyed are given in parenthesis.

SOURCE: Nutrition Institute, 1979, p. 24.

TABLE II-46
PERCENTAGE DISTRIBUTION OF PRESCHOOL CHILDREN BY HEMOGLOBIN IN VALUES GEOGRAPHIC AREA: EGYPT 1978

	HEMOGLOBIN VALUE (gms/100ml) 1/				
GEOGRAPHIC AREA	<9.5	<11.0	11.0+	Total[2/]	
Lower Rural	14.9%	44.6%	55.4%	100.0%	(715)
Upper Rural	16.5%	43.4%	56.6%	100.0%	(358)
Large Villages	11.9%	39.2%	60.8%	100.0%	(176)
Small Towns	8.3%	30.5%	69.4%	100.0%	(180)
Small Cities	3.3%	23.3%	76.7%	100.0%	(180)
Total Representative Sample	12.2%	38.4%	61.6%	100.0%	(1,609)
Cairo-Giza Low Income	5.6%	35.5%	64.4%	100.0%	(177)
Alexandria Low Income	11.8%	42.1%	57.9%	100.0%	(178)
Special Group (High Income)	1.9%	16.9%	83.0%	100.0%	(359)

1/Hemoglobin value less than 9.5 gm/100ml is indicative of severe anemia. Hemoglobin value less than 11 gm/100ml is defined by WHO as indicative of anemia.

2/All percentages are weighted by universe population proportions. The actual number of persons surveyed are given in patenthesis.

SOURCE: Nutrition Institute, 1979, p. 42.

TABLE II-47
INFANT MORTALITY RATES
BY GOVERNORATES IN 1974-1976

	URBAN/1000		RURAL/1000		TOTAL/1000	
	1974	1976	1974	1976	1974	1976
Cairo	136	111	—	—	136	111
Alexandria	111	89	—	—	111	89
Port Said	80	80	—	—	80	80
Suez	85	110	—	—	85	110
Damietta	72	69	83	71	80	71
Dakahlia	76	68	75	61	76	63
Sharkia	92	74	85	78	87	77
Qalyubia	143	117	114	99	125	106
Menoufia	124	91	123	113	124	109
Behera	87	70	64	61	69	63
Ismailia	89	85	92	74	91	79
Giza	123	100	105	102	114	101
Beni Suef	150	123	87	75	103	87
Fayoum	139	109	111	93	118	97
Minia	135	117	101	87	108	93
Assiut	122	109	90	88	100	93
Sohag	137	99	76	69	90	76
Qena	135	106	58	58	75	71
Aswan	149	150	118	121	127	130
Red Sea	—	—	—	—	157	123
New Valley	—	—	—	—	116	96
Matruh	—	—	—	—	37	31
Sinai	—	—	—	—	15	19
TOTAL		99		79		87

SOURCE: CAPMAS, Vital Statistics, 1974, 1976.

TABLE II-48
INFANT AND CHILD MORTALITY RATES
EGYPT, 1960-1978

YEAR	INFANT (Less than 1 Year)	CHILDREN 1 - 4 Years
1960 2/	109/1,000	32/1,000
1970 3/	101	23
1975 4/	101	--
1976 5/	87	--
1977 6/	108	18
1978 2/	108/85 1/	18/15 1/

1/ World Development Report (WDR) 1980 has 108/1,000 infant mortality while WDR 1981 reports 85/1,000. WDR 80 reports 18/1,000 child death rate while 81 15/1,000. Both sets of figures are as reported to the World Bank by official Egyptian sources.

SOURCES: World Bank, World Development Report, 2/ 1981.
World Bank, World Tables, 3/ 1980.
World Bank, Education: Sector Policy Paper, 4/ 1980.
CAPMAS, Vital Statistics, 5/ 1976.
World Bank, World Development Report, 6/ 1980.

to first birthday; this is roughly 25 percent of all deaths. Furthermore, mortality rates in certain areas of the country are appreciably higher. (Table II-47) The average life expectancy at birth in 1975 was 52 years for males and 55 years for females, and in 1979 the overall rate was 57 years. (Table II-49) A large part of the low life expectancy at birth is due to high infant and child mortality, and data on life expectancy at age one and at age five would be helpful, but is

TABLE II-49
LIFE EXPECTANCY AT BIRTH
EGYPT, 1960-1979

1960	46
1970	51
1977	54
1978	54
1979	57

SOURCE: World Bank, World Development Report, Issues for 1979, 1980, 1981.

TABLE II-50
VITAL STATISTICS FOR CAIRO GOVERNORATE
COMPARISON WITH NATIONAL AVERAGE
1962-1972

	Crude Birth Rate		Crude Death Rate		Infant Mortality Rate	
	National	Cairo	National	Cairo	National	Cairo
1962	41.5	43.8	17.9	16.3	134	161
1963	43.0	43.5	15.5	14.6	119	152
1964	42.3	40.6	15.7	15.6	117	157
1965	41.7	38.3	14.1	14.8	113	154
1966	41.2	35.9	15.9	13.9	127	157
1967	39.2	33.4	14.2	11.5	116	139
1968	38.2	33.9	16.1	14.1	131	160
1969	37.0	32.4	14.5	12.1	119	151
1970	35.1	31.2	15.1	13.2	118	144
1971	35.1	31.6	13.2	11.4	103	125
1972	34.4	30.1	14.5	13.0	116	151

SOURCE: National Institute of Planning and Ministry of Health. Perception and Utilization of Health Care Services in the Greater Cairo Area. Cairo, 1978. p. 16.

Compiled from CAPMAS, Statistical Indicators, various years.

not available. Infant mortality rates are usually under-estimated. Among urban low income families and in rural areas, there is a tendency not to register babies who die before they are officially registered as births. This practice affects infant mortality estimates more than it does birth rate estimates.

As shown in Table II-47, infant mortality rates of rural and urban populations of governorates indicate no strong pattern. The rates in rural areas are in some cases lower than the urban rates for the same governorate. There are at least three possible explanations:

i) Unreliability of data due to under-reporting, especially in rural areas;

ii) Urban low income families have reduced access to health care due to traffic congestion and patterns of service point distribution;[30]

iii) High population densities in low income urban areas increase risks of contagion and contamination.

A look at time series data for the nation and for Cairo Governorate shows that Cairo's birth rate is falling faster than the national average, the death rate at about the same pace, with the infant mortality rate dropping very little. (Table II-50) A look at 1974 and 1976 data (Table II-47) show, however, a sharp drop between 1974 and 1976, if the data are valid.

The major cause of infant and child death is disease of the digestive system. Diarrheal diseases cause dehydration that leads to death. The second major cause of death is respiratory infections.

There is very little awareness among poorly educated people of causes of sickness and death. They do not relate lack of sanitation and malnutrition to health problems. The most professed explanations for sickness is the evil eye, the will of God, and/or weather conditions, i.e., sun, heat, warm breeze, damp and cold temperatures. Insects are perceived as nuisances rather than carriers of bacteria or virus. Where

recognized as a cause of illness, the exact relationship is usually not perceived. Moreover, while most people accept and appreciate formal medical services, informal folk medicine is still quite popular. Formal medicine is resorted to when folk medicine fails to cure the illness or worsens it. This tends to be the case especially with infants and the newly-born babies.

Child loss is also highly correlated with high fertility. Parents who lose children or who are faced with the risk of losing children tend to overcompensate by having a high number of live births.

TABLE II-51
MORTALITY RATES IN EGYPT FROM 1952-1976

RATES/1,000	1952	1960	1970	1975	1976
Neonatal Mortality	20.6	19.3	19.9	--	14.9
Infant Mortality	127.0	109.0	116.0	101.0	87.0
Maternal Mortality	1.4	1.1	1.1	1.0	0.8

SOURCE: MOH, The Strategy of Health in Egypt for the Year 2000, p. 2. 1976 data are from CAPMAS, Vital Statistics, 1976.

TABLE II-52
RELATIVE DISTRIBUTION OF FIVE DIAGNOSES, BY SEX, IN PUBLIC HOSPITALS IN 1975

DIAGNOSIS	MALES (%)	FEMALES (%)
Accidents, Poison & Violence	23.8	7.9
Gastrointestinal Diseases	23.2	11.9
Cardiovascular Diseases	9.9	--
Urogenital Diseases	8.3	13.6
Complications of Pregnancy, Labor & Puerperium	--	38.6
Other Diagnoses	34.8	28.0
TOTAL	100.0	100.0

SOURCE: MOH, Health Profile of Egypt, The Strategy of Health in Egypt for the Year 2000. Memo No. 7, MOH 1979.

TABLE II-53
CAUSES OF DEATH IN 1976

CAUSE	MALE %	FEMALE %	TOTAL %
Infectious and Parasitic Diseases	2.99	1.97	2.5
Neoplasms	2.07	1.19	1.66
Endocrine, Nutritional, and Metabolic Diseases	0.70	0.74	0.72
Diseases of Blood & Blood-Forming Organs	0.83	0.37	0.61
Mental Disorders	0.08	0.05	0.06
Diseases of the Nervous System and Sense Organs	0.96	0.7	0.84
Diseases of the Circulatory System	19.83	16.60	18.2
Diseases of the Respiratory System	16.30	17.5	16.8
Diseases of the Digestive System	25.94	28.6	27.2
Diseases of the Genitourinary System	1.56	0.68	1.28
Complications of Pregnancy & Childbirth	--	0.56	0.26
Diseases of Skin & Subcutaneous Tissues	0.03	0.02	0.02
Diseases of the Musculoskeletal System & Connective Tissue	0.04	0.04	0.04
Congenital Anomalies	0.74	0.75	0.73
Certain Causes of Perinatal Mortality	4.07	3.67	4.02
Symptoms & Ill-defined Conditions	18.47	32.11	20.6
Accidents, Poisoning & Violence	5.39	1.79	4.1
TOTAL NUMBER	225,885	204,383	430,268

NOTE: The table does not include cases of registered deaths with no cause: 7,428 males and 6,522 females.

SOURCE: CAPMAS, Vital Statistics, 1976.

In order to meet the minimal cultural, social and economic requirement of two surviving male children, a rural family must have an average of nine pregnancies in order to have five survivals, with a probability of two to three male children.[31] On the other hand, high fertility also affects infant mortality. The higher the order of birth, the greater the propensity to malnutrition, morbidity, and mortality.

d. Cause of Mortality: Maternal Mortality. Maternal mortality is estimated to be around one death for every 1,000 live births. This rate is about 15 times as high as the rate in the United States.[32] Infection and toxemia are among the leading causes of maternal death.

Almost 50 percent of all deliveries take place at home. Most of these deliveries are supervised by traditional, informal helpers called dayas (informal midwives). The dayas do not have any formal skills in medical care. They acquire their skills through folk-knowledge and on-the-job experiences. Doctors or registered nurses are called in only in complicated cases and usually too late.

During the early 1960's the Ministry of Health provided the opportunity for informal midwives to formally register at the Ministry which provided them with formal training. This practice was then terminated and it became illegal to practice midwivery without being registered. It has been observed, however, that the activities of dayas are still flourishing and diminishing the effectiveness of the formal medical system. Now the Ministry of Health is seriously considering how to integrate the informal dayas services with the services provided by the health units to up-grade their skills and solicit their cooperation.

Table II-51 shows death rates, neonatal mortality rates, infant mortality rates, and maternal mortality rates from 1952-1976.

Infectious diseases are one of the major causes of morbidity in Egypt. These include bacterial, viral and parasitic diseases. (Table II-52)

Though reliable data on incidence of infectious diseases are lacking, the Institute of Medicine study group, through extensive interviews, produced a summary picture of the prevalence of infectious diseases in Egypt.[33]

The most prevalent bacterial diseases are typhoid and paratyphoid, streptococcal disease and rheumatic fever, tuberculosis and leprosy. The occurrence rate of typhoid and paratyphoid is around 50/100,000, mostly in the summer months of May through November. Their fatality rate is around 1 percent. Streptococcal disease and rheumatic fever occur mostly among children aged 6-15 years with a rate of 6/1,000 persons. The prevalence rate of tuberculosis is around 2/1,000 persons and its fatality rate is around 8/100,000. The leprosy occurrence rate is also high, 2/1,000; there are several specialized hospitals for its treatment.

Viral diseases prevalent in Egypt are hepatitis, rabis, trachoma and acute eye infection, poliomyelitis and measles. The occurrence rate of hepatitis is believed to be greater than 150/100,000 and its fatality rate is around 1/100 infected case. Over 2,000 cases of rapis occur per year with many being fatal. Trachoma and acute eye infection is a serious problem. Around 5 percent of rural population and 1-2 percent of urban population have visual disorders caused by eye infections. Poliomyelitis is a recent problem in Egypt and the Ministry of Health has started an annual immunization campaign. However, the occurrence rate is around 1,700 cases per year.

Of the parasitic diseases, schistozomiasis (bilharziasis) and amebiasis are the most prevalent in Egypt. Children are infected by these parasites from an early age. Though nationwide survey estimates report a decline in overall prevalence of schistosmiasis infection to 20 percent of the population (1976), all localized studies indicate higher prevalence especially in rural areas. The change from basin irrigation to perennial irrigation after the High Dam and the termination of annual flooding of the Nile River have increased the prevelance rates especially in rural Upper Egypt.

TABLE II-54
MCH HEALTH FACILITIES
IN THE URBAN SECTOR IN EGYPT
1980

	NUMBER
1. MCH SERVICES:	
MCH Centers	221
Maternity Hospitals	4
Obstetric Sections in General Hospitals	170
2. SCHOOL HEALTH SERVICES:	
School Units	144
School Health Policlinics	50
Childrens Hospitals	5
Specialized Units	26
3. HEALTH EDUCATION SERVICES:	
Health Education Offices	56
Museums	15
4. PARASITIC AND ENDEMIC DISEASES CONTROL SERVICES:	
Separate Clinics	6
Endemic Diseases Sections in General Hospitals	129
Specialized Hospitals	28
Field Units for Schistosomiasis Control	1,394
Field Units for Malaria Control	303
5. COMMUNICABLE DISEASES CONTROL:	
Health Bureaus	317
Quarantine Centers	22
Infectious Diseases Hospitals and Sections	--
In-general Hospitals	83
Yellow Fever Control Teams	83
6. ENVIRONMENTAL SANITATION:	
Environmental Sanitation Units	71
Food Handlers Examination Units	50
7. MEDICAL CARE:	
Urban Health Centers	33
Policlinics	29
General Hospitals	170
Chest Dispensaries	59
Mass Radiography Units	49
Central and Government Labs	159

SOURCE: Ministry of Health.

The prevalence rate of amebiasis ranges from 20-90 percent with high occurrence among low income groups in rural and urban areas. In spite of great efforts exerted by the Ministry of Health in the last three decades to limit the prevalence of these parasitic diseases, success is modest. The majority of the rural population use canals for bathing, washing clothes and washing cooking utensils. In some areas where running clean water is available, villagers still use canals. The pollution of the Nile water is further aggravated by urban sewage disposal.

Among the leading causes of death in Egypt are diseases related to circulatory system, the respiratory system and the digestive system. (Table II-53) Cardio-vascular diseases are gradually increasing as a cuase of death.

In general, the health profile of the Egyptian population, though gradually improving, is still below the accepted standards. No one has estimated the national costs of the high infant and child mortality rates. Families lose between 18-33 percent of their children ever born. This inevitability constitutes great strain and wastage of national resources.

e. Urban Health Services. The Ministry of Health (MOH) in Egypt categorizes its functions into two main areas: preventive and curative functions. The preventive services include Mother and Child Health (MCH) services and School Health services.

Preventive services provide immunizations, communicable disease control, environment monitoring and food and water hygiene. These services are carried out by 317 Health Bureaus, each serving an average of 53,000 urban residents.

MCH services are provided in 221 urban MCH centers, each serving an average of 75,000 persons. (Table II-54) These centers are supported by 4 maternity hospitals and 170 obstetric sections in general hospitals.

School Health services are provided by 144 School Health Units. These units are supported by 50 School Health Polyclinics, 20 Specialized School Health Units and 5 Children's Hospitals.

Curative functions are carried out in MCH centers and School Health Units as well as in out-patient clinics of hospitals and in-patient hospital services.

There are several formal channels that provide curative health services in urban areas in addition to MOH curative services. Private clinics play a major role and private hospitals have been increasing gradually in recent years. As for the public sector, there are curative services provided by university hospitals for the training of physicians, services provided under the curative establishment and services provided by the health insurance system.

To cope with the deficiencies of the health status of the population, especially the low income groups, the recent trend in the government health policy is to augment the Primary Health Care System and to improve the referral system of health services.

Towards this goal MOH established 57 General Urban Health Centers that combine MCH, School Health and Health Bureaus in one building that serves around 50,000 families. These centers are supposed to provide an integrated health program to the target population and represent the first level of health services i.e., the periphery level. Screening, diagnosing and first level treatments are accomplished at this level. Also, this level will perform health education functions to the target population.

Patients that require specialists are referred to Polyclinics, which is the second level. Cases that require hospitalization will then be referred to the selected hospital.

However, this referral system is still ineffective as it is managerially difficult to apply. People go immediately to central levels and to specialists, by-passing the peripheral level.

Table II-55 shows the number of public and private facilities in Greater Cairo in 1977, and Table II-56 shows the manpower resources for Greater Cairo in 1977. These data were not available for either urban or overall Egypt.

E. Alternative Demographic Projections to 2000

Demographic projections provide an idea of the population which must be served by settlement strategies. The projections presented here provide order-of-magnitude estimates of a demographic profile of Egypt through the year 2000 — total and urban population, and expected labor force.

According to NUPS current medium estimate, the 1980 population of Egypt was estimated at 42 million. The corresponding urban population in the year 2000 is expected to be about 37 million (with a range of 34 to 39 million), nearly double the current urban population.

Considerable demographic research has recently focused on predicting Egypt's future population through the year 2000. For this reason, completion of the NUPS national population projections did not involve the construction of a set of projections de novo; instead, it followed from a comparative analysis of the existing research, out of which the most plausible set of projections was extracted.

The comparative analysis included seven sets of projections that are now available. One set has been estimated by RAPID for USAID; the second and the third sets by CAPMAS; the fourth by L. R. Satin, quoted in the Suez Canal Regional Plan, 1976; the fifth by Watkins, 1976; the sixth by the World Bank in 1978; and the seventh by the United Nations in 1978.

1. Set of Projections Done by RAPID for USAID

The following projections are based on three assumptions for average number of living children per family in the year 2000 for varying fertility and net reproductive rates. (Table II-57)

a. Average number of living children per family in the year 2000 - 2/family;

b. Average number of living children per family in year 2000 - 3/family;

TABLE II-55
NUMBER OF HEALTH SERVICE DELIVERY POINTS
GREATER CAIRO, 1977

PUBLIC (Ministry of Health)					PRIVATE					
GENERAL HOSPITALS	SPECIALIST HOSPITALS	SCHOOL HEALTH	HEALTH BUREAU	MCH CENTER	PRIVATE HOSPITALS	DISPENSARIES CLINICS	PHARMACIES	UNIVERSITY HOSPITALS	HEALTH INSURANCE ORGANIZATIONS	MCH
15	12	40	64	44	219	294	1,372	14	6	12

SOURCE: Sukkary, Soheir. The Urban Health Project in Egypt: A Socio-Cultural Report, p. 15.

TABLE II-56
HEALTH MANPOWER RESOURCES, GREATER CAIRO, 1977

GENERAL PRACTITIONERS	SPECIALISTS	PHARMACISTS	DENTISTS	NURSE/ MIDWIFE	MEDICAL TECHNICIAN	HEALTH SUP.	SOCIAL WORKERS	CLERICAL/ ADMIN.	OFFICE ASSISTANTS
1,584	510	329	255	2,895	318	262	186	329	4,307

SOURCE: Sukkary, Soheir. The Urban Health Project in Egypt: A Socio-Cultural Report, p. 16.

TABLE II-57
SET OF PROJECTIONS DONE BY RAPID OF USAID [1]

Assumptions	1975	1980	1985	1990	1995	2000
	Years					
A. Average Number of Living Children Per Family in the Year 2000, 2/Family.						
1. Estimated Population	37,217	42,707	47,887	52,660	56,629	59,608
2. Total Fertility Rates	6.02	5.18	5.45	3.65	2.77	2.77
3. Net Reproductive Rate	2.2	1.89	1.63	1.33	1.01	1.01
B. Average Number of Living Children Per Family in the Year 2000, 3/Family.						
1. Estimated Population	37,217	42,707	48,379	54,105	59,779	65,267
2. Total Fetility Rates	6.02	4.45	5.10	4.64	4.13	4.13
3. Net Reproductive Rate	2.20	2.03	1.86	1.69	1.51	1.51
C. Average Number of Living Children Per Family in the Year 2000, 4/Family.						
1. Estimated Population	37,217	42,707	48,555	55,554	62,850	70,874
2. Total Fertility Rates	6.02	5.89	5.57	5.62	5.49	5.49
3. Net Reporductive Rate	2.20	2.15	2.10	2.05	2.00	2.00

1/ These projections were done to demonstrate the socio-economic implications of population growth in the year 2000. So the assumptions indicate variant growth levels rather than assumed possible estimates of birth and death rates in the next two decades.

TABLE II-58
1972 SET OF PROJECTIONS DONE BY CAPMAS [1]

Assumptions	1970	1975	1980	1985	1990	1995	2000
	Population Size/000						
a. High	33,083	37,217	45,152	48,041	54,783	62,174	70,331
b. Medium	33,083	37,079	41,710	47,083	53,008	59,322	65,948
c. Low	33,083	36,800	40,837	45,370	50,208	55,324	60,532

1/ This set of projections is estimates on the basis of a projected survival ratio and three alternative assumptions about fertility:

a. High Projections: Slight decline of Gross Reproductive Rates (GRR) by half percent annually to reach 2.54 by 2000.

b. Medium Projections: GRR will decline double that of high projections to become 2.17 by 2000.

c. Low Projections: Annual 2% decline in GRR during first ten years, 1.5% during the next ten years and 1% in the last ten years to become 1.84 by 2000.

SOURCE: Ferial Abdel Kader and Mohamed N. Soliman, "Population Trends in A.R.E. up to 2000", Population Reseaarches and Studies, No. 4, July 1972, pp. 25-27.

c. Average number of living children per family in year 2000 - 4/family.

The projections were done to demonstrate the socio-economic implications of population growth to the year 2000. Therefore, the assumptions indicate variant growth levels rather than assumed possible estimates of birth and death rates in the next two decades.

2. 1972 Set of Projections Done by CAPMAS[34]

This set of projections is estimated on the basis of a projected survival ratio and three alternative assumptions about fertility. (Table II-58)

a. High Projections: slight decline of Gross Reproductive Rates by half percent annually to reach 2.54 by 2000;

b. Medium Projections: GRR will decline double that of high projections to become 2.17 by 2000;

c. Low Projections: Annual 2 percent decline in GRR during first ten years, 1.5 percent during the next ten years and 1 percent in the last ten years to become 1.84 by 2000.

3. 1980 Set of Projections by CAPMAS

a. Annual reduction of birth rates by 1/1000 starting 1976 until 2000 and reduction in death rates.

b. No change in birth rates with reduction in death rates.

The two sets of projections indicate the differences in projected size of the population when the objectives of the National Population Plan (annual reduction of birth rates by 1/1000 are applied versus no change in birth rates. (Table II-59)

4. Satin Projections[35]

This set of projections is based on the estimated population size for mid-1975. The estimated birth and death rates follow the assumptions that:

a. The reduction in birth rates occurring between 1960-1973 due to political, economic and war conditions will reverse and the CBR will increase to a high level of 41.5 per thousand before a long trend of decline.

b. The death rate will continue to decline until it reaches 10 per thousand in the year 1995 and remain at this level until the year 2000.

The attached table is a copy of this estimate of growth between 1975-2000. On the basis of this estimate, the population in mid-1985 will be 48,138,000 and in mid-year 2000 will be 70,165,000. (Table II-60)

5. Watkins Projections, 1976

This set of projections is based on three alternative assumptions:

a. The annual growth rate of 2.23 percent for 1975-1976 will continue until the year 2000;

b. The annual average decrease in growth rates occurring between 1966-1976 of 1.53 percent will continue until the year 2000 (beginning with 1975-1976 growth rate);

c. The annual decrease in growth rates based on the average decrease over the period 1966-1976.

The projected populations for 1985 by the three different assumptions are respectively: 46,367,000; 45,463,000; and 45,884,000.

At the year 2000, the projected populations will be: 64,002,000; 58,315,000; and 59,992,000, respectively. (Table II-61)

6. World Bank Projections

This projection was undertaken by the World Bank in 1978 based on the preliminary findings of the 1976 Census data. It is based on the assumptions that:

a. The recent increase in birth rates is a temporary phenomenon and the downward trend experienced in 1967-1973 was the beginning of a long term trend.

TABLE II-59
SECOND SET OF PROJECTIONS BY CAPMAS[1]
1980

Assumptions[2]	Total Population at Mid-Year	Birth Rates	Death Rates	Growth Rates
1976	37,883	37.7	11.8	2.59
1980	41,767	33.6	11.2	2.4
1985	46,295	28.6	10.2	1.84
1990	50,316	23.6	9.2	1.44
1995	53,377	19.0	9.0	1.0
2000	56,990	19.0	9.0	1.0
Assumptions[3]				
1976	37,883	37.7	11.8	2.59
1980	41,968	37.7	11.2	2.65
1985	47,832	37.7	10.2	2.75
1990	54,784	37.7	9.2	2.85
1995	63,043	37.7	9.0	2.87
2000	72,625	37.7	9.0	2.87

1/ This set of projections also indicates the differences in projected size of the population if the objectives of the National Population Plan are achieved (annual reduction of birth rates by 1/1,000) and when no change occurs in the birth rates.

2/ Annual reduction of birth rates by 1/1,000 starting 1976 until 2000 and reduction in death rates.

3/ No change in birth rate with reduction in death rates.

SOURCE: CAPMAS.

TABLE II-60
ESTIMATE OF EGYPT'S POPULATION GROWTH[1]
1975 - 2000

Year	Vital Rates /000 CBR[2]	CDR[2]	RNI[2]	Mid-Year Population	Births	Deaths	Natural Increase
1975	37.8	14.0	23.8	37,000	1,399	518	881
1976	39.0	13.8	25.7	37,881	1,496	522	974
1977	41.3	13.6	27.7	38,855	1,605	528	1,077
1978	41.0	13.4	27.6	39,931	1,637	535	1,102
1979	40.6	13.2	27.4	41,033	1,666	542	1,124
1980	40.2	13.0	27.2	42,157	1,695	548	1,147
1981	39.9	12.8	27.1	43,304	1,728	554	1,174
1982	39.5	12.6	26.9	44,478	1,757	560	1,197
1983	39.1	12.4	26.7	45,675	1,786	566	1,220
1984	38.7	12.2	26.5	46,895	1,815	572	1,243
1985	38.4	12.0	26.4	48,135	1,848	578	1,270
1986	38.0	11.8	26.2	49,408	1,877	583	1,294
1987	37.6	11.6	26.0	50,702	1,906	588	1,318
1988	37.2	11.4	25.8	52,020	1,935	593	1,342
1989	36.9	11.2	25.7	53,362	1,969	597	1,372
1990	36.5	11.0	25.5	54,734	2,026	606	1,420
1991	36.1	10.8	25.3	56,130	2,054	610	1,444
1992	35.7	10.6	25.1	57,550	2,088	614	1,474
1993	35.4	10.4	25.0	58,994	2,116	617	1,499
1994	35.0	10.2	24.8	60,468	2,169	620	1,549
1995	35.0	10.0	25.0	61,967	2,229	635	1,594
1996	35.1	10.0	25.1	63,516	2,292	651	1,641
1997	35.2	10.0	25.2	65,110	2,350	668	1,682
1998	35.2	10.0	25.2	66,751	2,416	684	1,732
1999	35.3	10.0	25.3	68,433	--	--	--
2000	35.4	10.0	25.4	70,165	--	--	--
					47,857	14,691	33,166

1/ This set of projections is based on the estimated population size for mid-1975. The estimated birth and death rates follow the assumptions that:
a. The reduction in birth raes occuring between 1960-1973 due to political, economic and war conditions will reverse and the CBR will increase to a high level of 41.5 per thousand before the long trend of decline.
b. The death rate will continue to decline until it reaches 10 per thousand in the year 1995 and remain at this level until the year 2000.
On the basis of this estimate, the population in mid-1985 will be 48,138 thousand and in mid-year 2000, will be 70,165.

2/ CBR = Crude Birth Rate; CDR = Crude Death Rate; RNI - Rate of Natural Increase.

SOURCE: Estimates are by R. L. Satin, quoted in the Suez Canal Regional Plan, 1976.

b. Death rates will continue to decline steadily. It should be pointed out, however, that this projected decline in birth rates can only be achieved by a substantial change in the Egyptian society involving a rise in the level of female education, greater proportions of females in modern sector jobs, reduction in infant mortality and increased mechanization of agriculture to limit opportunities for child labor. All this has to be concommitant with an effective family planning program.

The population in 1985 is estimated to be 46,472,000 of which the urban population will be 25,485,000. In the year 2000 the population is estimated to be 59,374,000 and the urban population is 38,171,000. (Table II-62)

TABLE II-61
PROJECTION OF POSSIBLE POPULATION GROWTH RATES AND POPULATION, IN THOUSANDS, FOR EGYPT, 1980 - 2000 [1]

	(1) At 1875/1976 Rate	(2) Population	(3) Growth Rate By Periods	(4) Population	(5) Growth Rate By Periods
1976	38,800	38,000	--	38,000	--
1980	41,514	41,290	2.0976%	11,466	2.2066%
1985	46,367	45,465	1.9443	45,884	2.0453
1990	51,787	49,710	1.8022	50,401	1.8958
1995	57,841	54,003	1.6705	54,988	1.7572
2000	64,002	58,315	1.5484	59,992	1.6287
Over, Rate 1976/2000	2.235%	1.8005%	1.8005%	1.9208%	1.9208%

1/ This set of projections is based on three alternative assumptions:
a. The annual growth rate of 1975/1976, 2.23%, will persist until the year 2000. (Col. (1)).
b. The annual average decrease in growth rates occuring between 1966 - 1976 of 1.53% will continue until the year 200 based on 1975/1976 rates. (Cols. (2) and (3)).
c. The same annual decrease in growth rates based on the average 1966/1976 rates. (Cols. (4) and (5)).

The projected populations for 1985, by the three different assumptions are, respectively: 46,637 thousand, 45,463 thousand and 45,884 thousand.

At the year 200 the projected populations will be: 64,002 thousand, 58,315 thousand and 59,992 thousand, respectively.

SOURCE: Watkins, R.H., Population Projection for Egypt, 1980-2000, 1976.

TABLE II-62
POPULATION PROJECTIONS AND INDIRECT GROWTH RATES TO THE YEAR 2000 [1]

Category	1975	1980	1985	1990	1995	2000
Total Populations (000)	37,772	42,065	46,472	50,908	55,521	59,374
Aged 6-11	5,883	6,348	6,644	6,877	7,085	7,169
Aged 12-64	23,843	27,229	30,852	34,575	38,302	42,000
Aged 65+	1,282	1,516	1,793	2,123	2,512	2,981
Population Growth Rates (%)						
Aged 6-11	--	1.5	0.9	0.7	0.6	0.2
Aged 12-64	--	2.7	2.5	2.3	2.0	1.8
Aged 65+	--	3.4	3.4	3.4	3.4	3.4
Fertility Rate	--	4.6	4.1	3.6	3.2	2.9
Net Reproduction Rate	--	1.7	1.6	1.4	1.3	1.2
Birth Rate (per 000)	--	34.2	31.4	28.7	26.0	23.3
Death Rate (per 000)	--	12.7	11.4	10.4	9.6	8.9
Natrual Rate Increase (per 000)	--	21.5	20.0	18.3	16.4	14.4

1/ This 1978 projection is by the World Bank after the preliminary findings of the 1976 census data. It is based on the assumptions that:
a. The recent increase in birth rates is temporary phenomenon and the downward trend experienced in 1967-1973 was a start of a long term trend.
b. Death rates will continue to decline steadily. However, it is pointed out that this projected decline in birth rates can only be achieved by a substantial change in the Egyptian society involving a rise in the level of female education, greater proportions of females in modern sector jobs, reduction in infant mortality and increased mechanization of agriculture to limit opportunities for child labor. All this has to be concomitant to an effective family planning program.

The population in 1985 is estimated to be 46,472 thousand of which the urban population will be 25,485 thousand. In the year 2000 the population is estimated to be 59,374 thousand and the urban population is 38,171 thousand.

SOURCE: World Bank Projections.

7. United Nations Projections, 1978[36]

This set is composed of three alternative projections. The medium projection is thought by the UN to be most realistic as it is based on the past observed demographic trends, expected social and economic progress, on-going government policies, and the prevailing public attitudes toward population issues. The other two high and low projection alternatives represent a plausible range of variation that is not exhaustive. (Table II-63)

8. Summary of the Alternative Projections

The estimated projection of the population size by the year 2000 ranges between 57 million and 72.6 million. The lowest estimate is based on the proposed objectives of National Population Policy in the early 1970's which were not achieved. The highest estimate is based on the assumption of constant birth rates and slightly declining death rates. All other projections assume decline in both death and birth rates until the year 2000 with variations in rates of decline. (Table II-64)

Since 1973, there has been an increase in the annual natural growth rates caused by a decline in CDR and an increase in CBR. The preliminary estimated growth rate for 1979 is 2.99 percent, the highest rate since 1952. On April 1, 1980, the population size was estimated by CAPMAS to be 42 million.

From the review of the growth rates and their components that Egypt experienced in the last 27 years and projected rates by different and alternative assumptions, it seems that the most plausible projections range between 64,672,000 and 70,331,000 in the year 2000. (Table II-65)

F. NUPS Year 2000 Population and Labor Force Projections

1. Projections

The projections of total population (shown in Figure II-1) are derived from alternative assumptions regarding the extent of decline in the population growth rate. Future changes in

the birth rate are the major source of difference between the projections. Associated with each projection of total population there is a projection of urban population, also shown in Figure II-2. These projections are more tentative than those of total population since rural/urban migration as well as natural increase affect the estimate.

High population density, increasing mechanization of farm production process, restrictions on construction on arable land, and the difficulty of expanding cultivable land are likely to limit the capacity of rural areas to absorb population. It is likely that rural/urban migration rates will increase even while the rate of natural increase of the total population is decreasing. The degree of urbanization associated with the projections ranges from 55 percent (low population projection) to 59 percent (high population projection).

2. Methodology

The methodology used to derive the estimates of total population were a comparative analysis of the 7 sets of projections of population growth which contained a total of 14 projections. The projected population size by the year 2000 ranges between 57 million and 72.6 million in the projections reviewed.

Declining fertility is assumed in 13 of the 14 projections; variation in the estimated year 2000 population total stems from differences in the rates of fertility decline. Based on a review of historical population trends in Egypt and a judgment of their likely future movements, NUPS concluded that most plausible projections for the year 2000 range between 64.7 million and 70.3 million.

TABLE II-63
UNITED NATIONS PROJECTIONS 1

	Population Size (000)	Medium CBR	Medium CDR	Annual Growth Rate	High Population Size (000)	High Annual Growth Rate	Low Population Size (000)	Low Annual Growth Rate
1975	36,916	38.6	12.8	2.58	36,916	2.64	36,916	2.52
1980	41,995	35.2	11.4	2.38	42,120	2.51	41,870	2.23
1985	47,303	32.1	10.1	2.20	47,745	2.39	46,802	2.02
1990	52,806	29.7	9.1	2.06	53,811	2.29	51,777	1.85
1995	58,540	28.3	8.4	1.99	60,347	2.24	56,798	1.73
2000	64,672				67,493		61,943	

1/ This set is composed of three alternative projections. The medium projection is thought by the UN to be most realistic as it is based on the past observed demographic trends, expected social and economic progress, on-going policies, and the prevailing public attitudes toward population issues. The other two, high and low, projection alternatives represent a plausible range of variation that is not exhaustive.

SOURCE: United Nations, World Population Trends & Prospects by Country, 1950 - 2000: Summary Report of 1978 Assessment. New York: 1979.

TABLE II-64
PROJECTED POPULATION SIZE IN THE YEARS 1985 and 2000 WITH ALTERNATIVE ASSUMPTIONS 1

Sets of Projections	Alternative Assumptions	1985 (000)	2000 (000)
1. RAPID-USAID	A	47,887	59,608
	B	48,379	65,267
	C	48,555	70,874
2. CAPMAS	A	46,295	56,990
	B	47,832	72,625
3. CAPMAS 72	High	48,041	70,331
	Med.	47,083	65,948
	Low	45,370	60,532
4. SATIN		48,138	70,165
5. WATKINS	1	46,637	64,002
	2	45,463	58,315
	3	45,884	59,992
6. WORLD BANK		46,472	59,374
7. UN	Med.	47,303	64,672
	High	47,745	67,493
	Low	46,802	61,943

1/ Summary of the Alternative Projections: The estimated projection of the population size by the year 2000 ranges between 57 million and 72.6 million. The lowest estimate is based on the proposed objectives of National Population Policy in the early seventies, which were not achieved. The highest estimate is based on the assumption of constant birth rates and slightly declining death rates. All other projections assume decline in both death and birth rates to the year 2000 with variations in rates of decline.

SOURCE: NUPS.

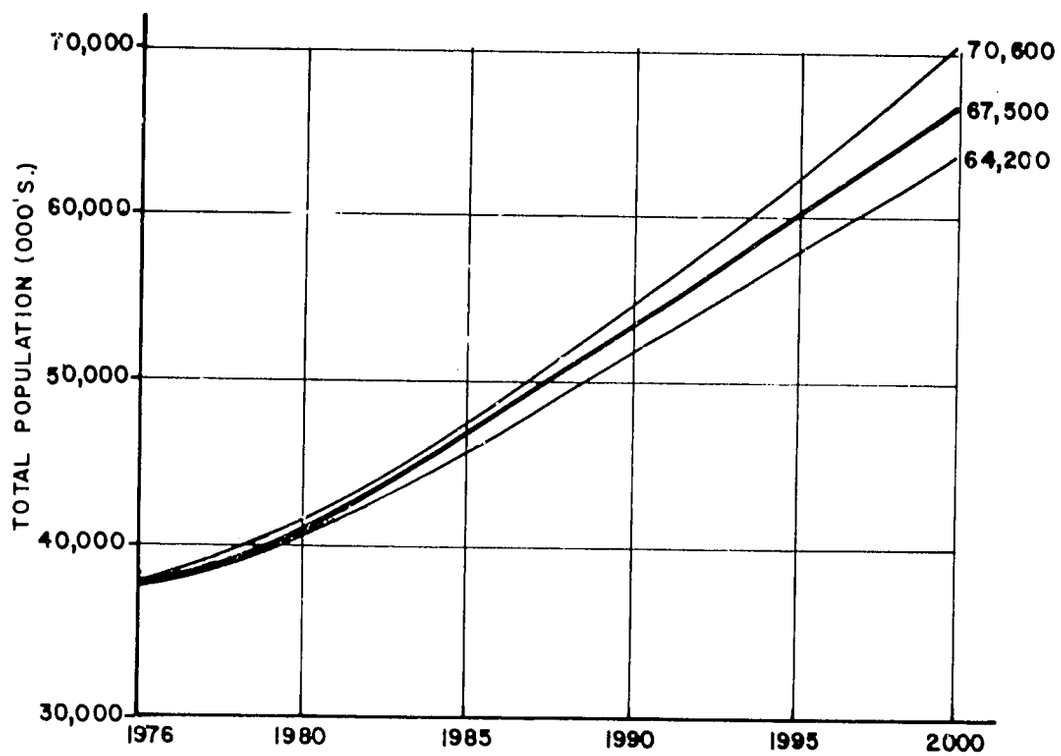
TABLE II-65
DEMOGRAPHIC PROJECTIONS, MEDIUM VARIANT (000)
(in Millions)

Year	Total Population	Urban Population	Labor Force
1980	42.1	18.7	12.6
1985	47.7	22.5	14.3
1990	53.8	26.6	16.3
1995	60.3	31.4	18.6
2000	67.5	37.0	21.2

SOURCE: NUPS.

FIGURE II-1

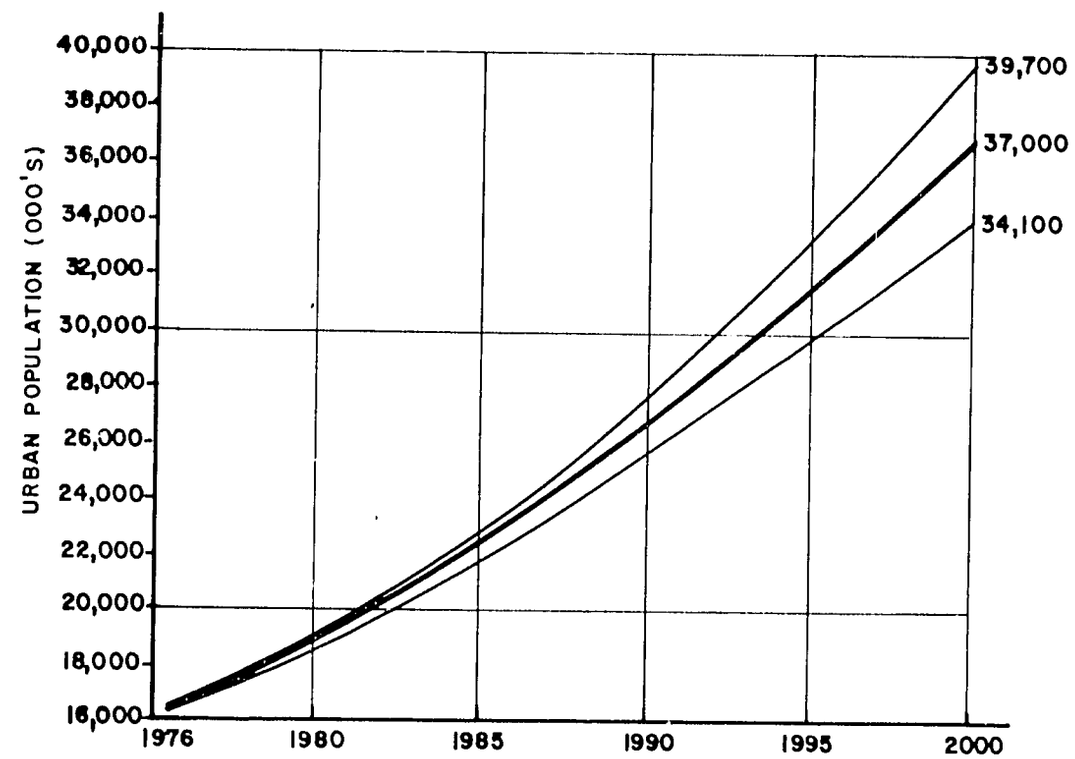
TOTAL POPULATION 1976-2000



SOURCE: NUPS PROJECTIONS

FIGURE II-2

URBAN POPULATION 1976-2000



SOURCE: NUPS PROJECTIONS

The key assumption underlying the urban population estimates is that the rural growth rate (after accounting for migration) will fall at an increasing rate between 1980 and 2000. The rural growth rates used in the projection are:[37]

1976-1980	1.50
1980-1985	1.45
1985-1990	1.35
1990-1995	1.19
1995-2000	0.97

Urban population is calculated as the difference between total resident population and rural population. The estimates of non-resident population are from CAPMAS. The urban annual compound growth rates corresponding to these rural rates are:

	Low (%)	Medium (%)	High (%)
1980-1985	3.45	3.74	3.96
1985-1990	3.12	3.51	3.95
1990-1995	2.95	3.34	3.79
1995-2000	2.89	3.31	3.67

Labor force estimates are derived from the population projections using labor force participation rates calculated by Wahba.[38]

3. Estimation of the Egyptian Labor Force

In order to calculate the labor force, the population must be divided into age/sex cohorts. Of the three population projections presented in the Status Report, age/sex cohorts were available only for the high projection. The mortality table implicit in this projection (from CAPMAS, "Population Trends in A.R.E. Up to 2000", Population Research and Studies, No. 4, pp. 51-52, 1972), was used to construct an age/sex cohort distribution for the low and the medium projection. (Figure II-3) All three projections are identical for the 25+ population. Variations are caused by differences in the birth rates which affect the 0-24 age groups. (Tables II-66 - 68)

TABLE II-66
POPULATION, LOW PROJECTION
(In Thousands)

	1980		1985		1990		1995		2000	
	M	F	M	F	M	F	M	F	M	F
0-4	3,231	3,049	3,561	3,358	3,718	3,504	3,953	3,725	4,124	3,888
5-9	2,684	2,488	3,057	2,829	3,397	3,140	3,569	3,301	3,819	3,531
10-14	2,403	2,237	2,668	2,476	3,042	2,818	3,383	3,131	3,555	3,291
15-19	2,213	2,074	2,388	2,226	2,654	2,466	3,030	2,807	3,369	3,122
20-24	2,173	2,019	2,196	2,063	2,373	2,216	2,639	2,455	3,015	2,799
25-29	1,742	1,607	2,152	2,006	2,179	2,052	2,356	2,205	2,622	2,445
30-34	1,280	1,222	1,722	1,595	2,130	1,933	2,159	2,040	2,337	2,194
35-39	989	1,033	1,261	1,211	1,699	1,583	2,105	1,979	2,136	2,027
40-44	896	1,013	967	1,021	1,236	1,198	1,669	1,568	2,071	1,962
45-49	857	976	866	998	937	1,068	1,201	1,184	1,625	1,550
50-54	789	850	814	955	826	977	897	988	1,151	1,163
55-59	646	692	730	820	756	922	770	947	839	959
60-64	489	550	575	652	653	775	679	875	695	899
65-69	350	420	410	497	485	591	554	705	579	798
70-74	225	290	266	350	314	416	373	496	429	593
75+	202	306	240	373	289	459	344	553	416	669
TOTAL	21,169	20,826	23,873	23,430	26,688	26,118	29,681	28,859	32,762	31,890

SOURCE: NUPS

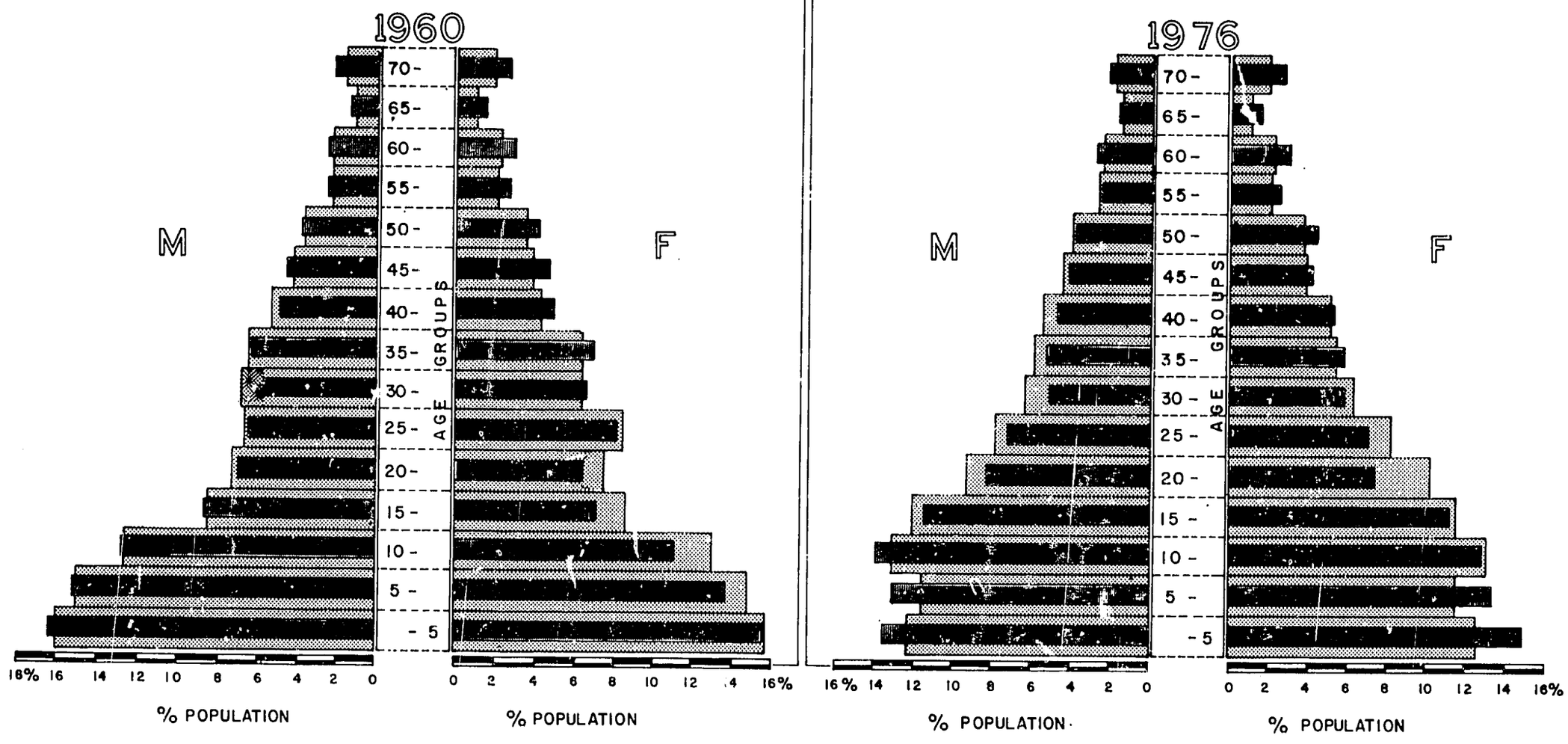
TABLE II-67
POPULATION, MID PROJECTION
(In Thousands)

	1980		1985		1990		1995		2000	
	M	F	M	F	M	F	M	F	M	F
0- 4	3,296	3,109	3,728	3,516	4,018	3,787	4,381	4,129	4,666	4,400
5- 9	2,684	2,488	3,118	2,885	3,557	3,287	3,857	3,567	4,232	3,914
10-14	2,403	2,237	2,668	2,476	3,102	2,873	3,543	3,277	3,842	3,556
15-19	2,213	2,074	2,388	2,226	2,654	2,466	3,090	2,862	3,528	3,267
20-24	2,173	2,019	2,196	2,163	2,373	2,216	2,639	2,455	3,075	2,854
25-29	1,742	1,607	2,152	2,006	2,179	2,052	2,356	2,205	2,622	2,445
30-34	1,280	1,222	1,722	1,595	2,130	1,993	2,159	2,040	2,337	2,194
35-39	989	1,033	1,261	1,211	1,699	1,583	2,105	1,979	2,136	2,027
40-44	896	1,013	967	1,021	1,236	1,198	1,669	1,568	2,071	1,962
45-49	857	976	866	998	937	1,008	1,201	1,184	1,625	1,550
50-54	789	850	814	955	826	977	897	988	1,151	1,163
55-59	646	692	730	820	756	922	770	947	839	959
60-64	489	550	575	652	653	775	679	875	695	899
65-69	350	420	410	497	485	591	554	705	579	798
70-74	225	290	266	350	314	416	373	496	429	593
75+	202	306	240	373	289	459	344	553	416	669
TOTAL	21,234	20,886	24,101	23,644	27,208	26,603	30,617	29,730	34,243	33,250

SOURCE: NUPS

FIGURE II-3

AGE-SEX STRUCTURE OF EGYPT.



URBAN POPULATION

RURAL POPULATION

M MALE

F FEMALE

SOURCE: POPULATION CENSUS 1960 - TABLE 2 - PART 2.

SOURCE: POPULATION CENSUS 1976 - TABLE 1 - PAGE 72.

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TABLE II-68
POPULATION, HIGH PROJECTION
(In Thousands)

	1980		1985		1990		1995		2000	
	M	F	M	F	M	F	M	F	M	F
0- 4	3,312	3,125	3,865	3,645	4,358	4,107	4,802	4,526	5,259	4,959
5- 9	2,684	2,488	3,134	2,899	3,687	3,409	4,185	3,870	4,637	4,291
10-14	2,403	2,237	2,668	2,476	3,118	2,888	3,671	3,398	4,169	3,859
15-19	2,213	2,074	2,388	2,226	2,654	2,466	3,104	2,877	3,656	3,387
20-24	2,173	2,019	2,196	2,063	2,373	2,216	2,639	2,455	3,088	2,867
25-29	1,742	1,607	2,152	2,006	2,179	2,052	2,356	2,205	2,622	2,445
30-34	1,280	1,222	1,722	1,595	2,130	1,993	2,159	2,040	2,337	2,194
35-39	989	1,033	1,261	1,211	1,699	1,583	2,105	1,979	2,136	2,027
40-44	896	1,013	967	1,021	1,236	1,198	1,669	1,568	2,071	1,962
45-49	857	976	866	998	937	1,008	1,201	1,184	1,625	1,550
50-54	789	850	814	955	826	977	897	988	1,151	1,163
55-59	646	692	730	820	756	922	770	947	839	959
60-64	489	550	575	652	653	775	679	875	695	899
65-69	350	420	410	497	485	591	554	705	579	798
70-74	225	290	266	350	314	416	373	496	429	593
75+	202	306	240	373	289	459	344	553	416	669
TOTAL	21,250	20,902	24,254	23,787	27,694	27,060	31,508	30,666	35,709	34,622

SOURCE: CAPMAS, "Population Trends in A.R.E. Up to 2000," Population Researches & Studies, No. 4, 1972, pp. 51-52.

The male age-specific labor force participation rates (LFPR) are from the previously cited Wahba study. Since the population age cohorts differ from the cohorts used by Wahba for males less than 15, the population projection 5-9 cohort was assigned the LFPR of the 6-11 cohort and the population projection 10-14 cohort was assigned the LFPR of the 12-14 cohort. For the other cohorts the population projections and Wahba are comparable.

Using the Wahba LFPR (Table II-69), the male 25+ labor force was calculated (Table II-70) and included in each projection. The 5-24 labor force was calculated for each of the population projections (Tables II-71 - 73) and added to Table II-70 to complete the male labor force. Figure II-4 graphically summarizes the projected labor force for the period 1980-2000.

TABLE II-69
PROJECTED LABOR FORCE PARTICIPATION RATES
EGYPTIAN MALES (1980 - 2000)

Age Group	1980	1985	1990	1995	2000
6 - 11	6.9	6.2	5.6	5.1	4.6
12 - 14	12.0	11.5	10.5	10.2	9.4
15 - 19	65.6	63.0	60.6	58.9	57.1
20 - 24	78.0	75.9	75.0	74.1	73.6
25 - 29	89.6	89.6	89.6	89.6	89.6
30 - 34	97.4	97.4	97.4	97.4	97.4
35 - 39	98.6	98.6	98.6	98.6	98.6
40 - 44	98.4	98.4	98.4	98.4	98.4
45 - 49	98.3	98.3	98.3	98.3	98.3
50 - 54	98.2	98.2	98.2	98.2	98.2
55 - 59	94.5	94.3	94.2	94.0	93.3
60 - 64	79.7	78.7	77.8	77.0	75.2
65+	56.2	54.2	52.1	50.1	47.4
TOTAL	53.4	52.9	52.7	52.9	53.5

SOURCE: WAHBA, p. 18.

TABLE II-70
MALE LABOR FORCE, 25 - 65+
ALL PROJECTIONS
(In Thousands)

Age	1980	1985	1990	1995	2000
25-29	1,561	1,928	1,952	2,111	2,349
30-34	1,247	1,677	2,075	2,103	2,276
35-39	975	1,243	1,675	2,075	2,106
40-44	882	952	1,216	1,642	2,038
45-49	842	851	921	1,181	1,597
50-54	775	799	811	881	1,130
55-59	610	688	712	724	783
60-64	390	453	508	523	523
65+	437	496	567	637	675
TOTAL	7,719	9,087	10,437	11,878	13,477

SOURCE: NUPS

TABLE II-71
MALE LABOR FORCE, 5 - 24
LOW PROJECTION
(In Thousands)

	1980	1985	1990	1995	2000
- 9	186	190	190	182	176
10-14	288	307	319	345	334
15-19	1,452	1,504	1,608	1,785	1,924
20-24	1,694	1,667	1,780	1,956	2,219
Sub-Total	3,620	3,668	3,897	4,268	4,653
25+	7,719	9,087	10,437	11,878	13,477
	11,339	12,755	14,334	16,146	18,130
	.536	.534	.537	.544	.553
	.060	.066	.073	.050	.088
FEMALE LABOR FORCE					
	1,250	1,546	1,907	2,309	2,806
TOTAL LABOR FORCE					
	12,589	14,301	16,241	18,455	20,936

SOURCE: NUPS

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TABLE II-72
MALE LABOR FORCE, 5 - 24
MID PROJECTION
(In Thousands)

	1980	1985	1990	1995	2000
- 9	185	193	199	197	195
10-14	288	307	326	361	361
15-19	1,452	1,504	1,608	1,820	2,014
20-24	1,695	1,667	1,780	1,955	2,263
Sub-Total	3,620	3,671	3,913	4,333	4,833
25+	7,719	9,087	10,437	11,878	13,477
	11,339	12,758	14,350	16,211	18,310
	.534	.529	.527	.529	.534
	.060	.066	.073	.080	.088
FEMALE LABOR FORCE					
	1,253	1,561	1,942	2,378	2,926
TOTAL LABOR FORCE					
	12,592	14,319	16,292	18,589	21,236

SOURCE: NUPS

TABLE II-73
MALE LABOR FORCE, 5 - 24
HIGH PROJECTION
(In Thousands)

	1980	1985	1990	1995	2000
5- 9	185	194	206	213	213
10-14	288	307	327	374	392
15-19	1,452	1,504	1,608	1,828	2,088
20-24	1,695	1,667	1,780	1,956	2,273
Sub-Total	3,620	3,672	3,921	4,371	4,966
25+	7,719	9,087	10,437	11,878	13,477
	11,339	12,759	14,358	16,249	18,443
	.534	.526	.518	.516	.516
	.060	.066	.073	.080	.088
FEMALE LABOR FORCE					
	1,254	1,570	1,975	2,453	3,047
TOTAL LABOR FORCE					
	12,593	14,329	16,333	18,702	21,490

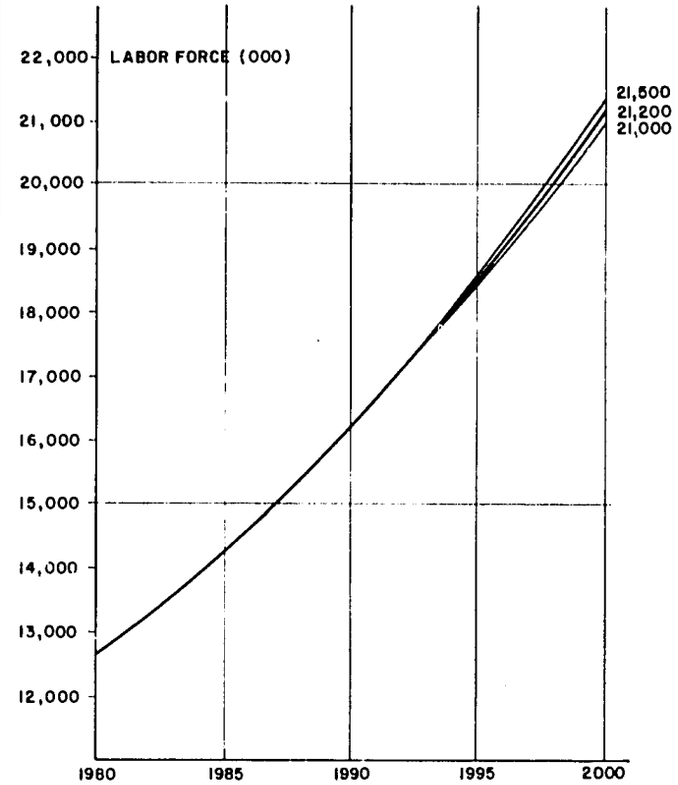
SOURCE: NUPS

Female LFPR in the Wahba Report are given for educational levels and not age. These are:

Education Level	LFPR
Illiterate	.0370
Read and Write	.0316
Intermediate Education	.288
University Education	.818

Using historical trends, Wahba estimated the distribution of the 10+ female population among the four levels. (Table II-74) This relative distribution was applied to the three population projections, the product of which was assigned the LFPR shown above. This process generated the female labor force shown in Tables II-71 - 73.

FIGURE II-4
LABOR FORCE 1980-2000



4. The Trend Settlement Pattern

While there is no predictive value to a trend projection of the present urban settlement system, it helps provide a future reference point for the discussion of other suggested alternatives. A discussion of some of the implications of a continuation of past trends will provide a comparative context for interpreting the differences. The Trend Pattern is shown in Table II-75.

The trend projections for urban population by zone and size class of urban area are based upon the 1976 population of each urban settlement, its annual growth rate between 1960 and 1976, and the national projection of urban population. These latter projections were used as control totals.

The procedure used was, first, to apply the 1960-1976 growth rate to each settlement's reported 1976 population to calculate an estimate of that settlement's 1985 population. These estimates were then summed over all settlements. The resulting figure was then compared to the national estimate of urban population for 1985. The ratio of these two numbers was then multiplied by each of the original settlement population estimates to obtain an "adjusted" 1985 settlement population. These "adjusted" settlement populations were then summed by zone to

TABLE II-74
PERCENTAGE DISTRIBUTION FOR FEMALES BY EDUCATIONAL LEVEL, 1960, 1976, AND THE PROJECTED PERCENTAGES FOR 1980 - 2000

Educational Level	Year						
	1960	1976	1980	1985	1990	1995	2000
Illiterate	84.0	71.0	67.6	63.6	59.5	55.4	51.3
Read & Write	12.4	16.2	17.3	18.4	19.6	20.8	22.0
Intermediate	3.4	11.6	13.7	16.3	18.9	21.5	24.1
University Education	0.2	1.2	1.4	1.7	2.0	2.3	2.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Censuses of 1960 and 1976. Proportions after 1976 are computed assuming continuation of the trend between 1960 and 1976.

produce the figures presented in Table II-75. The procedure for making the year 2000 projection was the same; but the "adjusted" 1985 estimates were used as the base year populations rather than the 1976 census figures.

One of the more striking features of the Trend Pattern is the large absolute increase in the population of Cairo — almost 10 million people. This many people cannot be accommodated within the current boundaries of Cairo, Giza and Shoubra El Kheima without a substantial increase in the population density. The overall gross density in 1976 for these areas of slightly over 20,000 per square kilometer would have to rise to over 47,000 per square kilometer to accommodate the expansion in existing urban boundaries.

The completion and full occupancy of the currently planned satellite cities and 10th of Ramadan could provide for about 1.60 million of this increase. An increase of the size suggested by trend growth may require additional infill, fringe development or other new cities and satellites. The continuation of recent trends indicates that Shoubra El Kheima would be expected to expand considerably. While its current density (13,300 per square kilometer) could be increased, it is likely that a major increase in population would spill over into adjacent arable land.

The Trend Pattern reflects the relatively low population growth of Alexandria in the 1960-1976 period — an absolute increase of a little under 2 million by the year 2000 and a decline in the zone's share of urban population is indicated. The reasons for the relatively slow growth in the 1960-1976 period are not clear. Post 1976 economic expansion as well as our estimates of economic growth potential and absorption capacity, however, make Alexandria a strong candidate for accelerated growth.

A third prominent feature of the Trend Pattern is the continued expansion of urban population in the cities of the Delta Zone. Some of the major cities in the Delta have considerable absorption capacity within their existing boundaries, as do many of the cities under 50,000;

TABLE II-75
TREND SETTLEMENT PATTERN, BY ZONE
(URBAN POPULATION, IN THOUSANDS)

ZONE	1976		1985		1976-1985		2000		1985-2000	
	Population	Percent	Population	Percent	% Increase	Annual Growth Rate %	Population	Percent	% Increase	Annual Growth Rate %
Cairo										
Over 50,000	6,711	41.7	9,505	42.3	41.6	3.9	15,994	43.1	68.3	3.5
Under 50,000	132	.8	202	1.0	53.0	4.8	337	1.0	91.6	4.4
Total	6,843	42.5	9,707	43.3	41.9	4.0	16,331	44.1	68.2	3.5
Alex/West										
Over 50,000	2,319	14.4	3,042	13.5	31.2	3.1	4,495	12.1	47.8	2.6
Under 50,000	51	.3	67	.3	31.4	3.1	99	.3	47.8	2.6
Total	2,370	14.7	3,109	13.8	31.2	3.1	4,594	12.4	47.8	2.6
Delta										
Over 50,000	2,348	14.5	3,347	14.8	42.5	4.0	5,672	15.3	69.5	3.6
Under 50,000	1,320	8.3	1,676	7.5	27.0	2.7	2,342	6.4	39.7	2.3
Total	3,668	22.8	5,023	22.3	36.9	3.6	8,014	21.7	59.5	3.2
Nue										
Over 50,000	505	3.1	668	3.0	32.3	3.2	987	2.7	47.8	2.6
Under 50,000	478	3.0	605	2.7	26.6	2.7	843	2.2	39.3	2.2
Total	983	6.1	1,273	5.7	29.5	2.9	1,830	4.9	43.8	2.5
Sue										
Over 50,000	799	5.0	1,221	5.4	52.8	4.8	2,307	6.2	88.9	4.3
Under 50,000	689	4.2	901	4.1	30.7	3.0	1,322	3.6	46.7	2.6
Total	1,488	9.2	2,122	9.5	42.6	4.0	3,629	9.8	71.0	3.6
Canal										
Over 50,000	630	3.9	1,041	4.6	65.2	3.7	2,200	6.0	111.3	5.1
Outlying Zones										
Red Sea	48	.3	77	.3	60.4	5.4	163	.4	111.7	5.1
New Valley	48	.3	86	.4	79.2	6.7	210	.6	144.2	6.1
Sinai	10	.1	14	.1	40.0	3.8	24	.1	71.4	3.7
Total	106	.7	177	.8	67.0	5.9	397	1.1	124.3	5.5
Grand Total	16,088		22,452		39.6	3.8	36,995		64.8	3.4

SOURCE: NUPS Calculations, based upon 1960-76 Settlement Growth Rates from 1960 and 1976 CAPMAS Censuses.

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nevertheless, growth of the magnitude suggested by past trends will be likely to spill over into arable land.

The Trend Pattern, therefore, illustrates the importance of improved land use control to protect arable land in the Delta and the necessity for alternative urban locations for Delta population if arable land is to be protected.

North Upper Egypt would be expected to have an absolute increase but a relative decline in its share of the urban population. South Upper Egypt is projected to increase its share of total population. The absolute increase would be mostly in 50,000 plus cities.

FOOTNOTES
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III. NATIONAL MACRO ECONOMIC PROFILE

This section presents a selection of time series data, a summary of Egypt's 1980-1984 Development Strategy, and projections to the year 2000 prepared by NUPS and others.

A. Historical Data Series

The data which appears in this section are the latest available, (See Tables III-1 through 16), as of mid-year 1981. Periodically, as a result of surveys and changes in benchmark data, the Government issues revised figures. These revisions generally affect not only the most recent year but also prior years. Improvements in data collection and analysis can result in significant changes in the published data so users of these data are urged to verify their accuracy with the relevant government agency.

The National Accounts are prepared annually by the Ministry of Planning; the International Accounts are prepared by the Central Bank of Egypt and the Fiscal Accounts are prepared by the Ministry of Finance. All the accounts are published by the Central Bank. Employment data are published by the Central Agency for Public Mobilization and Statistics (CAPMAS) in the annual issues of the Statistical Yearbook.

These data also appear in the annual economic reports prepared by the International Monetary Fund and the occasional country study reports of the World Bank (IBRD).

The most recent reports of these agencies, and the sources of much of the data in this section, are: IBRD, Arab Republic of Egypt--Domestic Resource Mobilization and Growth Prospects for the 1980s, Report No. 3123 EGT, December 1980; and IMF, Arab Republic of Egypt -- Recent Economic Developments, SM/81/13, January 1981.

TABLE III-1

GROSS NATIONAL PRODUCT AT CURRENT PRICES BY SECTOR, 1975 - 1979

(In Millions of Egyptian Pounds)

	1975	1976	1977	1978	1979
Commodity sectors	2,816.4	3,338.0	4,065.6	4,837.9	6,827.0
Agriculture	1,468.1	1,744.0	2,037.6	2,285.8	2,687.6
Industry and mining	887.6	993.1	1,119.6	1,318.9	1,478.4
Petroleum	149.0	246.9	467.8	626.1	1,907.7
Electricity	69.2	75.0	83.1	98.0	102.3
Construction	242.5	279.0	357.5	509.1	651.0
Distribution sectors	1,035.7	1,359.9	1,679.0	2,232.8	2,848.7
Transportation, communication and storage	219.6	259.7	321.6	394.9	471.8
Suez Canal	38.8	140.9	169.2	293.9	423.1
Trade and finance	777.3	959.3	1,188.2	1,544.0	1,953.8
Service sectors	1,209.2	1,466.1	1,655.3	1,937.4	2,260.8
Housing	208.7	222.1	243.5	261.8	287.0
Public utilities	18.6	20.5	23.1	26.6	31.4
Other services	981.9	1,223.5	1,388.7	1,649.0	1,942.4
GDP at factor cost	5,061.3	6,164.2	7,399.9	9,008.1	11,936.5
Net indirect taxes	185.3	540.4	810.0	774.3	538.1
GDP at market prices	5,246.6	6,704.6	8,209.9	9,782.4	12,474.6
Net factor income[1/]	-16.1	133.0	433.2	982.7	761.2
GNP at market prices	5,230.5	6,837.6	8,643.1	10,765.1	13,235.8

1/ Includes private remittances from Egyptians abroad.

SOURCE: Ministry of Planning and IMF.

TABLE III-2

EXPENDITURE ON GROSS DOMESTIC PRODUCT AT CURRENT PRICES, 1975-1979

(In Millions of Egyptian Pounds)

	1975	1976	1977	1978	1979
Consumption	4,445.0	5,536.5	6,613.7	8,119.1	10,681.5
Private	3,100.9	3,965.1	4,916.9	6,278.5	8,622.8
Government	1,344.1	1,571.4	1,696.8	1,840.6	2,058.7
Gross investment	1,723.8	1,888.9	2,398.8	3,033.8	3,795.6
Gross fixed investment	1,265.3	1,450.1	1,838.3	2,617.8	3,345.6
Changes in stocks	458.5	438.8	560.5	416.0	450.0
Net imports of goods and non-factor services	-922.2	-720.8	-802.6	-1,370.5	-2,002.5
Imports	-1,886.3	-1,871.8	-2,575.1	-3,315.5	-5,254.1
Exports	964.1	1,151.0	1,772.5	1,945.0	3,251.6
GDP at market prices	5,246.6	6,704.6	8,209.9	9,782.4	12,474.6

SOURCE: Ministry of Planning and IMF.

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B. Egypt's Development Strategy

Economic Management and Growth Objectives, 1980-1984.

NOTE: This section represents the summary of the English language translation of 1980-1984 Development Plan prepared by the Ministry of Planning, dated November 1979.

1. Introduction

Sets Egypt's position in the Middle East and underscores the importance of the Peace process. (Paragraphs 1-4)

Perspective

Notes that the Egyptian population is expected to grow from just over 40 million to between 65-70 million by the year 2000. It highlights the importance of a positive population policy and points out that this population growth will fall on an economic base weakened by a decade of disinvestment in the country's infrastructure and productive sectors. It raises the issue of rapid urbanization as a potential danger which needs to be addressed. It concludes that Egypt's development policies and programs will need to be accelerated if improvements in the standard of living and quality of life are to be realized not only for the population of today, but for the future 20-25 million expected by the year 2000. (Paragraphs 5-10)

2. Conditions of Sustained Development

Egypt has succeeded in mobilizing an impressive development effort as some 20-23 percent of the national income has been devoted to investment. Some 25 percent should be sustainable in the immediate future of 1980-1984. The total planned investment for this period is estimated at L.E. 20 billion with an annual average of L.E. 4 billion rising from L.E. 3 billion in 1980 (L.E. 2.5 billion in 1979) to L.E. 5 billion in 1984.

TABLE III-3
GROSS FIXED INVESTMENT AT CURRENT PRICES, 1975-1979
(In Millions of Egyptian Pounds)

	1975	1976	1977	1978	1979
Commodity sectors	587.2	802.8	1,070.5	1,492.3	1,840.2
Agriculture	94.6	98.5	146.4	191.3	268.0
Industry and mining	286.8	378.7	561.0	765.0	817.2
Petroleum[1]	121.9	185.9	205.7	201.0	450.0
Electricity	53.3	59.4	109.0	202.7	229.0
Construction	30.6	80.3	48.4	132.3	76.0
Distribution sectors	399.2	398.8	473.1	728.6	952.4
Transportation, communication and storage[2]	383.5	372.9	443.3	691.8	882.4
Trade and finance	15.7	25.9	29.8	36.8	70.0
Service sectors	295.9	269.5	329.7	443.9	609.0
Housing	176.8	127.8	125.5	136.4	142.0
Public utilities	46.1	45.0	66.2	95.6	160.0
Other services	73.0	96.7	138.0	211.9	307.0
Less: Expenditures for the purchase of land	-17.0	21.0	-35.0	-47.0	-56.0
Gross fixed investment	1,265.3	1,450.1	1,838.3	2,617.8	3,345.6
Public sector	1,064.4	1,153.3	1,477.2	2,178.6	2,547.0
Private sector	200.9	296.8	361.1	439.2	798.6

1/ Exploration and production by foreign and domestic companies.

2/ Includes Suez Canal.

SOURCE: Ministry of Planning and IMF.

TABLE III-4
EMPLOYMENT BY SECTOR, 1975-1979
(Thousands)

	1975	1976	1977	1978	1979
Total Employment	9,432	9,505	9,715	10,069	10,459
Agriculture	4,217	4,068	4,104	4,135	4,164
Industry & Mining	1,159	1,181	1,227	1,287	1,341
Petroleum	18	19	19	26	27
Electricity	41	47	48	51	60
Transportation, communication and storage	404	414	444	464	506
Construction	447	480	457	538	629
Suez Canal					
Trade and Finance	966	1,014	1,051	1,096	1,152
Housing	143	144	145	147	155
Public Utilities	50	53	55	60	64
Other Services	1,988	2,084	2,165	2,266	2,360

SOURCE: 1975-1976 CAPMAS, 1977-1979 IBRD.

Three major issues have been of concern since the introduction of the 1978-1982 Development Plan:

i) The diversion of resources to the war effort between 1967-1973 led to a curtailed development program and deterioration of the capital stock. Idle capacity developed in the productive sectors. The quality of life in urban centers deteriorated and the rural areas were generally neglected. A balanced response is required.

ii) The "welfare" state constructed to shield consumers after the 1973 increase in oil prices has exceeded the economic management capacity of the bureaucratic machinery. Ever increasing subsidies were considered necessary as a social weapon to maintain stability; however, the effect has been eroded because the subsidies have been financed largely through budgetary deficits. The issue of subsidies is now a politically open question.

iii) The open door policy was viewed as an invitation to private investment, both foreign and domestic, to participate in the country's development efforts. It was a major turning point in the economic management of Egypt; however, a number of institutional, organizational and behavioral changes are required if the policy is to achieve its promise.

There is a need to restructure priorities in the direction and methods of economic management as well as in the pattern of Government investments and the role of the private sector. (Paragraphs 11-17)

3. Development Administration

The plan points out that current budgetary practice does not provide sufficient control on investment expenditures resulting in resources being spread too thin, lack of priorities, gaps in funding on-going projects from year to year. In response, a National Development Bank (NDB) has been decreed which is to provide the needed reforms in overall development administration. The decree entrusts the NDB with these responsibilities:

i) Review feasibility reports of projects included in the Plan;

ii) Prepare programs of implementation within the time schedule and cost estimates of the projects;

iii) Regulate the flow of investment expenditures on all projects in harmony with available resources and within the

TABLE III-5

BALANCE OF PAYMENTS, CURRENT ACCOUNT, 1974-1979

(In Millions of U.S. Dollars)

	1974	1975	1976	1977	1978	1979
Merchandise Exports, f.o.b.	1,818	1,875	2,169	2,346	2,558	4,024
Oil	251	473	828	1,012	1,262	2,860
EGPC	(187)	(289)	(644)	(720)	(802)	(1,880)
Foreign Oil Companies	(64)	(184)	(184)	(292)	(460)	(980)
Raw Cotton	663	371	312	457	286	348
Other Agricultural Products	194	155	231	260	223	198
Other Manufactures	344	398	497	317	515	351
Merchandise Imports, C.I.F.	-3,618	-4,608	-4,659	-5,110	-5,998	-7,436
Wheat and Flour	-798	-642	-547	-600	-841	-772
Other Agricultural Products	-247	-444	-748	-500	-696	-905
Intermediate Goods	-1,513	-1,939	-1,404	-1,466	-1,673	-1,968
Oil	(-444)	(-320)	(-263)	(-135)	(-149)	(-243)
Others	(-1,069)	(-1,619)	(1,141)	(1,331)	(1,524)	(1,725)
Machinery and Transportation Equipment	-506	-865	-1,051	-1,500	-1,700	-2,315
Manufactured Consumer Goods	-472	-493	-515	-650	-766	-845
Foreign Oil Companies Imports	-82	-225	-394	-394	-322	-531
Trade Balance	-1,800	-2,733	-2,490	-2,764	-3,440	-3,412
Net Non-Factor Services	92	95	627	773	927	697
Tourism	265	332	464	728	702	601
Suez Canal	--	85	311	428	514	589
Others	168	211	375	386	325	371
Payments	-341	-533	-523	-769	-614	-964
Balance on Goods and Non-Factor	-1,708	-2,638	-1,863	-1,991	-2,513	-2,715
Net Factor Services	70	122	413	472	1,098	1,143
Receipts	276	452	827	1,010	1,905	2,519
Workers Remittances	(189)	(366)	(755)	(897)	(1,761)	(2,214)
Investment Income	(87)	(86)	(72)	(113)	(144)	(305)
Payments	-206	-330	-414	-538	-807	-1,376
Interest Payments	(-156)	(-190)	(-274)	(-319)	(-415)	(-428)
Oil Company Transfers	(-50)	(-140)	(-140)	(-219)	(-392)	(-948)
Current Account Balance	-1,638	-2,516	-1,450	-1,519	-1,415	-1,572

SOURCE: Central Bank of Egypt, IMF and IBRD staff estimates.

TABLE III-6
BALANCE OF PAYMENT CAPITAL ACCOUNT, 1974-1979
(Millions U.S. $)

	1974	1975	1976	1977	1978	1979
1. Current Account Balance	-1,638	-2,516	-1,450	-1,519	-1,415	-1,572
2. Transfers	42	90	87	63	54	88
3. Autonomous Non-Monetary Capital	156	495	1,091	1,205	1,528	2,181
a. Direct Investment	87	225	444	477	387	710
b. Official Loans (Net)	-21	210	490	803	1,028	1,034
-- Drawings	(140)	(361)	(598)	(931)	(1,202)	(1,208)
-- Repayments	(-161)	(-151)	(-108)	(-128)	(-174)	(-174)
c. Private Loans (Net)	90	60	157	-73	113	437
-- Suppliers Credit	70	63	88	-84	83	428
-- Drawings	(295)	(365)	(501)	(467)	(684)	(998)
-- Repayments	(-225)	(-303)	(-413)	(-551)	(-601)	(-570)
-- Other (Net)	20	-3	69	11	30	9
4. Balance of Autonomous Transactions (1 + 2 + 3)	-1,440	-1,931	-272	-251	167	697
5. Balance of Payments-Loans and Grants 1/	1,261	1,506	780	1,601	809	72
-- Grants	1,261	986	705	382	291	72
-- Loans	--	520	75	1,219	518	--
6. Balance of Non-Monetary Transactions	-179	-425	508	1,350	976	769
7. Unallocated 2/	-874	-698	-1,184	-435	-504	-462
8 Monetary Capital (9 + 10 + 11)	1,053	1,123	676	-915	-472	-307
9. Commercial Banks	584	89	226	-1,005	-494	-101
10. Bilateral Payments	-28	-241	-10	-121	-35	-59
11. Central Bank (Net) 3/	497	1,275	460	211	57	-147
-- Official Loans and Deposits	412	1,280	252	203	-9	-9
-- IMF (Net)	38	-29	127	96	52	-40
-- Reserves	47	24	81	-88	14	-98

1/ Includes some loans and grants to cover defense-related expenditure.

2/ Includes some defense-related expenditure and debt repayments.

3/ Includes deposits to support the balance of payment.

SOURCE: Central Bank, IMF and IBRD.

frame of appropriate investment banking practices;

iv) Provide guarantees for the total funding of projects included in the Plan;

v) Mobilize domestic savings including the utilization of institutional savings for the purpose of investments; including foreign assistance funds. (Paragraphs 18-21)

4. A Strategy for Foreign Assistance

Egypt's foreign exchange earnings have increased, reaching a projected level of over $7.6 billion in 1980. Still higher earnings are expected because of oil earnings, Suez Canal revenues, tourism and sustained levels of workers' remittances. The 1984 target is $11.7 billion. Nevertheless, Egypt's capacity to import falls short of its needs. Imports are expected to increase from $8 billion in 1979 to $14.4 billion in 1984.

TABLE III-7
MEDIUM- AND LONG-TERM CIVILIAN PUBLIC EXTERNAL DEBT, 1976-1979
(In Millions of U.S. Dollars)

	1976	1977	1978	1979
Outstanding Debt (Disbursed), end-period	5,767.0	8,092.3	9,921.5	11,333.4
International Organizations	182.6	1,564.9	2,331.0	2,559.0
Foreign Governments	4,534.4	5,237.1	6,166.3	6,907.9
Financial Institutions 1/	333.2	650.6	751.0	763.0
Suppliers' Credits	716.8	639.7	673.2	1,102.9
Debt Service Payments	664.8	1,098.5	1,211.3	1,040.5
Amortization	553.6	758.2	824.8	804.1
Interest	111.2	340.3	386.5	236.3
Memorandum Items (In Percent):				
Total Debt Outstanding/GDP	60.1	68.8	70.7	61.4
Debt Service/Exports of Goods and Services	18.5	24.2	22.3	15.8

1/ Includes bonds.

SOURCE: IBRD and IMF.

TABLE III-8
SUMMARY OF FISCAL OPERATIONS, 1976-1980/81
(In Millions of Egyptian Pounds)

	1976	1977	1978	1979	Prelim. Actuals Jan.-June 1980[1]	Budget Estimates 1980/81
Total Revenue	2,015	2,755	3,306	3,864	2,038	5,981
Central Government Revenue	1,595	2,373	2,692	3,148	1,824	5,381
Tax Revenue	(1,251)	(1,876)	(2,034)	(2,412)	(1,270)	(3,618)
Transferred Profits	(243)	(384)	(539)	(501)	(449)	(1,457)
Other Non-Tax Revenue	(101)	(113)	(119)	(235)	(105)	(307
Local Government Revenue	89	114	141	162	51	204
Investment Self-Financing	331	268	473	374	164	396
Total Expenditure[2]	3,280	4,025	5,383	6,321	3,485	8,670
Current Expenditure[2]	2,300	2,476	3,072	3,774	2,142	5,345
Central and Local Government	(1,593)	(1,568)	(1,848)	(2,173)	(1,201)	(3,062)
Public Authority Deficits	(119)	(139)	(185)	(234)	(140)	(444)
Subsidies	(434)	(650)	(710)	(1,230)	(643)	(1,563)
Expenditures from Treasury and Investment Funds	(154)	(119)	(328)	(136)	(158)	(276)
Investment Expenditure	980	1,549	2,311	2,547	1,343	3,325
Overall Deficit (-)	-1,265	-1,270	-2,077	-2,636	-1,447	-2,689
Foreign Financing (Net)	488	464	705	480	558	785
Drawings	...	608	882	1,135	719	1,477
Amortization	...	-95	-115	-507[3]	-91	-507
Interest (-)	...	-49	-62	-148	-70	-185
Domestic Financing (Net)	781	933	1,391	1,938	889	1,623
Banking System[4]	437	471	827	1,256	563	805
Social Insurance and Pension Funds	295	353	381	491	244	611
Savings Certificates	54	76	135	157	61	135
Postal Savings	19	16	25	16	7	28
Domestic Bonds	...	16	26	31	14	32
Net Use of Public Enterprise Liquidity	-24	1	-3	-13	...	12
Others[5]	-4	-127	-19	217	--	280

[1] Based on preliminary actual data for revenue, public authority deficits, subsidies, investment expenditure, and financing. Other expenditure data are estimates agreed between the authorities and the staff at the time of the mission.

[2] Includes Emergency Fund deficit.

[3] Includes LE 331 million in payments resulting from exchange rate unification.

[4] From monetary accounts. Counterpart funds, which previously had been classified as government deposits, have been reclassified and excluded from these deposits. The figure for 1977 is adjusted for differences in the valuation of development bonds between the fiscal and monetary accounts.

[5] Reflects primarily the discrepancy between domestic bank financing in the fiscal and monetary accounts. For 1980/81, comprises an LE 280 million Eurocurrency loan intended for budgetary support but not yet realized.

SOURCE: Ministry of Finance and IMF.

TABLE III-9
GOVERNMENT REVENUE, 1976-1980/81
(In Millions of Egyptian Pounds)

	1976	1977	1978	1979	Prelim. Actuals Jan.-June 1980	Budget Estimates 1980/81
Central Government Tax Revenue	1,251.5	1,876.3	2,034.1	2,411.7	1,269.9	3,617.7
Taxes on Net Income and Profits	325.3	442.1	590.3	710.8	363.6	1,274.6
Business Profits	(277.6)	(387.2)	(538.4)	(655.7)	(321.6)	(1,226.0)
Personal Income	(47.7)	(54.9)	(51.9)	(55.1)	(42.0)	(48.6)
Taxes on Property	19.2	17.9	22.5	29.4	7.0	37.3
Estate Duties	(3.6)	(3.8)	(4.1)	(5.1)	(3.0)	(6.2)
Taxes on Immovable Property	(15.6)	(14.1)	(18.4)	(24.3)	(4.0)	(31.1)
Taxes on Goods and Services	283.6	339.7	360.3	566.8	274.1	843.3
Excise and Consumption Duties	(98.1)	(143.9)	(155.2)	(267.5)	(167.2)	(473.3)
Price Differentials	(185.5)	(195.8)	(205.1)	(299.3)	(106.9)	(370.0)
Taxes on International Trade	537.8	979.4	919.8	905.0	520.2	1,160.0
Customs Duties	(460.6)	(588.3)	(726.4)	(905.0)	(520.2)	(1,160.0)
Exchange Profits	(77.2)	(391.1)	(193.4)	(--)	(--)	(--)
Other Taxes	85.6	97.2	141.2	199.7	105.0	302.5
Stamp Taxes	(82.2)	(89.8)	(126.2)	(154.8)	(69.5)	(203.2)
Other	(3.4)	(7.4)	(15.0)	(44.9)	(35.5)	(99.3)
Central Government Non-Tax Revenue	343.9	497.1	658.3	735.7	553.6	1,763.6
Transferred Profits	242.9	384.4	539.3	501.0	448.6	1,457.2
Fees	37.6	46.8	53.8	81.3	60.0[2]	130.8
Sale of Capital Assets	--	--	--	--	--	32.0
Miscellaneous	63.4	65.9	65.2	153.4	45.0[2]	143.6
Total Central Government Revenue	1,595.4	2,373.4	2,692.4	3,147.4	1,823.5	5,381.3
Local Government Revenue	88.9	114.0	141.2	162.4	50.6	204.3
Total Revenue[3]	1,684.3	2,487.4	2,833.6	3,309.8	1,874.1	5,585.6

[1] Consolidates revenue credited to the administration budget, the Treasury Fund, and the domestic revenue of the Emergency Fund.

[2] Estimate.

[3] Excluding investment self-financing.

SOURCE: Ministry of Finance and IMF.

TABLE III-10
[illegible]: GOVERNMENT CLASSIFICATION OF CURRENT EXPENDITURE, 1976-1980/81
(In Millions of Egyptian Pounds)

	1976	1977	1978	1979	Estimates Jan.-June 1980[2]	
General Public Services	306.8	428.9	467.0	572.2	506.0	1,161.8
General Administration[3]	(220.7)	(323.6)	(344.3)	(414.3)	(422.0)	(931.9)
Public Order and Safety	(86.1)	(105.3)	(122.7)	(157.9)	(84.0)	(229.9)
Defense	452.7	343.2	339.4	772.0	324.0	921.6
Education	240.1	243.6	296.9	364.6	157.0	420.4
Health	80.2	79.7	96.2	114.9	57.0	149.7
Community and Social Services	29.0	29.9	53.8	86.4	40.0	111.6
Economic Services	72.2	69.4	89.7	100.8	50.0	133.7
Agriculture	(26.2)	(62.7)	(83.5)	(48.0)	(23.0)	(112.4)
Irrigation	(34.7)			(50.3)	(19.0)	
Transportation and Communication	(11.3)	(6.7)	(6.2)	(2.5)	(8.0)	(21.3)
Central Government Current Expenditure	1,181.0	1,194.7	1,343.0	2,010.9	1,134.0	2,898.8
Local Government Current Expenditure	108.6	116.7	135.3	161.8	67.0	163.4
Emergency Fund Deficit	303.0	256.0	370.0	--	--	--
Total Current Expenditure	1,592.6	1,567.4	1,848.3	2,172.7	1,201.0	3,062.2

[1] Excludes subsidies, transfers to public authorities, and most expenditure from the Treasury and Investment Funds. Expenditure from the Emergency Fund has been allocated to functional categories beginning in 1979 but a classification of net expenditure from the Emergency Fund is not available for the period 1976-1978.

[2] Total is estimated based on preliminary actual revenue and financing data. Components are adjusted proportionately from the revised budget estimates as agreed with the authorities in February 1980.

[3] Includes Investment Fund current operating expenditure and Treasury Fund outlays for pensions and contingencies.

SOURCE: Ministry of Planning and IMF.

The overall deficit is expected to remain constant, but the ratio to imports is expected to fall from 22.4 percent in 1980 to 18.8 percent in 1984. Official foreign aid flows are shown in Table III-16 as estimated by the World Bank.

One of the problems hindering faster rates of disbursement of foreign aid has been inadequate allocation of local currency financing. Also, the choice of projects has been often based on the availability of feasibility studies rather than priority listing because of the rapid increase in foreign assistance levels. This is now changing. The sectoral distribution of foreign assistance is shown in Table III-17.

5. Fiscal Management and Income and Price Policy

A key issue is mobilizing public savings. Among developing countries, Egypt's total tax effort is among the highest; however, the overall fiscal deficit as a ratio of GDP is a major issue of concern. Enlightened economic management must essentially strike a balance between growth and social justice. Table III-18 provides a summary of fiscal operations.

Between 1975 and 1979, the total revenues increased an average of 25 percent annually with tax revenues increasing at 22 percent, and public sector surpluses at 36 percent.

Current Government expenditures excluding subsidies increased at a lower rate than public revenues. Subsidies are required to achieve the Government's aim for social justice; however, the entire issue is under review and a national consensus is emerging which recognizes:

i) The system of food subsidies is not the optimal way of income redistribution;

ii) The dangers of allocating 10-15 percent of GDP for subsidies;

iii) The need to change the system of rationing;

iv) The urgency of reviewing current practices in the pricing of public sector commodities;

v) The need to change relative prices in the context of a coherent and more rational price-income policy. (Paragraphs 32-37)

6. The Overall Plan Frame

The Plan represents the revival of continuous medium-term planning in Egypt. The Plan rests on several premises:

i) A considerable increase in the tempo of development activity through interlinked targets and policies; the failure to achieve one may endanger others. This makes the need for increased coordination critical.

ii) A strict discipline needs to be enforced on project selection and scheduling. Projects outside the Plan if pursued will compete with and not complement the Plan. Apart from infrastructure projects, the private sector is expected to fully share in the productive projects.

iii) The domestic savings targets will require special efforts. Government current expenditure will clearly have to be rationalized and public sector enterprises will have to eliminate their deficits and generate sizable profits.

TABLE III-11
OUTSTANDING GOVERNMENT DOMESTIC DEBT, 1976-1980
(In Millions of Egyptian Pounds)

	1976		1977		1978		1979		1980
	June	Dec.	June	Dec.	June	Dec.	June	Dec.	June
Consolidated Loans	62.0	58.0	50.0	50.0	15.0	15.0	--	--	--
Palestine Loans	15.0	15.0	15.0	15.0	15.0	15.0	--	--	--
Loans for External Financing	47.0	43.0	35.0	35.0	--	--	--	--	--
Nationalization Bonds	112.3	54.7	55.1	55.2	55.2	--	--	--	--
Loans from Insurance and Savings Institutions 1/	2,320.3	2,519.4	2,615.9	2,876.9	3,003.5	3,280.2	3,428.3	3,787.4	4,037.7
Savings Certificates	307.7	344.9	392.2	442.2	489.8	556.9	649.2	712.3	776.2
Appreciation Bonds	63.4	68.8	74.5	79.6	85.0	91.6	100.5	104.7	109.5
Current Income Bonds	227.2	257.6	297.1	340.8	381.0	439.4	520.0	576.9	632.1
Lottery Bonds	17.1	18.5	20.6	21.8	23.8	25.9	28.7	30.7	34.6
Jihad Bonds	45.3	45.3	45.3	45.3	45.3	45.3	45.4	45.4	45.5
Treasury Bills	950.0	1,075.0	1,075.0	1,300.0	1,450.0	1,650.0	1,800.0	2,847.0	3,297.0
Total Government Debt Listed Above	3,797.5	4,097.3	4,233.5	4,769.6	5,058.8	5,547.4	5,922.9	7,392.1	8,156.4
Government-Guaranteed Bonds	8.5	8.5	8.5	8.5	8.5	5.0	5.0	5.0	5.0
Development and Agricultural Credit Bank	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Development Industrial Bank	3.5	3.5	3.5	3.5	3.5	--	--	--	--

1/ Mainly borrowing form social insurance and pension funds for investment or for general Treasury financing; does not include accrued interest.

SOURCE: Central Bank of Egypt and IMF.

TABLE III-12
MONETARY SURVEY, 1975-1980
(In Millions of Egyptian Pounds)

End of Period	1975	1976	1977	1978 Old Basis 1/	1978 New Basis 2/	1979 Sept.	1979 Dec. 3/	1980 Sept.
Foreign Assets (Net)	-973.7	-922.0	-644.8	-694.3	-2,195.2	-2,126.4	-2,016.2	-1,134.3
Foreign Assets	744.7	1,020.5	1,677.5	2,001.1	2,320.1	2,406.8	2,684.1	3,827.1
Foreign Liabilities	-1,685.3	-1,862.4	-2,206.4	-2,553.2	-4,248.5	-4,303.3	-4,480.7	-4,789.6
IMF Position (net)	-33.1	-80.1	-115.9	-142.2	-266.8	-229.9	-219.6	-171.8
Claims on Public Sector	3,527.4	4,123.4	4,774.7	6,035.1	7,855.2	8,888.1	10,008.9	11,318.6
Central and Local Government	2,436.1	2,896.2	3,382.3	4,284.1	5,954.8	6,988.4	7,631.0	8,564.8
Of which: Counterpart of Treasury Coin and Notes	(28.4)	(28.4)	(30.3)	(29.9)	(29.9)	(29.9)	(29.9)	(29.9)
Public Authorities	445.9	342.7	297.1	544.8	692.2	786.3	993.9	1,048.6
Public Sector Companies	645.4	884.5	1,095.3	1,206.2	1,208.2	1,113.4	1,384.0	1,345.2
Of Which: Cotton Financing	(107.3)	(158.5)	(143.7)	(168.5)	(168.5)	(11.2)	(217.3)	(4.9)
Claims on Private Sector 4/	235.5	262.1	441.4	577.3	581.7	888.0	1,012.2	1,484.4
Claims on Specialized Banks	211.9	179.4	205.7	232.3	236.8	314.2	257.2	358.1
Of Which: Agricultural Credit Bank	(188.7)	(154.9)	(156.3)	(148.4)	(154.0)	(197.3)	(123.2)	(163.0)
Unclassified Assets	150.1	246.9	327.9	378.3	410.1	531.1	412.5	560.4
Assets = Liabilities	3,151.2	3,889.6	5,104.9	6,528.7	6,888.6	8,495.0	9,674.6	12,587.2
Money and Quasi-Money	1,883.1	2,416.7	3,184.8	4,091.0	4,114.2	4,952.6	5,332.2	6,670.2
Currency in Circulation	1,155.9	1,387.8	1,749.5	2,183.3	2,183.3	2,487.0	2,656.9	3,150.7
Demand Deposits	406.3	546.4	782.4	896.4	947.6	1,004.2	997.1	1,142.9
Private Sector 4/	(405.3)	(539.9)	(780.7)	(888.9)	(937.3)	(996.0)	(990.5)	(1,137.7)
Specialized Banks	(1.0)	(6.5)	(1.7)	(7.5)	(10.3)	(8.2)	(6.6)	(5.2)
Time and Savings Deposits	320.9	482.5	652.9	1,011.3	983.3	1,461.4	1,678.2	2,376.6
Private Sector 4/	(320.6)	(482.1)	(625.8)	(995.6)	(966.0)	(1,425.9)	(1,643.4)	(2,342.2)
Specialized Banks	(0.3)	(0.4)	(27.1)	(15.7)	(17.3)	(35.5)	(34.8)	(34.4)
Public Sector Deposits	795.0	931.4	1,330.3	1,655.6	1,794.1	2,162.9	3,025.9	4,149.0
Central and Local Government	116.6	139.8	154.6	229.2	264.9	224.6	338.7	763.4
Public Authorities	131.7	147.3	257.7	391.4	432.1	574.2	1,175.1	1,662.6
Public Sector Companies	546.7	644.3	918.0	1,035.0	1,097.1	1,364.1	1,512.1	1,723.0
Counterpart Funds	170.7	155.6	141.6	125.2	125.2	111.6	105.2	74.2
Capital Accounts	191.6	231.8	274.5	375.6	485.4	613.1	641.3	915.4
Unclassified Liabilities	197.3	165.6	319.9	415.0	447.5	741.0	703.8	917.0
Interbank Items (net) 5/	-86.5	-111.3	-176.2	-133.7	-77.8	-86.2	-133.8	-136.8

1/ Foreign currency assets and liabilities valued at official and parallel exchange rates.

2/ Foreign currency assets and liabilities valued at unified (established) exchange rate.

3/ Adjusted to take into account the reclassification of public sector entities that occurred in consequence of the budget reform undertaken at the beginning of 1980.

4/ Includes cooperatives.

5/ Commercial banks' deposits with Central Bank (Central Bank balance sheet) plus commercial banks' borrowing from Central Bank (commercial banks' balance sheet) minus commercial bank's deposits with Central Bank (commercial banks' balance sheet) minus Central Bank claims on commercial banks (Central Bank balance sheet.)

SOURCE: Central Bank of Egypt and IMF, International Financial Statistics.

TABLE III-13
BALANCE SHEET OF THE CENTRAL BANK OF EGYPT, 1975-1980
(In Millions of Egyptian Pounds)

End of Period	1975	1976	1977	1978 Old Basis 1/	1978 New Basis 2/	1979 Sept.	1979 Dec. 3/	1980 Sept.
Foreign Assets (Net)	-752.6	-923.5	-1,352.5	-1,668.0	-3,164.9	-3,152.6	-3,077.9	-2,537.2
Foreign Assets	265.4	251.4	344.5	432.7	590.7	614.2	762.5	1,248.0
Foreign Liabilities	-984.9	-1,094.8	-1,581.1	-1,958.5	-3,488.4	-3,536.9	-3,620.8	-3,613.4
IMF Position (Net)	-33.1	-80.1	-115.9	-142.2	-266.8	-229.9	-219.6	-171.8
Domestic Assets	2,293.7	2,703.0	3,511.3	4,386.4	6,056.8	6,655.5	7,353.0	8,288.2
Claims on Public Sector	1,513.2	1,593.0	1,863.2	2,583.5	4,252.9	4,915.3	6,078.6	6,577.8
Central and Local Government 4/	(1,509.0)	(1,589.5)	(1,832.9)	(2,478.4)	(4,148.8)	(4,741.3)	(5,661.6)	(5,970.3)
Public Authorities	(4.2)	(3.5)	(30.3)	(105.1)	(105.1)	(174.0)	(417.0)	(607.5)
Claims on Commercial Banks	775.3	1,104.9	1,544.0	1,632.8	1,632.8	1,564.5	1,153.4	1,529.8
Claims on Specialized Banks	5.2	5.1	104.1	170.1	170.1	175.7	121.0	180.6
Unclassified Assets	16.7	52.6	50.5	22.7	25.5	31.2	19.0	27.3
Assets = Liabilities	1,557.8	1,832.1	2,209.3	2,741.1	2,917.4	3,534.1	4,294.1	5,788.3
Reserve Money	1,460.2	1,730.0	2,082.6	2,598.9	2,654.8	3,248.9	3,401.5	4,353.9
Currency in Circulation	1,155.9	1,387.8	1,749.5	2,183.3	2,183.3	2,487.0	2,656.9	3,150.7
Currency in Commercial Banks	56.9	69.3	75.0	89.9	89.9	112.9	121.9	136.0
Commercial Banks' Deposits	246.7	270.6	258.1	325.7	381.6	649.0	622.7	1,065.2
Specialized Banks' Deposits	0.7	2.3	--	--	--	--	--	2.0
Public Sector Deposits	37.8	40.1	46.6	71.8	100.9	51.3	693.1	1,176.1
Central and Local Government	37.5	39.9	46.3	70.9	100.0	51.0	97.4	448.2
Public Authorities	0.3	0.2	0.3	0.9	0.9	0.3	595.7	727.9
Counterpart Funds	10.0	--	--	--	--	--	--	--
Capital Accounts	37.8	47.4	48.4	60.7	150.6	170.2	179.6	208.9
Unclassified Liabilities	12.0	14.6	31.7	9.7	11.1	63.7	19.9	39.4

1/ Foreign currency assets and liabilities valued at official exchange rate.

2/ Foreign currency assets and liabilities valued at unified (established) exchange rate.

3/ Adjusted to take into account the reclassification of public sector entities that occurred in consequence of the budget reform undertaken at the beginning of 1980.

4/ Claims on central and local government plus counterpart of Treasury coin and notes plus use of Fund credit minus IMF deposits.

SOURCE: Central Bank of Egypt and IMF, International Financial Statistics.

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TABLE III-14
CONSOLIDATED BALANCE SHEET OF COMMERCIAL BANKS, 1975-1980
(In Millions of Egyptian Pounds)

End of Period	1975	1976	1977	1978 Old Basis 1/	1978 New Basis 2/	1979 Sept.	1979 Dec. 3/	1980 Sept.
Foreign Assets (Net).	-221.1	1.5	707.7	973.7	969.7	1,026.2	1,061.7	1,402.9
Foreign Assets	479.3	769.1	1,333.0	1,568.4	1,729.8	1,792.6	1,921.6	2,579.1
Foreign Liabilities	-700.4	-767.6	-625.3	-594.7	-760.1	-766.4	-859.9	-1,176.2
Reserves	385.3	451.2	495.4	505.4	505.4	788.7	803.2	1,213.6
Deposits with Central Bank	328.4	381.9	420.4	415.5	415.5	675.8	681.3	1,077.6
Cash	56.9	69.3	75.0	89.9	89.9	112.9	121.9	136.0
Domestic Assets	2,456.4	2,996.8	3,454.5	4,091.1	4,249.7	4,999.3	5,078.7	6,402.7
Claims on Public Sector	2,014.2	2,530.4	2,911.5	3,451.6	3,601.3	3,972.8	3,930.3	4,740.8
Central and Local Government	(927.1)	(1,306.7)	(1,549.4)	(1,805.7)	(1,806.0)	(2,247.1)	(1,969.4)	(2,594.5)
Public Authorities	(447.7)	(339.2)	(266.8)	(439.7)	(587.1)	(612.3)	(576.9)	(801.1)
Public Sector Companies	(645.4)	(884.5)	(1,095.3)	(1,206.2)	(1,208.2)	(1,113.4)	(1,384.0)	(1,345.2)
Claims on Private Sector 4/	235.5	262.1	411.4	577.3	581.7	888.0	1,012.2	1,484.4
Claims on Specialized Banks	206.7	174.3	101.6	62.2	66.7	138.5	136.2	177.5
Unclassified Assets	133.4	194.3	277.4	355.6	384.6	499.9	393.5	533.1
Assets = Liabilities	2,754.0	3,613.8	4,935.0	5,925.8	6,109.4	7,314.1	7,337.1	9,552.3
Borrowing from Central Bank	770.5	1,104.9	1,530.1	1,588.9	1,588.9	1,505.1	1,078.2	1,043.6
Demand Deposits	405.6	544.1	782.4	896.4	947.6	1,004.2	997.1	1,141.3
Private Sector 5/	405.3	539.9	780.7	888.9	937.3	996.0	990.5	1,137.7
Specialized Banks	0.3	4.2	1.7	7.5	10.3	8.2	6.6	3.6
Time and Savings Deposits	320.9	482.5	652.9	1,011.3	983.3	1,461.4	1,678.2	2,376.2
Private Sector 5/	320.6	482.1	625.8	995.6	966.0	1,425.9	1,643.4	2,342.2
Specialized Banks	0.3	0.4	27.1	15.7	17.3	35.5	34.8	34.0
Public Sector Deposits	757.2	891.3	1,283.7	1,583.8	1,693.2	2,111.6	2,332.8	2,972.9
Central and Local Government	79.1	99.9	108.3	158.3	164.9	173.6	241.3	315.2
Public Authorities	131.4	147.1	257.4	390.5	431.2	573.9	579.4	934.7
Public Sector Companies	546.7	644.3	918.0	1,035.0	1,097.1	1,364.1	1,512.1	1,723.0
Counterpart Funds	160.7	155.6	141.6	125.2	125.2	111.6	105.2	74.2
Capital Accounts	153.8	184.4	226.1	314.9	334.8	442.9	461.7	706.5
Unclassified Liabilities	185.3	251.0	318.2	405.3	436.4	677.3	683.9	877.6
Memorandum Item: Foreign Currency Deposits 6/	117.8	266.7	519.5	734.4	746.8	1,133.5	1,216.0	1,747.5

1/ Foreign currency assets and liabilities valued at official and parallel exchange rates.

2/ Foreign currency assets and liabilities valued at unified (established) exchange rates.

3/ Adjusted to take into account the reclassification of public sector entities that occurred in consequence of the budget reform undertaken at the beginning of 1980.

4/ Includes cooperatives.

5/ Includes foreign currency deposits of residents (including international organizations located in Egypt).

6/ Excludes earmarked deposits.

SOURCE: Central Bank of Egypt and IMF, International Financial Statistics.

TABLE III-15
CONSUMER PRICE INDEX FOR URBAN POPULATION, 1975-1980
(1966/1967 equals 100)

	1975	1976	1977	1978	1979	September 1980	September 1981
Food and Beverages (52.5) 1/	181.9	209.2	231.3	254.7	277.3	270.8	357.6
Cereals (11.2)	121.5	125.8	135.8	139.3	134.4	132.6	181.9
Pulses (6.6)	202.1	218.5	256.9	273.9	305.4	288.8	431.3
Meat, fish, and eggs (13.1)	234.2	287.8	316.2	331.8	383.7	371.0	539.3
Dairy products (5.9)	216.6	240.9	279.6	315.4	336.9	323.6	386.3
Vegetables (3.8)	218.5	276.8	241.3	331.7	336.8	376.1	346.3
Fruits	187.6	230.2	263.6	362.2	392.4	364.3	483.9
Housing (15.7)	108.6	109.1	109.5	110.2	111.2	120.5	116.1
Furniture and other durables (1.3)	128.4	136.3	156.3	181.1	187.7	187.7	187.8
Clothing (8.4)	140.1	147.3	156.3	181.1	187.7	187.7	187.8
Transportation and communication (4.4)	122.6	136.0	144.7	145.1	185.6	185.6	193.9
Services (9.9)	140.5	144.0	180.8	203.8	244.2	244.2	272.8
Personal expenses (100.0)	155.2	171.2	191.1	212.6	233.5	231.5	285.6

1/ The numbers in parenthesis are indicative commodity weights based on the commodity weights employed in five regional subindices and population weights for these regions. The regional weights are based on a family budget survey of 1964/65 and the sample population census of 1966.

SOURCE: Central Agency for Public Mobilization and Statistics and IMF.

TABLE III-16
OFFICIAL FOREIGN AID FLOWS AND EXTERNAL DEBT
(U.S. $ Million)

	1979	1980	1981	1982	1983	1984
Aid Commitments						
1. Starting Pipeline	4,300	5,155	5,750	5,990	6,580	7,380
(of which, project)	(3,000)	(3,305)	(3,370)	(3,575)	(4,125)	(4,775)
2. New Commitments	2,015	2,245	2,500	3,575	4,000	4,500
(of which, project)	(860)	(985)	(1,285)	(2,350)	(2,650)	(3,380)
Aid Disbursements	1,160	1,650	2,260	2,985	3,200	3,600
(Project)	(555)	(920)	(1,110)	(1,770)	(2,000)	(2,300)
(Ratio of Pipeline) 1/		31%	34%	54%	56%	56%
(Non-Project)	(605)	(730)	(1,150)	(1,215)	(1,200)	(1,300)
Amortization 2/	938	970	1,150	1,560	1,970	2,050
Interest Payments	415	430	448	480	540	600
Debt-Service Ratios	20.6%	18.4%	18.5%	21.2%	23.6%	22.6%
New Inflow						
Aid Disbursements Less Debt Service	-193	250	672	945	690	950

1/ Project disbursements as related to previous year's pipeline.

2/ Debt service including service on suppliers' credits.

SOURCE: World Bank.

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TABLE III-17
SECTORAL DISTRIBUTION OF FOREIGN ASSISTANCE TO EGYPT AS OF END OF JUNE 1979

Sectors	Allocation		Commitments	Disbursement	
	LE Million	Percent of Total	LE Million	LE Million	Percent of Total
Transport and communication	738	25.7	485	234	15.8
Industry	633	22.0	397	225	15.2
Power	427	14.9	243	87	5.9
Housing & construction	278	9.7	144	64	4.3
Water supply & sewage	233	8.1	85	25	1.7
Irrigation	180	6.3	28	13	0.9
Services	140	4.9	100	24	1.7
Agriculture	94	3.3	13	5	0.3
Tourism	9	0.3	6	4	0.3
Others	139	4.8	100	86	5.8
Total Project Loans	2,871	100.0	1,601	767	51.9
Commodity and Cash Loans	1,368		979	710	48.1
Grand Total	4,239		2,580	1,477	100.0

SOURCE: Ministry of Economic Cooperation and Ministry of Planning. (Paragraphs 22 - 31).

TABLE III-18
SUMMARY OF FISCAL OPERATIONS
(L.E. Millions)

	1975	1976	1977	1978	1979 1/	Average Annual Growth Rate Percent
1. Central and Local Government Revenue	1,160	1,441	2,103	2,385	2,596	22
2. Public Sector Surplus	364	574	652	787	1,273	36
3. Social Insurance Surplus	253	295	353	379	430	15
4. TOTAL	1,777	2,310	3,108	3,551	4,299	25
5 Current Government Expenditure 2/	1,457	1,906	1,876	2,420	2,960	19
6. Public Organizations' Deficit	(93)	(119)	(139)	(189)	(273)	
7. "Surplus"	320	404	1,232	1,131	1,339	
Competing Demands						
8. (I) Public Investment Expenditure	863	980	1,549	2,212	2,528	31
9. Less Net Foreign Financing	240	528	513	764	956	
10. Net Investment Demand	623	452	1,036	1,448	1,572	26
11. (II) Subsidies	622	434	650	684	1,277	20
12. Overall Deficit 3/	1,165	1,010	967	1,764	2,466	20
Overall Deficit as % of Surplus	264	250	78	155	184	

1/ Preliminary estimates.

2/ Excluding subsidies.

3/ Rows 8 + 11 - 7.

SOURCE: World Bank. While there are some reservations regarding the inclusion and exclusion of some significant amounts (e.g., public sector reserves utilized for investment purposes), it was felt that the statistical presentation of the fiscal policy should provide the appropriate perspective for analysis without undue attention to detailed revision of figures.

iv) Organizational and management improvements will have to be implemented. A start has been made by decentralizing decision-making in public sector enterprises and encouraging more private sector competition.

v) The Plan requires a continued inflow of external capital, particularly in the beginning, but the burden will increasingly be shifted to the country's own efforts. (Paragraphs 38-43)

7. Growth Strategy

The Plan's overall growth objective is to achieve a gradual acceleration of the rate of growth from around 8 percent at present to a sustained 10 percent in the 1980's. A profile of sectoral growth targets during the Plan period is shown in Table III-19.

As much as 40 percent of the growth of GDP as projected is from oil, Suez and tourism. The share of industrial GDP remains constant. Agriculture growth of production is expected to remain at around 3 percent a year.

Priority in agriculture is to be given to rising yields from presently cultivated lands and already reclaimed lands. Viable new reclamation projects will be sought, but are recognized as very costly. The Government's role is to be mainly canalization and drainage only with other costs borne by the new farmers who would own rather than rent the lands. Infrastructure would be kept to a minimum. The Plan views that this limits future land reclamation projects to areas adjoining the existing lands of the Nile Valley. (Paragraphs 44-50)

8. Rural Development

The Plan is concerned with grass roots needs. Regional Planning Authorities have been established as an extended arm of the Ministry of Planning in eight regions. Widely attended open meetings were held with local authorities with

TABLE III-19
GDP GROWTH TARGETS, 1979-1984

	Constant 1979 Prices (LE Million)			Sectoral Structure (Percent)	
	1979	1980	1984	1979	1984
Agriculture	2,580	2,640	3,023	25.4	18.3
Industry and Mining	1,472	1,590	2,395	14.5	14.5
Oil and Products	1,680	1,874	3,030	16.5	18.4
Power	100	110	163	1.0	1.0
Construction	420	540	840	4.1	5.1
Transport and Communications	437	475	740	4.3	4.5
Suez Canal	399	502	931	3.9	5.7
Trade and Finance	1,074	1,170	1,773	10.6	10.8
Housing and Utilities	188	206	330	1.9	2.0
Other Services	1,810	2,120	3,250	17.8	19.7
GDP at Factor Cost	10,160	11,227	16,475	100.0	100.0
Annual Rate of Growth		10.8	10.0		

SOURCE. Ministry of Planning

TABLE III-20
REGIONAL AND SECTORAL DISTRIBUTION OF BASIC NEEDS INVESTMENT BY GOVERNORATE
(EXCLUDING CAIRO AND ALEXANDRIA), 1979-1980
(L.E. Millions)

Region	1979	1980											Total
		Traditional Sectors						Non-Traditional Sectors					
		Industry	Electricity	Transport.	Utilities	Services	Total	Agriculture	Housing	Water Supply	Sewage	Total	
Delta	19.1	--	3.7	13.9	5.0	6.1	28.7	7.5	5.4	20.7	10.6	44.2	72.9
Canal	8.5	1.0	3.9	5.2	7.7	2.7	20.5	0.8	11.0	24.1	17.7	53.6	74.1
Matrouh	1.9	0.1	3.0	1.4	0.4	0.5	5.4	0.3	1.0	0.8	--	2.1	7.5
North Upper Egypt	4.0	0.8	1.4	3.7	1.8	1.7	8.8	4.3	3.2	8.0	2.0	17.5	26.3
Assiut	3.8	0.6	1.8	2.9	1.7	0.9	7.9	0.9	1.6	3.6	1.5	7.6	15.5
Aswan Region	9.5	1 3	1.9	5.2	4.9	2.2	15.5	5.4	4.0	17.9	8.2	35.5	51.0
Joint Projects											8.0	8.0	8.0
TOTAL	46.8	3.8	15.7	32.4	21.5	13.4	86.8	19.2	26.2	75.1	48.0	168.5	255.3 1/

1/ In addition some LE 125 million have been allocated for investment in education and health services. These have not been, as yet, classified by region.

2/ Traditional vs. non-traditional sectors refer to those sectoral investments which have historically been the domain of local authorities.

SOURCE: Ministry of Planning

popular participation. A pattern of basic needs emerged. A statistical summary related to basic needs in each region is shown in Table III-20. These are for the most part "small" projects and responsibility for implementation will largely rest with the local authorities. The total investment allocation proposed to meet some of the basic needs in rural areas at the local level in 1980 is estimated at over L.E. 255 million. This is slightly less than 12 percent of the total planned investment for the year.

An additional L.E. 366 million has been allocated in 1980 for basic needs for the Cairo and Alexandria regions, mainly water supply and sewerage, health and education. (Paragraphs 51-54)

9. Housing

An extensive survey of the housing sector was completed in 1979. The needs to the year 2000 are estimated to be:

	Million Units
Estimated Shortage at Present	1.6
Housing Needs to Meet Population Growth	2.1
Replacement	0.3

The Plan incorporates a gradually accelerated annual housing program proposing the following:

i. a declining share of government-financed housing,

ii. a concentration on low income units,

iii. the lowering of the surface area of housing units to 38-46 square meters, and

iv. ownership rather than rental. (Paragraphs 55-57)

10. Industrial Growth

Industrial growth is targeted to continue to achieve the 12 percent annual rate which has been maintained since 1976. Emphasis will be on upgrading existing capacity (such as in textiles), strategic investment in export-import industries and those using domestically produced raw materials. (Paragraph 58)

11. Investment Strategy

The proposed total investments during the 1980-1984 Plan is around L.E. 20,000 million (at constant 1979 prices) This represents a substantial increase over past levels. In relation to GNP, however, investments are stabilized.

The allocation of the planned investment expenditures to the various sectors is shown in Table III-21. (Paragraphs 59-60)

12. The General Equilibrium of the 5-Year Plan

The task of formulating the Plan has been a series of difficult choices balancing competing needs.

Gross Output is projected to increase during the period by some 9.7 percent. Net factor receipts from abroad have been assumed to stabilize. Indirect taxes have been projected as a constant ratio to GDP at factor cost. Subsidies have been considered as a segment of the value of household consumption. Inclusive of subsidies, private consumption is projected to grow at an average annual rate of 7.2 percent. This rate implies a decline in the average propensity to consume from some 0.864 to 0.777 for 1980 and 1984 respectively.

As a consequence, the marginal propensity to save would be around 0.35. Such a high coefficient can only be sustained if a determined policy of domestic resource mobilization for development is implemented.

The level of total investments is consistent with the need to increase employment. The projected increase in employment during the five years is estimated at 1.5 million which exceeds the annual growth of the labor force. There is an implicit increase in productivity which would support an appreciable increase in real wages. The projected high employment effect would be the result of relatively low capital labor ratios — less than $20,000 per worker. The Government's policy is to put a greater stress on labor intensive projects. (Paragraphs 61-67)

TABLE III-21
SECTORAL DISTRIBUTION OF INVESTMENTS, 1980-1984

Sectors	Allocation (LE Million)	Percent of Total
Agriculture and Food Security	(3,600)	18.0
Agriculture and Land Reclamation	1,000	
Irrigation and Drainage	1,400	
Fertilizer Plants	200	
Agricultural Processing	400	
Silos, Mills, Storage, etc.	600	
Housing and Infrastructure	(4,500)	22.5
Housing and Public Utilities	3,250	
Building Materials Industries	500	
Construction	150	
New Communities	600	
Transport and Communication	(4,150)	20.8
Telecommunications	1,750	
Transport	1,900	
Roads	500	
Power	(1,800)	9.0
Industry	(2,500)	12.5
Export Sectors	(1,850)	9.2
Oil	600	
Suez Canal	500	
Tourism	300	
Ports	250	
Trade and Finance	200	
Social Services	(1,600)	8.0
Education	1,000	
Health	300	
Other Services	300	
TOTAL	20,000	100.0

SOURCE: Ministry of Planning.

C. Investment and Its Financing

1. Estimates of Investment Requirements

Using historical data and information from the 1980-1984 Development Plan, NUPS hypothesized that a 6.8 percent annual growth rate in investment would lead to a 7 percent rate of growth in output. Sustained growth at this rate requires that the absolute level of investment double every ten years, reaching L.E. 12.6 billion by the year 2000.

Even though capital accumulation is discussed at the macro-economic level, it is desirable to make some broad distinctions between types of capital. In particular, we distinguish between social overhead capital (the distribution sectors) and directly productive capital (commodity and service sectors). This distinction is important when analyzing alternative national urban policies because it is the distribution sector that links the spatially-distributed productive capital and the associated spatial distribution of the population. Put another way, the estimate of the amount of capital needed to generate a target rate of growth in the commodity producing sectors will depend on the locations specified for economic activity. This, in turn, depends on the characteristics of the national urban policy.

It is worthwhile to make a few general comments about the determination of the levels of required investment before presenting the figures. The amount of capital needed to generate a target level of output depends on the capital intensity of the production process, the productivity of capital and the time period over which the capital is productive. Because the

future characteristics of each of these elements are not currently known but will be determined by the investment patterns that will evolve during the nineteen year period, the analysis in this report is necessarily based on some general assumptions. Capital intensity will rise modestly over the period, but the character of much of the industrial sector investment will be labor intensive with a short payoff period. These characteristics are appropriate for any economy in which labor force growth is vigorous and the risk associated with long-lived projects undertaken during a transitional period is high.

The starting point for the investment projection is the 1980-1984 Development Plan previously summarized.

The amount of investment required in the productive and distribution sectors depends on spatial policy. For example, it was stated that the spatial distribution of economic activities and population generate demands for interregional infrastructure networks. A widely-dispersed population will need more interregional networks than a concentrated population.

2. Financing Investment

Investment, in any year, is that portion of the available resources (outputs) that is not consumed. This is the macroeconomic identity — saving equals investment. Investment was presented above as a requirement of economic growth. This requirement can be met only if sufficient saving occurs to direct resources into investment.

In this analysis of the saving/investment relationship, the variables of interest are flows of goods and services rather than financial flows or stocks. Saving is by definition output that is not consumed. It may be either domestically produced or imported. Thus, total resource availability is the sum of Gross Domestic Product (at market prices) and the excess of imports over exports. Gross National Saving is the difference between total resource availability and total consumption (private consumption plus public consumption). Gross National Saving is comprised of Domestic Saving (Gross Domestic Product minus consumption) and Foreign Saving (imports minus exports). Foreign Saving can be financed in a variety of ways: worker remittances, direct foreign investment, medium and long term official loans and grants, private loans and the draw down of foreign balances.

When domestic saving is large enough to meet the required investment levels it is not necessary to draw on foreign savings; provided the imports needed for investment projects (or for consumption) can be paid for with export earnings. This is not the case in Egypt today, nor is it likely to be in the near future. Consequently, there are three gaps that could constrain investment below the desired level. The first is the overall saving/investment gap. If Gross National Saving is deficient, investment will be held below the target level. The other two gaps arise when there is a single source of supply for the investment inputs. If a required input is not available in the domestic market (as is often the case with capital goods) there must be a source of foreign exchange to purchase the input. This source can be either foreign savings or export earnings. If these are less than required, a foreign exchange gap results which can keep investment below the target level. Likewise, when a required input cannot be imported, either because it is physically impossible to import or because the import cost is prohibitive, it must be financed by domestic savings. Foreign exchange provides Egypt with a claim on the resources of the rest of the world, it does not make available additional local resources.

The implication of the foregoing is that there must be a change in the sources of saving. In particular, excessive reliance on foreign financing of investment can lead to a number of problems. Servicing a large foreign debt requires that the investments result either in a larger volume of exports or a smaller volume of imports. If delays are encountered in completing the investments, or if actual productivity is below expected productivity, there may be insufficient foreign exchange in future years to service the foreign debt. In turn, this would adversely affect credit-worthiness and lead to a reduction of foreign saving. Delays are likely if there are shortages of domestic inputs.

3. Saving Trends

Table III-22 displays the relationship between resource availability and saving for the period 1975-1979.

Domestic production at market prices in 1979 was L.E. 12,475 million, of which L.E. 10,682 million was consumed. Domestic production available for investment was L.E. 1,793 million while investment in 1979 was L.E. 3,796 million. This means L.E. 2,002 million of

TABLE III-22
NATIONAL SAVINGS
(L.E. Million — Current Prices)

	1975	1976	1977	1978	1979
GDP Factor Cost	5,061			9,008	11,936
+ Net Indirect Taxes	186			774	539
= GDP at Market Prices	5,247	6,705	8,210	9,782	12,475
+ Net Factor Income	-16	133	433	983	761
= GNP Market Prices	5,231	6,838	8,643	10,765	13,236
GDP at Market Prices	5,247	6,705	8,210	9,782	12,475
- Private Consumption	3,101	3,965	4,917	6,278	8,623
- Public Consumption	1,344	1,572	1,697	1,841	2,059
Domestic Saving	802	1,168	1,596	1,663	1,793
Investment (Fixed)	1,265	1,450	1,838	2,618	3,345
+ Change in Stock	459	439	561	416	450
- Domestic Saving	802	1,168	1,596	1,663	1,793
= Import Surplus	922	721	803	1,371	2,002

SOURCE: Ministry of Economy & USAID/Cairo.

total investment (53 percent) came from outside the country, as an excess of imports over exports.

The domestic saving effort (shown in Table III-23, row 1) is both below international standards and declining. Although there have been significant gains in production in recent years, only a small portion of the gains have been directed to investment. Table III-23 shows in row 3 the consequent increased reliance on foreign sources to finance the country's investment program (i.e., the ratio of import surplus to gross investment is increasing).

These data suggest the following characterization of the Egyptian economy. The country has begun an enormous investment program, partly to rehabilitate the capital stock that was neglected in the late sixties and early seventies and also to bring about a higher level of output and employment. This desire to increase investment has not been accompanied by much increase in domestic resources for investment. In this situation, either the investment effort must be scaled down or foreign financing must close the gap. Foreign resources can (and did) close the gap in the short run.

Excessive reliance on foreign financing exposes the nation's investment plan to the vagaries of foreign economic and political events. This is especially true when a substantial portion of the foreign saving takes the form of government-to-government concessionary loans and transfers. An investment program financed largely with domestic resources will have a more sturdy foundation than one relying on foreign sources. An indication of the magnitude of the required change in Egyptian saving patterns can be gotten from a comparison of recent data and the 1980-1984 Development Plan. The marginal propensity to save (MPS) for the years 1976-1979 and the MPS used in the Development Plan are shown in Table III-24. The marginal propensity to save is the fraction of output growth that is saved. As indicated, the fraction of output growth which was saved in 1978 and 1979 fell far short of that anticipated in the development plan.

TABLE III-23
SAVINGS RATIOS

	1975	1976	1977	1978	1979
Domestic Saving/ Gross Domestic Product	.15	.17	.19	.17	.14
Domestic Saving/ Gross Investment	.45	.62	.67	.55	.47
Import Surplus/ Gross Investment	.53	.38	.33	.45	.53

SOURCE: Table III-1.

TABLE III-24
MARGINAL PROPENSITY TO SAVE

		1976	1977	1978	1979
Historical Data		.37	.35	.04	.05
	1980	1981	1982	1983	1984
Plan Data	.33	.36	.29	.33	.30

SOURCE: Ministry of Planning and IMF.

In other words, an increase in national income of one pound, led to an increase in saving of only four to five piasters in 1978 and 1979. If this pattern were to persist, the investment targets would become hopelessly out of reach. Investment projects would have to be abandned, employment growth would slow down and self-sustained economic growth would not occur.

4. Development Plan

The importance of an improved saving effort is clear to Egyptian economic planners and is made explicit in a Ministry of Planning document regarding the Five Year Plan. Table III-25 presents the saving/investment relationship derived from the Five Year Plan. The reduction in the foreign share of investment financing from one-half to one-third in a period of five years would be quite remarkable. The plan envisions that a relatively slower growth rate of private consumption will release resources for investment. The annual growth rate of private consumption is 8.5 percent, compared to an output growth rate of 10.8 percent. The Plan

TABLE III-25
NATIONAL SAVINGS 1980-1984 DEVELOPMENT PLAN
(L.E. Million, 1979 Prices)

	1980	1981	1982	1983	1984
GDP at Factor Cost	11,257	12,479	13,677	15,007	16,475
+ Indirect Taxes	2,290	2,525	2,780	3,050	3,335
= GDP at Market Prices 1/	13,547	15,004	16,457	18,057	19,810
+ Net Factor Income	685	661	640	683	687
= GNP at market Prices 1/	14,232	15,665	17,097	18,740	20,497
GDP at Market Prices 1/	13,547	15,004	16,457	18,057	19,810
- Private Consumption 1/	9,407	10,110	10,925	11,805	12,805
- Public Consumption	2,390	2,700	2,985	3,270	3,580
= Domestic Saving	1,750	2,194	2,547	2,982	3,425
Investment (Fixed)	3,350	3,600	3,920	4,385	4,830
+ Change in Stocks	100	110	120	140	200
- Domestic Saving	1,750	2,194	2,547	2,982	3,425
= Import Surplus	1,700	1,516	1,493	1,543	1,605
Ratio DS/Total I	.51	.59	.63	.66	.68

1/ Includes consumer subsidies. Therefore, these are not technically market prices. This accounting procedure does not affect the saving section.

SOURCE: Ministry of Planning.

document referred to above is not explicit, however, about policy changes that could lead to the increases in the saving rate.

5. Saving Projections

The output and investment components of Table III-27 are from the NUPS economic projection. If the high marginal saving rates of the plan are achieved and maintained along with output growth, then domestic resources should be sufficient to finance investment by the turn of the century. To get an indication of the magnitude of the economic transformation involved, note that domestic saving in 2000 exceeds total output in 1979. After 19 years of high economic growth, the Egyptian economy would be investing, from its own resources, an amount which exceeds total current production.

6. Financing Foreign Saving

Since the mid-seventies, there has been a large inflow of foreign low-interest loans and grants into Egypt from other countries and institutions. Direct private investment has grown rapidly but is still concentrated in the petroleum sector. When the loans come due and the foreign investment projects come on-line, foreign exchange will be needed for debt repayment and profit repatriation. The domestic saving estimates in Table III-26 are net of these capital movements. If Egypt is to continue to attract foreign saving throughout the period it must earn (or save through import substitution) enough foreign exchange to meet the repayment schedule. At the present time, Egypt's foreign exchange earnings come from four principal sources: workers' remittance, petroleum, Suez Canal and tourism. As foreign loans come due these revenues will have to be shifted from paying for imports to repaying debt. Unless these revenues continue to grow rapidly or new revenue sources are found, imports will be curtailed.

Estimating future receipts from these four sources is problematic. The Development Plan forecasts that by 1984 workers' remittances will level off and Suez Canal revenues will rise at a modest 6 percent over 1983. Oil exports (not including the oil companies' share) will rise 10 percent and tourism revenue 14 percent.

A logical source of new foreign exchange earnings is the non-oil commodity sectors. Foreign markets for manufactured and agricultural goods should be identified and developed. A more diversified mix of exports would protect the economy from adverse changes in one of the four principle sources. It would disperse the development process throughout the economy and, as domestic firms become competitive in world markets, import substitution would be economical. In summary, over the next 19 years Egypt must both amortize its existing foreign debt and finance future import surpluses. Current foreign exchange sources may not be buoyant enough to provide funds for both. If this happens a shortage of foreign exchange would disrupt the investment program. A diversified program of export promotion and import substitution in manufacturing and agriculture can both provide foreign exchange and spread the development process through the economy.

At the same time foreign exchange sources are being developed, economic planners must identify policies to bring the domestic saving effort into accord with the Development Plan.

TABLE III-26
NATIONAL SAVINGS, 1985-2000
(L.E. Million, 1979 Prices)

	1985	1990	1995	2000
GDP at Factor Cost	17,487	23,425	31,694	43,427
+ Net Indirect Taxes	1,439	1,928	2,608	3,573
= GDP at Market Prices	18,926	25,353	34,302	47,000
= Net Factor Income				
= GNP at Market Prices				
GDP at Market Prices	18,926	25,353	34,302	47,000
- Private Consumption	11,592	14,544	18,395	23,502
- Public Consumption	3,824	5,252	7,291	10,260
= Domestic Saving	3,510	5,557	8,616	13,238
Investment (Fixed)	5,071	6,793	9,191	12,594
+ Change in Stocks	184	246	333	456
- Domestic Saving	3,510	5,557	8,616	13,238
= Import Surplus	1,745	1,482	908	-188

SOURCE: Ministry of Planning

TABLE III-27
PUBLIC SAVINGS
(L.E. Million, Current Prices)

	1976	1977	1978	1979
TOTAL REVENUE	2,015	2,755	3,306	3,684
- Current Expenditure	2,300	2,476	3,072	3,774
= Public Saving	(285)	279	234	(90)
PUBLIC INVESTMENT	980	1,549	2,311	2,547
- Public Saving	(285)	279	234	(90)
Government Deficit	1,265	1,270	2,077	2,637

SOURCE: IMF.

7. Policy Change to Increase Saving

The reasons for a low domestic saving rate can usually be identified by analyzing the economic environment in which savings decisions are determined. These savings decisions are made in both the public and private sectors. For public saving to take place, government revenue must exceed government current expenditure. In 1979, government revenue was L.E. 3,684 million; government current expenditure (including public authority deficits and subsidies) was L.E. 3,774 million so that public saving was a negative L.E. 90 million. During the same period government investment was L.E. 2,547 million, producing a public deficit of L.E. 2,637 million. Comparable data for previous years is shown in Table III-27.

A closer look at the fiscal operations in 1979 shows some of the more important reasons behind this poor saving performance. Transfers from the Public Enterprises to the central government amounted to L.E. 501 million. However, L.E. 401 million came from petroleum and the Suez Canal. The other authorities and companies, in spite of their dominant role in the economy, did little more than cover their production costs. The domestic saving effort would be substantially improved if these companies were operated more efficiently. If efficiency increases, they would be better able to compete with foreign firms in both domestic and international markets. While it is true that the motivation behind some of the current regulation of the public sector is the important social equity objective, there are better ways to enhance social equity than operating the industrial sector inefficiently.

A second reason for the weak public saving effort is the level of subsidies, L.E. 1,230 million in 1979, of which L.E. 880 million was for the General Authority for Supply Commodities. Here again, there appears to be a conflict between economic development objectives and social equity objectives.

However, the right question regarding consumer subsidies is how extensive they should be and not whether there should be subsidies. Both the food subsidy and the implicit fuel subsidy are open-ended; they are available to and used by all income classes, although the intent of the subsidies is to protect the poor. A reduction in the number of items subsidized and in the number of people eligible for the subsidy would release funds for investment and move market prices toward levels that reflect relative scarcities.

Decisions in the private sector are also important in determining the overall saving effort. Households can invest their savings directly in family-owned enterprises, or they can use the commercial banking system to channel savings into investment projects. The real return on private savings held in the banking system depends on the bank interest rate and the rate of inflation. With rates of inflation above bank interest rates, the real return to savings is negative, This tends to discourage saving. This situation has developed in Egypt over the past several years primarily as a result of government borrowing to finance the deficit (Table III-27 shows the magnitude of the deficit). This borrowing has contributed to money supply growth that exceeds the growth of output.

TABLE III-28
NUPS ECONOMIC PROJECTIONS

	HIGH GROWTH RATE				LOW GROWTH RATE			
	1985	1990	1995	2000	1985	1990	1995	2000
OUTPUT (L.E. Million, 1979 Prices)								
Agriculture	3,128	3,744	4,666	5,874	3,128	3,537	4.097	4,765
Manufacturing, Mining and Construction	3,522	5,288	8,524	14,116	3,522	4,695	6,660	9,751
Petroleum	3,066	3,208	3,390	3,627	3,066	3,160	3,271	3,402
Housing and Infrastructure	2,410	3,841	5,228	6,594	2,410	3,361	4,203	4,958
Services	5,361	7,344	9,886	13,217	5,361	6,679	8,222	10,063
GDP at Factor Cost	17,487	23,425	31,694	43,428	17,487	21,432	26,453	32,939
INVESTMENT (L.E. Million, 1979 Prices)								
Agriculture	659	1,019	1,379	1,889	455	643	794	988
Manufacturing, Mining and Construction	1,014	1,970	3,585	4,912	699	1,243	2,063	2,569
Petroleum	101	136	184	252	70	86	106	132
Housing and Infrastructure	2,586	2,717	2,757	3,778	1,784	1,715	1,587	1,976
Services	710	951	1,287	1,763	490	600	741	922
Total	5,070	6,793	9,192	12,594	3,498	4,287	5,291	6,587
EMPLOYMENT (Thousands)								
Agriculture	4,551	4,954	5,530	6,283	4,531	4,793	5,137	5,545
Manufacturing, Mining and Construction	2,675	3,563	5,182	7,856	2,632	3,211	4,173	5,623
Petroleum	40	42	45	48	40	41	43	45
Housing and Infrastructure	1,068	1,357	1,630	1,897	1,052	1,241	1,404	1,549
Services	4,517	5,472	6,754	8,494	4,467	5,091	5,854	6,798
Total	12,851	15,388	19,141	24,578	12,722	14,377	16,611	19,560
URBAN EMPLOYMENT (Thousands)								
Agriculture	385	296	168	0				
Manufacturing, Mining and Construction	2,290	3,117	4,665	7,256				
Petroleum	40	42	45	48				
Housing and Infrastructure	822	1,072	1,304	1,517				
Services	3,042	3,714	4,588	5,701				
Total	6,579	8,241	10,770	14,522				

SOURCE: NUPS

During the mid-1970's, the private sector was willing to hold these money balances and this reduced upward pressure on prices. By the late 1970's the inflation rate had risen to the point that real rates of return were, and continue to be, negative. Additional deficit financing can be expected to generate higher prices more quickly than was the case in the past. The government has announced that the 1981-1982 budget does not require deficit financing. This should go a long way toward reducing inflationary pressures; but it should be combined with higher bank interest rates to encourage a larger flow of funds into the banking system.

Inflation is probably the predominant short-run factor affecting private savings rates. Reducing the inflation rate should be an important government policy goal. Other policy changes that could contribute to higher savings rates are expenditure taxes, especially on luxury goods, and a floating unified exchange rate. The latter policy change would affect saving both by making luxury imports more expensive and by increasing the profitability of Egyptian firms selling in domestic and foreign markets.

Egypt needs to build up its industrial capital stock. The government policy is to encourage the private sector to contribute to this effort. In addition to the specific policy changes discussed above, the government must also establish a legal, administrative and economic environment in which citizens have enough confidence in the stability of public policies to make long-term investments in industry.

D. Macroeconomic Projections

Table III-28 contains the macroeconomic projections developed and used by the National Urban Policy Study Team. The methodology behind the projections can be found in the NUPS Status Report and the NUPS Interim Action Report. Tables III-29-32 are a compilation of projections prepared for other studies prior to the National Urban Policy Study. They are included here to provide an indication of the range of GDP growth rates that are thought to be reasonable for purposes of economic planning. The growth rates are 8.5 percent, 8 percent and 6.5 percent for the period 1975-2000. The growth rate of real GDP between 1975 and 1979 was 8.7 percent and the 1980-1984 Development Plan calls for a 10 percent growth rate. Combining the Development Plan estimates with the NUPS projections yields growth rates of 7 percent, for the high projection, and 5.5 percent for the low projection for the period 1980-2000. The various projections of the level of GDP in the year 2000 are not directly comparable as they have different base years and different price levels.

TABLE III-29
GROSS DOMESTIC PRODUCT & BALANCE OF PAYMENTS
1975 - 2000

	Actual	Official Projection	Harris Projection				
	1975	1980	1980	1985	1990	1995	2000
Gross Domestic Product	4,400	7,431	6,465	9,499	13,957	20,507	30,132
Annual Rate of Growth		11%	8%	8%	8%	8%	8%
Commodity Export	548	1,600	1,343	1,978	2,668	3,649	4,920
Percent to GDP	13	22	21	21	19	18	16
Commodity Import	1,539	2,564	1,874	2,270	2,744	3,507	4,386
Percent to GDP	35	35	29	24	20	17	15
Trade Balance 1/	-991	-964	-531	-292	-76	+132	+534
Receipts from Services	422	1,200					
Payments for Services	320	594					
Balance 2/	+102	+606	+164	+264	+425	+684	+1,102
Overall Balance on Current Account	-889	-358	-367	-28	+349	+816	+1,636

1/ Includes transfers.

2/ To grow at 10 percent after 1975.

SOURCE: Development Policy, Ports of Egypt, Frederic R. Harris, Inc. January. 1978.

TABLE III-30
ECONOMY OBJECTIVES PERIOD
1975 - 2000

Economy Sectors	Structure of GDP in the Period 1975-2000 (Millions LE)				Annual Rate of Growth
	1975	%	2000	%	%
1. Agriculture	1,327	29.0	2,613	8.4	3.1
2. Industry	863	13.8	6,985	22.5	9.0
3. Electricity	55	1.2	446	1.4	9.2
4. Petroleum	194	4.2	2,119	6.8	10.2
5. Construction	200	4.4	2,136	6.9	10.2
6. Distribution Sector	878	19.2	4,062	13.1	6.4
7. Service Sectors	1,062	23.2	12,722	40.9	10.5
TOTAL GDP	4,579		31,083		8.5

SOURCE: Red Sea Governorate Plan. Draft Final Report Vol. VII, October 1980.

TABLE III-31

PROJECTED OUTPUT AND EMPLOYMENT GROWTH FACTORS, 1975 - 2000

	High Economic Growth (6.5% pa)		Low Economic Growth (4% pa)	
	Growth of Production (pa)	Growth of Employment (pa)	Growth of Production (pa)	Growth of Employment (pa)
Agriculture	1.037	1.014	1.017	1.008
Industry and Mining	1.090	1.070	1.065	1.051
Petroleum 1/	1.090	1.027	1.065	1.020
Electricity	1.080	1.025	1.025	1.019
Construction	1.074	1.048	1.054	1.035
Transport	1.069	1.052	1.049	1.037
Commerce	1.056	1.035	1.039	1.023
Housing	1.056	1.019	1.039	1.012
Public Utilities	1.080	1.031	1.060	1.024
Other Services	1.056	1.031	1.030	1.017

1/ Same production growth rate assumed as for industry and same labour elasticity as for electricity.

SOURCE: Suez Master Plan Study, Final Report, Vol. 3, March 1976.

TABLE III-32

PROJECTED GDP AND EMPLOYMENT BY SECTOR, 1975 - 2000

Sector	1975		2000 High Economic Growth		2000 Low Economic Growth	
	GDP 1/ (LE M)	Employment (Millions)	GDP 1/ (LE M)	Employment (Millions)	GDP 1/ (LE M)	Employment (Millions)
Agriculture	1,173	4.26	2,909	6.04	1,757	5.19
Industry 2/	794	1.21	6,847	6.57	3,512	4.35
Petroleum	158	0.02	1,361	0.04	707	0.02
Electricity	57	0.04	390	0.11	206	0.07
Construction	245	0.58	1,460	1.86	601	0.99
Transport	184	0.43	976	1.52	635	1.07
Commerce	348	0.89	1,359	2.10	746	1.57
Housing	131	0.15	512	0.21	310	0.19
Public Utilities	16	0.04	110	0.09	66	0.08
Other Services	903	1.92	3,526	4.11	1,832	2.87
TOTAL	4,009	9.54	19,450	22.65	10,372	16.40

1/ At factor cost.

2/ Manufacturing and mining.

SOURCE: Suez Master Plan Study, Final Report, Vol. 3, March 1976.

IV. NATIONAL ECONOMIC SECTORAL PROFILES

A. Agriculture Sector

The interrelationships among economic sectors and the multiple (and sometimes competing) goals of government policy dictate that in designing a National Urban Policy one must be cognizant of the impacts urban and rural policies have on one another.

1. Historical Perspective

After the 1952 Revolution, Egypt embarked on major economic and social programs, many of which were directed at agriculture. Agriculture was expected to generate the surpluses and foreign exchange necessary to develop the industrial sector. Many of these agricultural policies were quite successful since output increased at the rate of 3.5-4.0 percent annually between 1955 to 1965.

A drastic reorganization was made in the country's economic system during this period. Controlled prices were established for major agricultural commodities and inputs. Production quotas were established for export crops. Government organizations were set up to distribute inputs, purchase requisitioned crops and produce protein foods under a subsidized price system. Many of these policies remain in effect today.

Growth began to falter in the 1960's. Between 1971 and 1974 USDA and FAO, using Ministry of Agriculture data, calculated an annual growth of 1.7 percent. From 1975 to 1979 increases in output averaged 1.6 percent. (Table IV-1) Crop yields have levelled off and agricultural imports are increasing in the face of continued population pressures.

2. Key Issues Under Discussion

a. Prices. The conventional wisdom among agricultural economists is that the system of controlled commodity prices and subsidies has distorted resource allocation in the agricultural sector through inappropriate price relationships. It is felt that phasing out subsidies and setting

prices at levels consistent with international trade would result in more efficient allocation of resources and therefore a major increase in agricultural production.

Others hold the view that no major production effect would result from such a restructuring of prices. This view holds that some adjustments in cropping patterns would result, but that overall productivity, cropping intensity and cropped area would change only moderately. The latter view is supported by the results of the Water Master Plan Model.

b. Water. Water is being overused leading to shortages in some areas and to increased waterlogging and salinity in soils. Productivity has been affected. Farmers complain about shortages of water and government limitations on rice land as evidence of an overall water shortage. No charge is made to farmers for use of irrigation water so they naturally would like to have as much water as possible to maximize the returns to their own land. However, the capacity of canals to deliver sufficient quantities of water for extensive cultivation is limited and there simply is not enough water available to grow large areas of rice in a desert climate. The Ministry of Irrigation Water Master Plan (WMP) Model shows shifts in the cropping pattern away from water-intensive crops such as rice and sugar cane, but overall productivity is only marginally affected when water is reduced in a simulation exercise. If there is a deficit of water it can largely be offset with adjustments in the cropping pattern and only modest losses in overall value of production.

c. Drainage. Inadequate soil drainage has caused a deterioration of yields due to waterlogging and salinity. In some areas installation of adequate drainage, along with other soil treatment, has led to increases in yield of up to 100 percent.

Extensive projects are planned or underway to provide drainage on an additional 2.1 million feddans by 1984. This would bring the total drained area to 2.3 million feddans or about half of the presently cultivated area which will eventually require drainage.

TABLE IV-1
NATIONAL GDP ESTIMATES AND FORECASTS
CONSTANT 1975 PRICES
(Million L.E.)

SECTOR	ACTUAL			PROJECTED					
	1975	1977	1979	1980	1990	2000	1980	1990	2000
Agriculture	1,469	1,480	1,564	1,603	2,240	3,135	1,603	2,052	2,627
Secondary	1,285	1,656	2,033	2,526	4,551	8,603	2,526	4,551	8,603
Tertiary	2,025	2,518	3,050	2,836	4,809	8,262	2,836	4,809	8,262
TOTAL	4,779	5,654	6,647	6,965	11,600	20,000	6,965	11,412	19,492
GROWTH RATES PERCENT PER ANNUM									
Agriculture		1.6			3.4			2.5	
Secondary		12.2			6.3			6.3	
Tertiary		10.8			5.5			5.5	
TOTAL		8.6			5.4			5.3	

SOURCE: Ministry of Planning and Information and SCRP; IADS Calculations. Cited in Suez Canal Region Integrated Agricultural Development Study -- Vol. 7, Chapter 1.

d. Labor. Labor was reported to be a constraint in agriculture even with the large labor pool in rural areas. This is said to be because of out-migration to other Arab countries. It is not clear whether this perceived shortage reflects unavailability of labor at current wage rates or at traditional wage rates since wages are reported to be rising in rural areas.

Projections of manpower which will be required for agriculture show an essentially unchanged level to the year 2000 (even assuming no change in technology) as is done in the WMP model.[1] Any increases in population in rural areas would represent surplus labor and a potential addition to migration to urban areas or overseas.

Any increase in real wages would lead to changes in cultivation techniques to reduce the amount of labor required thus increasing the amount of redundant labor and potentially further contributing to problems of urbanization by increasing migration outflows.

e. Land Availability. Egypt's major asset is its productive agriculture. However, high population growth and government policies have contributed to a situation where the land base on which agriculture depends is being threatened. People are leaving rural areas in large numbers and contributing to increasing urbanization which, in turn, is impinging on the agricultural land base.

Egypt's land area is officially estimated at 238 million feddans, but only 2.5 percent of this area is being cultivated. An estimated 5.9 million feddans are presently being cultivated along the Nile Valley and Delta Area. Per Capita cultivable land has decreased from 0.48 feddan in 1907 to 0.15 feddan in 1975. Each year an estimated 40,000 - 60,000 feddans of land are converted to non-agricultural uses. Thus, on the order of one percent of cultivated land is being transfered annually from agricultural production according to official data. However, preliminary analysis based on Landsat data indicate this may be overestimated.

Replacing lost value added in agriculture from urban encroachment will be difficult if not impossible. Capital costs of reclaiming new lands to replace disappearing old lands are high and increasing. Productivity of new lands lags behind old land. Costs of production on new lands are very high. These factors combine to cast doubt on the possibility of any net value-added resulting from new lands cultivation to say nothing of replacing the value-added from loss of old land. It is entirely conceivable that in excess L.E. 20,000 would have to be invested to replace the productivity lost from one feddan of old land being converted to urban use.*

The decline in cultivable surface area on a per capita basis is to some extent balanced by the fact that techniques of irrigation have changed because of the dam at Aswan. Areas which were tilled using basin irrigation, which relies on the flooding of the river, are now cultivated on a perennial basis. Where formerly one crop could be grown, now two or three crops can be grown. Thus, the effective land base has been increased.

f. Soil Classification. Government efforts to assess quality of the soil include a detailed soil classification survey. Soils are divided into six classes. Class I is considered to be excellent land with no major obstacles to cultivation. Class VI is uncultivable. Classes III and IV have severe limitations for crop production, particularly Class IV which requires special treatment to obtain moderate yields at relatively high cost. Over sixty percent of Egypt's old lands (the traditionally cultivated areas) fall in classes II and III. (Table IV-2 and Map IV-1)

3. Agricultural Sector Forecasts

Projections of agricultural performance into the future are hazardous at best.

a. Agriculture Share of GDP. The easiest and sometimes most reliable method of forecasting is to project past performance into the future and adjust it somewhat for qualitative judgment factors. Such was the approach used in calculations cited in Table IV-1.

Alternative forecasts of agricultural production up to the year 2000 were made assuming different rates of growth, as shown in Table IV-3. One set of projections to the years 1990 and 2000 incorporated a 3.4 percent growth rate in agriculture while the other set of projections used a 2.5 percent rate. The latter rate is probably more realistic given Egypt's recent performance in the 1.6 percent range and considering that almost no country has been able to consistently maintain a 3 percent growth in agriculture. In either case agriculture's share of GDP is expected to decrease from the present 24 percent to a 13-15 percent rate by 2000.

b. Self-Sufficiency in Food. A projection done by the Arab League on the degree of self-sufficiency in major food products shows an expected worsening of the agricultural position with Egypt increasingly becoming a major importer of most food products. (Table IV-3)

c. Zonal Forecasts. The first significant attempt to factor intra-regional differences was done by a joint USDA-Egyptian team in 1976. The country was divided into agronomic zones to facilitate analysis. (Figure IV-1) Data were gathered for each zone pertaining to soils, drainage, cropping patterns and requirements for water and labor. Using this

TABLE IV-2
SOIL SURVEY OF CULTIVATED AREAS (1973)

Class	Area (000 Feddans)	Percent
I. Excellent	360	6.2
II. Good	2,631	45.5
III. Medium	2,239	38.7
IV. Poor	556	9.6
	5,786	100.0

TABLE IV-3
FOOD PRODUCTS (SURPLUSES/DEFICIENCIES) AND SELF-SUFFICIENT RATIOS IN EGYPT IN 1975, 1980 AND 2000
(000's Tons)

Food Groups	1975 Surplus/ Deficit	1975 % Self-Sufficiency	1980 Surplus/ Deficit	1980 % Self Sufficiency	2000 Surplus/ Deficit	2000 % Self-Sufficiency
Total Grains	(3,520)	70.3	(4,629)	65.6	(10,154)	52.5
Wheat	(3,247)	39.3	(3,941)	33.8	(7,232)	26.9
Maize	(424)	86.9	(677)	82.5	(1,539)	73.7
Rice	151	106.3	39	101.5	(1,062)	75.0
Barley	-0-	100.0	-0-	100.0	-0-	100.0
Other Grains	--	100.0	(50)	93.9	(321)	73.3
Root Vegetables	65	108.2	84	107.6	51	103.5
Sugar	(172)	78.8	(141)	85.9	(325)	61.2
Legumes	(151)	69.6	(100)	82.5	(285)	69.3
Oils	(384)	27.4	(413)	31.9	(657)	27.5
Vegetables	120	101.8	113	101.3	50	100.5
Fruits	195	109.5	140	105.5	70	101.9
Livestock Production	(48)	89.7	(140)	77.1	(696)	50.1

SOURCE: Arab League, 1979.

* NUPS estimate based on reasonable parameters. Estimate is probably conservative due to costs of new land higher than L.E. 4500 assumed in example.

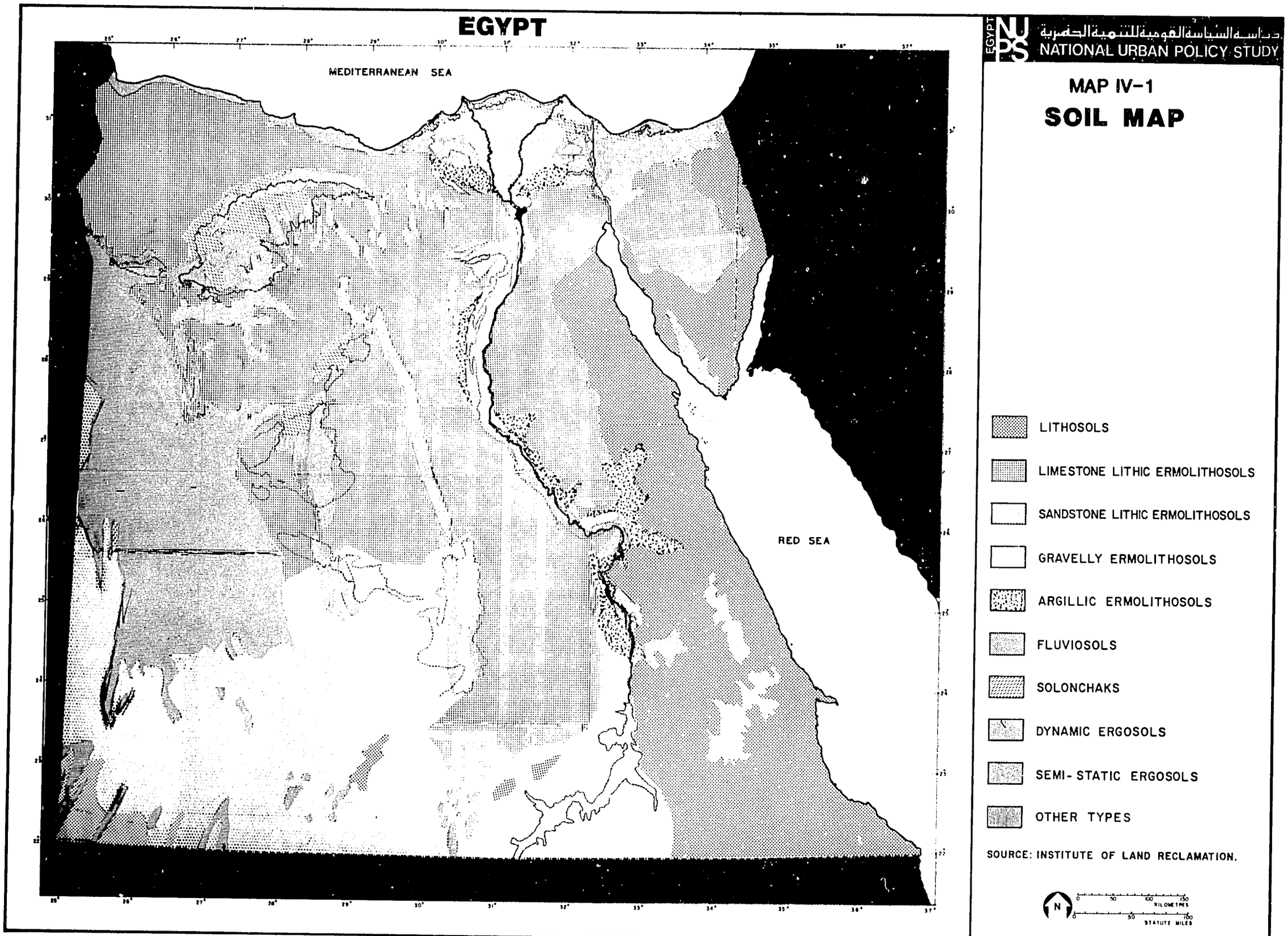
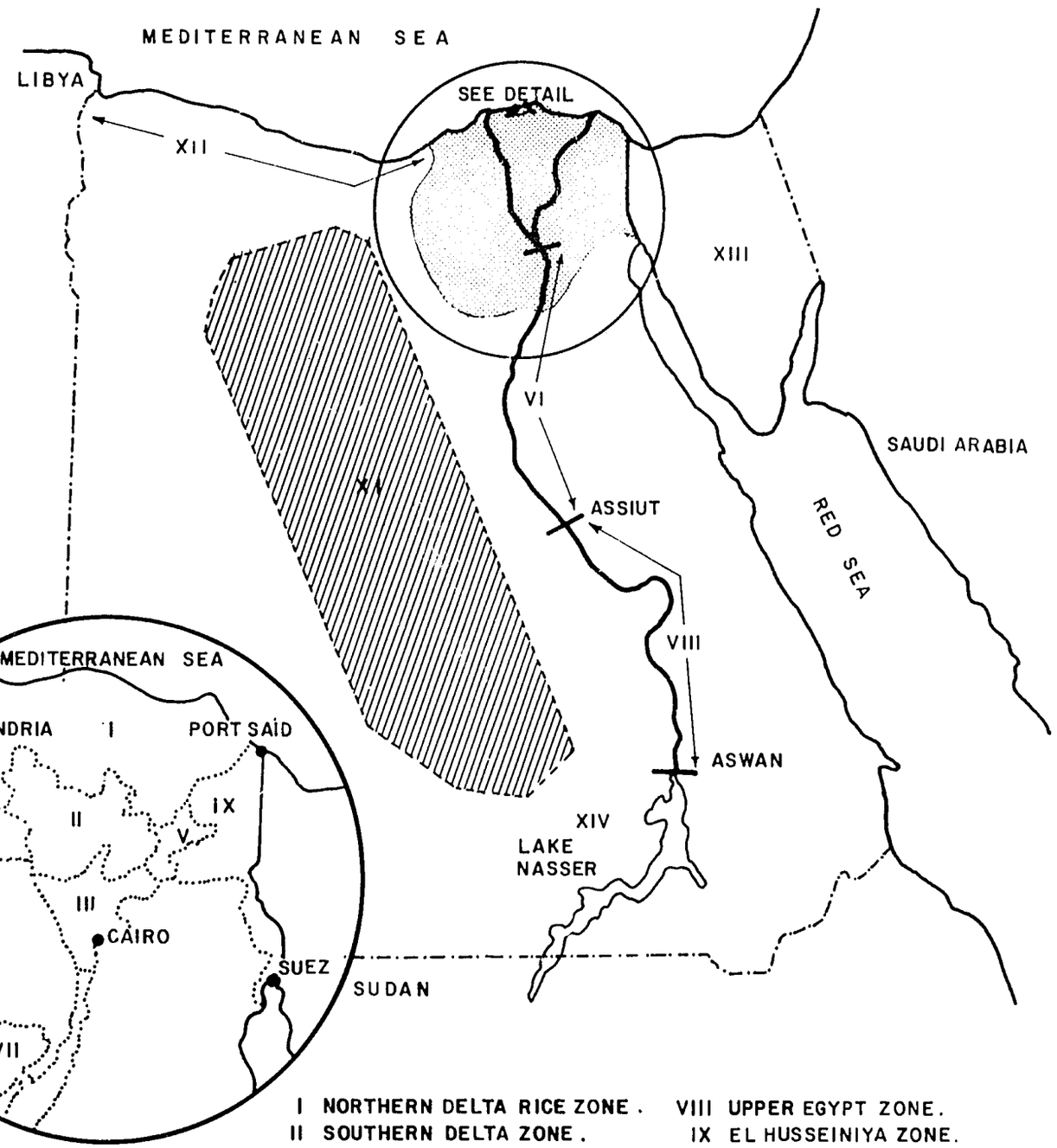

EGYPT
MEDITERRANEAN SEA
RED SEA
EGYPT NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY
MAP IV-1
SOIL MAP
LITHOSOLS
LIMESTONE LITHIC ERMOLITHOSOLS
SANDSTONE LITHIC ERMOLITHOSOLS
GRAVELLY ERMOLITHOSOLS
ARGILLIC ERMOLITHOSOLS
FLUVIOSOLS
SOLONCHAKS
DYNAMIC ERGOSOLS
SEMI-STATIC ERGOSOLS
OTHER TYPES
SOURCE: INSTITUTE OF LAND RECLAMATION.
N
KILOMETRES
STATUTE MILES

FIGURE IV-1

MAJOR AGRONOMIC ZONES



SOURCE:

MAJOR CONSTRAINTS TO INCREASING AGRICULTURAL PRODUCTION, PAGES 50 - 73

I NORTHERN DELTA RICE ZONE.
II SOUTHERN DELTA ZONE.
III CAIRO VEGETABLE ZONE.
IV WESTERN BORDER ZONE.
V EASTERN BORDER ZONE.
VI MID-EGYPT ZONE.
VII EL FAYOUM ZONE.
VIII UPPER EGYPT ZONE.
IX EL HUSSEINIYA ZONE.
X WEST ZONE.
XI NEW VALLEY ZONE.
XII WEST MEDITERRANEAN ZONE.
XIII SINAI ZONE.
XIV LAKE NASSER ZONE.

information as a base, projections of an alternative cropping pattern for 1985 were made which incorporated several goals for Egyptian agriculture for each zone.

Goals incorporated in the projections made through 1985 include:

i) Increase cotton and rice to the agronomic limits to provide foreign exchange earnings.

ii) Increase in the supply of roughage for livestock during the summer and Nili months.

iii) Expand areas devoted to sugar cane, lentils and horsebeans to achieve self-sufficiency.

iv) Expand production of vegetables and fruits for export markets. The goals reflect a continued tendency to treat agriculture as a resource to be exploited in the achievement of a longer goal — the generation of foreign exchange to finance industrialization. Therefore, the forecasts generated with these goals in mind will reflect reality only to the extent that rational agricultural policies are formulated which contribute to reaching the stated goals.

Projections for 1985 by agronomic zone are given in Tables IV-4 - 6.

i) No projections were made for "new lands" since there were numerous uncertainties concerning the rate of reclamation and productivity on reclaimed lands.

ii) Detailed examination of 1985 projections of cropping pattern in comparison to progress actually achieved in 1978 indicate that the area devoted to orchards, clover, wheat and maize is underestimated.

iii) Total land area is likely overestimated because of urban encroachment and other non-agricultural use. The projections show a decrease in land area of 65,000 feddans in the 10 years span of the projections.

TABLE IV-4
PRODUCTION OF SUMMER AND NILI CROPS ON OLD LANDS BY AGRONOMIC ZONES
(000 Feddans)

ZONE	1972 - 1974 AVERAGES								1985 PROJECTIONS									
	SUMMER					NILI			SUMMER						NILI			
							VEGETABLES			MAIZE							VEGETABLES	
	RICE	MAIZE	OTHERS	TOMATOES	OTHER VEGETABLES	MAIZE & SORGUM	TOMATOES	OTHERS	RICE	GRAIN	FODDER	OTHERS	TOMATOES	OTHER VEGETABLES	MAIZE GRAIN	SORGUM FODDER	TOMATOES	OTHERS
I	1,719	367	47	206	552	47	253	193	2,310	117	900	34	316	847	--	630	1,021	284
II	287	724	103	91	451	32	122	212	391	483	1,872	17	158	796	--	2,232	342	606
III	36	345	67	99	429	21	68	226	48	276	720	29	178	751	--	1,566	192	644
IV	56	62	9	--	317	14	14	17	74	43	--	5	--	561	--	612	40	46
V	130	91	16	24	50	6	29	9	171	27	450	2	50	83	--	630	71	25
VI	--	399	367	66	388	125	71	125	--	671	1,764	276	121	683	--	2,448	240	354
VII	30	18	45	--	91	97	106	13	33	177	180	87	--	166	--	900	300	41
VIII	--	95	414	--	117	52	28	22	60	158	1,224	331	--	205	--	3,402	80	58
IX	67	44	20	26	136	6	14	7	54	95	90	--	37	256	--	180	50	30
TOTAL	2,325	2,145	1,088	512	2,531	397	705	824	3,141	2,047	7,200	781	860	4,348	-	12,600	2,336	2,088

SOURCE: Egypt: Major Constraints to Increasing Agricultural Productivity.

TABLE IV-5
CROP AREAS ON OLD LANDS, BY SEASONS, IN AGRONOMIC ZONES
(000 Feddans)

ZONE	1972 - 1974 AVERAGE								1985 PROJECTIONS							
	PERMANENT CROPS	COTTON	WINTER	SUMMER	NILI	TOTAL	LAND AREA	CROPPING RATIO	PERMANENT CROPS	COTTON	WINTER	SUMMER	NILI	TOTAL	LAND AREA	CROPPING RATIO
I	56	514	1,521	1,122	103	3,316	1,691	1.96	66	529	1,614	1,085	155	3,449	1,680	2.05
II	52	341	907	610	64	1,974	1,005	1.96	60	391	930	539	154	2,074	990	2.10
III	64	69	376	303	58	870	436	2.00	75	79	345	266	166	931	420	2.22
IV	21	26	123	106	24	300	153	1.96	24	30	126	96	47	323	150	2.15
V	14	33	159	126	11	343	173	2.05	16	38	154	116	44	368	170	2.16
VI	56	343	845	498	144	1,886	1,072	1.76	71	393	994	601	197	2,256	1,065	2.12
VII	15	74	267	83	123	562	285	1.97	18	85	262	179	145	687	280	2.45
VIII	176	112	512	347	56	1,203	715	1.68	241	128	469	341	203	1,382	710	1.95
IX	8	12	120	103	14	268	137	1.96	9	27	126	99	19	280	135	2.07
	462	1,535	4,830	3,298	597	10,722	5,667	1.89	580	1,700	5,020	3,322	1,130	11,750	5,600	2.10

SOURCE: Egypt: Major Constraints to Increasing Agricultural Productivity.

iv) Based on the projected cropping patterns, labor requirements were computed. (Table IV-7) Peak labor requirements would increase little, if any, with the projected cropping patterns. The reason is that expanded crop production is likely to come during the winter and Nili.

d. Water Master Plan Forecasts. A very ambitious linear programming model of the agricultural sector has been developed in the Ministry of Irrigation Water Master Plan Project (WMP) in cooperation with the Development Research Center of IBRD in Washington. The country was divided into 15 canal command areas. (Table IV-8) Data for each command area were collected, including land area, water availability, labor, fertilizer, crop yields, pesticides, tractor services, livestock, nutrient requirements of livestock, etc. The model consists of over 1,000 equations which when solved, give optimal resource allocation within the assumed constraints. Thus, the projections developed for the years 1985, 1990 and 2000 are estimates of what ought to be rather than what actually will be under the constraints faced.

The assumptions which underlie these projections are as follows:

i) Water available for agriculture would be:

1980 - 30.0 billion m^3
1985 - 33.8 billion m^3
1990 - 34.5 billion m^3
2000 - 37.7 billion m^3

ii) Population will increase at the rate of 2.3 percent per year to reach 65 million in the year 2000. Demand for agricultural products will increase at a higher rate. Increases in demand will range from 2 percent for staples to 3 percent for textiles, meat and oilseeds.

iii) Fertilizer use will increase at 10 percent a year between 1978-1983 and will parallel the assumed growth rate in crop yields. Fertilizers use will double by the year 2000.

TABLE IV-6

PRODUCTION OF PERMANENT and WINTER CROPS ON OLD LANDS BY AGRONOMIC ZONES

(000 Metric Tons)

ZONE	1972 - 1974 AVERAGES									1985 PROJECTIONS								
	ORCHARD	SUGAR CANE	COTTON LINT	COTTON SEED	CLOVER	WHEAT	OTHER FIELD CROPS	VEGETABLES TOMA-TOES	VEGETABLES OTHER	ORCHARD	SUGAR CANE	COTTON LINT	COTTON SEED	CLOVER	WHEAT	OTHER FIELD CROPS	VEGETABLES TOMA-TOES	VEGETABLES OTHER
I	267	124	141	255	20,250	459	141	98	124	450	236	169	312	25,680	676	119	162	214
II	298	74	105	257	11,025	395	88	43	94	486	145	141	352	13,455	499	46	70	160
III	382	102	25	33	4,515	132	86	63	203	628	165	60	44	2,025	206	68	240	775
IV	126	--	6	11	1,350	20	34	6	7	203	--	8	15	780	31	59	23	27
V	70	--	10	17	1,705	55	22	26	17	123	--	14	24	1,290	62	44	103	61
VI	156	951	111	202	7,400	311	384	75	43	279	1,665	149	275	7,995	472	155	128	73
VII	62	--	18	33	2,730	93	44	51	7	107	--	24	45	2,130	140	56	171	29
VIII	51	6,085	40	70	2,680	291	289	37	18	102	10,591	55	95	2,880	218	581	151	72
IX	34	--	6	9	1,420	22	18	22	10	54	--	8	13	765	8	74	68	36
TOTAL	1,446	7,336	462	887	53,085	1,778	1,106	421	523	2,432	12,802	628	1,175	57,000	2,312	1,202	1,116	1,447

SOURCE: Egypt -- Major Constraints to Increasing Agricultural Productivity.

TABLE IV-7

PEAK LABOR REQUIREMENTS ON OLD LANDS

(1972 - 1974 AVERAGE)

Zone	High Month	Amount (Million Man Days)
I	June	27.75
II	June	13.77
III	June	5.23
IV	June	1.75
V	June	2.75
Total Delta	June	51.25
VI	Sept.	11.16
VII	Sept.	3.00
Total Mid-Egypt	Sept.	14.16
VIII	May	9.29
Total Upper Egypt	May	9.29
IX	June	1.87
Total Suez Area	June	1.87
GRAND TOTAL	June	12.32

SOURCE: Major Constraints to Increasing Agricultural Productivity.

iv) Land reclamation is optimistically assumed to be 180,000 feddans per year to 1996 when 2.8 million feddans would be reclaimed. A low assumption would be 50,000 feddans per year. Two-thirds of reclamation is assumed to take place in command area F (Suez and Sinai) and one-third in area N (west and South of Alexandria).

v) Crop yields are assumed to increase at the rate of 2.7 percent per year in the low case and 3.0 percent per year in the high case. Yields on new lands are assumed to be at 75 percent of old lands.

The equation in the model was solved for each of the six cases specified (Table IV-9) to the years 1985, 1990 and 2000. Results are presented in Tables IV-10, 11 and 12. Tables IV-13 and 14 show actual cropping patterns by Canal Command area and the year 2000 cropping patterns are projected by the WMP using international prices. The results are based on some perhaps unrealistic assumptions:

i) Increases in crop yields may be attainable, but given past performance they are highly unlikely. One would, therefore, conclude that the low estimate of 2.7

TABLE IV-8

CANAL COMMAND AREAS INCLUDED IN WMP MODEL

AREA	GOVERNORATE(S) INCLUDED
A	Aswan, Qena
B	Assiut, Sohag
C	Minia, Beni Suef
D	Cairo, Giza
E	El Fayoum
F	Ismailia
G	Qalyubia
H	Dakahlia
I	Faraskour
J	Menoufia
K	Kafr El Sheikh
L	Kafr Saad
M	Beheira
N	Nubaria
O	Alexandria

NOTE: The Canal command area corresponds directly to the governorate only in the case of Fayoum. All other command areas cross governorate boundaries and the governorate indicated is the primary area in which the Canal command lies.

SOURCE: Master Plan for Water Development and Use.

TABLE IV-9

SUMMARY OF CASES ANALYZED IN WMP AGROECONOMIC MODEL

Case	Annual Increase In Crop Yield	Annual Land Reclamation (Feddans)	Annual Rate of Urban Encorachment	Water Availability
1	2.7%	50,000	1%	As projected
2	2.7%	50,000	0	As projected
3	3.0%	180,000	1%	Less than projected
4	3.0%	180,000	0	Less than projected
5	3.0%	180,000	1%	As projected
6	3.0%	180,000	0	As projected

SOURCE: Master Plan for Water Development and Use.

TABLE IV-10

PROJECTIONS OF WMP MODEL TO THE YEAR 1985

(000 1978 EGYPTIAN POUNDS)

	1978 BASE	1985 LOW		1985 HIGH			
						Free Water	
		(1)	(2)	(3)	(4)	(5)	(6)
Gross value of production int'l prices	2,888,164	3,535,487	3,696,350	3,777,005	3,864,681	3,797,302	3,958,256
Value added int'l prices	2,066,518	2,566,694	2,671,620	2,697,480	2,777,779	2,703,219	2,809,817
Value added Egyptian prices	1,450,687	1,776,012	1,832,384	1,837,288	1,871,575	1,841,400	1,895,482
Land area (000 Feddans)	5,804	5,765	6,154	6,675	7,064	6,675	7,064
Cropping intensity	1.87	1.98	1.98	1.95	1.85	1.98	1.98
Consumptive use ($m^3 \times 10^9$)	30.000	30.820	32.543	33.8	33.8	34.329	36.070
Water shadow price (L.E./1,000 m^3)	26.54	-0-	-0-	13.8	17.03	-0-	-0-
Employment (000 man-months)	19,976	20,573	21,714	22,637	22,954	22,930	24,116
July diversion requirements (Area "F" $m^3 \times 10^9$)	208	645	661	1,548	222	1,823	1,829
July diversion requirements (Area "N")	455	578	609	1,064	1,096	1,064	1,096
N-Fert (000 tons)	434	932	1,019	1,105	1,105	1,131	1,216
P-Fert (000 tons)	139	275	285	287	297	287	298
Growth rate -- gross value production	—	2.95	3.60	3.90	4.25	4.00	4.60
Growth rate -- value added	—	3.10	3.70	3.85	4.35	3.95	4.50

SOURCE: Master Plan for Water Development and Use.

TABLE IV-11

PROJECTIONS OF WMP MODEL TO THE YEAR 1990

(000 1978 EGYPTIAN POUNDS)

	1978 BASE	1990 LOW		1990 HIGH			
						Free Water	
		(1)	(2)	(3)	(4)	(5)	(6)
Gross value of production int'l prices	2,888,164	3,975,350	4,255,118	4,411,637	4,554,807	4,494,677	4,736,516
Value added int'l prices	2,066,518	2,916,314	3,096,267	3,168,289	3,309,511	3,192,897	3,380,347
Value added Egyptian prices	1,450,687	2,004,847	2,104,928	1,126,998	2,200,037	2,147,269	2,245,112
Land area (000 Feddans)	5,804	5,740	6,404	7,308	7,964	7,308	7,964
Cropping intensity	1.87	1.97	1.98	1.87	1.68	1.97	1.98
Consumptive use ($m^3 \times 10^9$)	30.000	30.333	33.098	34.5	34.5	36.430	37.777
Water shadow price (L.E./1,000 m^3)	26.45	-0-	-0-	14.00	20.17	-0-	-0-
Employment (000 man-months)	19,976	20,357	22,176	23,420	23,485	24,382	25,467
July diversion requirements (Area "F" $m^3 \times 10^9$)	208	951	885	1,530	127	2,975	2,040
July diversion requirements (Area "N")	455	769	741	1,522	1,574	1,522	1,574
N-Fert (000 tons)	434	1,336	1,527	1,698	1,700	1,834	1,917
P-Fert (000 tons)	139	378	397	405	408	407	425
Growth rate -- gross value production		2.65	3.30	3.60	3.85	3.75	4.25
Growth rate -- value added		2.85	3.40	3.65	4.00	3.70	4.20

SOURCE: Master Plan for Water Development and Use.

percent increases in yield is better than the 3 percent figure.

ii) The assumption that urban land encroachment can be halted is unrealistic in view of continued land conversion despite legal constraints.

iii) Some sources familiar with progress in the Upper Nile Projects indicate an additional 2 billion m^3 of water will be available by 1985, but that further increments are unlikely to be available until the next century.

Case 1 (Table IV-9), therefore, is the most realistic.

4. Land Reclamation

a. Historical Perspective. Land reclamation or the development of previously uncultivated land has been viewed by the government as a means of raising agricultural output and providing employment. It also has taken on ideological overtones as it has been a part of the land tenure debate since the Revolution. As a result many of the decisions and strategies embarked on are more heavily weighed toward political, ideological and social considerations than to considerations of efficiency and the economic rationalizaton of policy. This is evident by a continued strong commitment to land reclamation in spite of repeated disappointments and very high costs associated with reclamation efforts in the last 25 years.

A program of land reform and land reclamation were embarked upon in 1952. The record in land reclamation in subsequent years has been uneven with various impediments being responsible for slower than anticipated progress. (Table IV-15)

In the 1951-1959 period, attention was focussed on several huge projects in which land would be tilled by large cooperatives and the produce processed at factories in project areas. The Tahrir "Liberation" Project was envisioned as

a social experiment which would be the nucleus of Egypt's new rural society.

Ambitious plans were announced for "horizontal expansion" or reclamation of 4 million feddans in the Nile Valley and 5 million feddans in the desert if sufficient capital could be raised. However, by late 1959, only 80,000 feddans had been reclaimed due to unfamiliarity with the land reclamation process, the 1956 Suez War and its financial impact, lack of organizational commitment to the program, and managerial inadequacies.

In the first five-year plan, 1960-1965, L.E. 150 million were set aside for reclamation-related projects. Concern with vertical expansion, particularly the installation of adequate drainage on the old lands, fell by the wayside.

Benefiting from the lessons of the 50's, more modest plans were made and results proved more satisfying. Projects tended to be smaller in size. The most successful efforts were in areas which were extensions of the Nile Valley. During the first Five-Year Plan period (1960-1965), approximately 530,000 feddans were reclaimed.

By 1970, only 47 percent of the land reclaimed was being cultivated. The cause of this was the tendency to try to meet specified targets of surface area reclaimed rather than being concerned with production on the land.

During the Second Five-Year Plan (1965-1970), a reorganization put the responsibility for cultivation of reclaimed land with a separate Authority in the Ministry of Reclamation. One million feddans were to be reclaimed during this period. In the 1965-1967 period, 169,000 feddans were reclaimed. The 1967 War brought reclamation almost to a halt.

A change in philosophy toward distribution of reclaimed land took place during the Second Plan period. Instead of giving new lands to many smallholders, lands were retained and run as state farms or leased to tenants. It was felt this change would result in more efficient use of economies of scale and mechanization. At the

TABLE IV-12

PROJECTIONS OF WMP MODEL TO THE YEAR 2000

(000 1978 EGYPTIAN POUNDS)

	1978 BASE	2000 LOW		2000 HIGH			
						Free Water	
		(1)	(2)	(3)	(4)	(5)	(6)
Gross value of production int'l prices	2,888,164	5,073,151	5,652,189	6,223,848	6,478,867	6,224,872	6,876,403
Value added int'l prices	2,066,518	3,968,599	4,463,235	4,840,554	5,110,773	4,842,273	5,403,974
Value added Egyptian prices	1,450,687	2,740,317	3,013,906	3,238,908	3,377,955	3,243,786	3,497,016
Land area (000 Feddans)	5,804	5,948	6,604	8,621	9,764	8,621	9,764
Cropping intensity	1.87	1.92	1.92	1.81	1.52	1.81	1.69
Consumptive use ($m^3 \times 10^9$)	30.000	29.107	34.168	37.7	37.7	37.923	40.391
Water shadow price (L.E./1,000 m^3)	26.45	-0-	-0-	11.8	21.21	-0-	-0-
Employment (000 man-months)	19,970	19,756	22,989	25,705	25,565	25,647	27,619
July diversion requirements (Area "F" $m^3 \times 10^9$)	208	1,314	1,133	3,172	135	3,370	1,624
July diversion requirements (Area "N")	455	913	1,294	2,442	2,532	2,442	2,532
N-Fert (000 tons)	434	1,790	1,566	1,992	1,960	1,991	2,093
P-Fert (000 tons)	139	331	364	393	396	393	432
Growth rate -- gross value production		2.5	3.10	3.55	3.70	3.55	4.05
Growth rate -- value added		2.95	3.50		4.20	3.95	4.45

SOURCE: Master Plan for Water Development and Use.

THE RATE OF RETURN FROM OLD LAND IS ROUGHLY TWICE THAT FROM RECLAIMED LAND

TABLE IV-13

1978 ACTUAL CROPPING PATTERN BY CANAL COMMAND AREA

(000 Feddans)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	TOTAL
Clover, Long	30.0	134.0	161.0	61.0	85.0	39.0	53.0	260.0	134.0	191.0	260.0	123.0	77.0	102.0	79.0	1,789
Clover, Short	9.6	102.0	76.4	8.0	29.0	6.5	29.1	174.8	69.8	105.6	124.0	89.3	61.5	33.6	52.8	972
Wheat	124.0	259.0	124.0	19.0	70.0	21.0	42.0	187.0	65.0	125.0	150.0	60.0	55.0	32.0	46.0	1,379
Barley	5.1	10.0	5.0	1.3	8.0	12.0	2.0	12.4	4.4	1.4	5.0	2.4	4.0	27.0	15.0	115
Horse Beans	15.0	71.0	62.0	--	19.0	3.0	3.0	15.0	1.0	5.0	13.0	2.0	8.0	11.0	11.0	239
Lentils	17.0	18.0	--	--	--	--	--	--	--	--	--	--	--	--	--	35
Other Legume	3.0	14.0	7.0	--	10.0	2.0	--	2.0	--	--	--	1.0	1.0	3.0	--	43
Flax	--	--	--	--	2.0	--	2.0	8.0	3.0	7.0	23.0	5.0	1.0	6.0	2.0	59
Onion	1.2	12.0	2.0	--	4.0	1.0	--	0.2	1.2	0.2	--	0.2	--	--	--	22
Tomato	8.0	8.0	8.0	14.0	14.0	11.0	4.0	14.0	0.2	3.0	8.0	3.0	2.0	4.0	10.0	113
Other Vegetables	3.0	3.0	12.0	18.0	1.0	7.0	22.0	16.0	3.0	7.0	5.0	2.0	5.0	13.0	10.0	107
Other	2.0	29.0	28.0	4.0	15.0	2.0	4.0	4.0	3.0	3.0	6.0	2.0	--	11.0	2.0	115
TOTAL WINTER	217.9	660.0	485.4	125.3	257.0	104.5	141.1	693.4	286.4	448.2	594.0	289.9	214.5	242.6	227.8	4,988
Rice	--	--	--	--	18.0	9.0	9.0	199.0	161.0	20.0	288.0	138.0	78.0	35.0	76.0	1,031
Maize	44.0	142.0	188.0	60.0	25.0	43.0	85.0	206.0	16.0	273.0	127.0	32.0	60.0	67.0	37.0	1,465
Sorgum	82.0	276.0	14.0	8.0	54.0	--	--	--	--	--	--	--	--	--	--	434
Ground Nut	22.0	4.0	--	3.6	1.0	13.0	1.0	5.0	--	0.2	--	--	1.0	2.0	--	53
Sesame	19.0	1.0	--	--	1.0	2.0	--	--	--	--	--	--	--	--	--	23
Onion	--	4.0	9.1	4.0	--	0.6	0.7	1.4	0.4	0.9	1.6	0.2	0.7	0.4	--	24
Potatoes	--	--	3.0	8.0	--	1.0	1.0	4.0	1.0	13.0	5.0	4.0	7.0	12.0	5.0	64
Tomatoes	--	5.0	6.0	8.0	1.0	6.0	13.0	18.0	5.0	5.0	8.0	7.0	4.0	11.0	11.0	108
Other Vegetables	8.0	15.5	34.0	24.5	15.0	26.0	19.0	15.0	5.0	15.0	13.0	10.0	14.5	51.5	23.0	289
Soya Bean	8.9	19.3	32.8	13.0	5.0	2.9	4.0	9.7	5.9	10.6	10.8	12.5	7.8	12.8	6.0	162
TOTAL SUMMER	183.9	466.8	286.9	129.1	120.0	103.5	132.7	458.1	194.3	337.7	453.4	203.7	173.0	191.7	158.0	3,593
Maize	50.8	24.2	129.4	38.0	78.0	17.9	5.8	47.3	24.2	12.6	18.0	13.0	5.3	23.5	8.0	493
Potatoes	--	1.0	5.0	13.0	--	--	1.0	1.0	1.0	16.0	2.0	2.0	3.0	9.0	8.0	62
Tomatoes	1.0	3.0	7.0	7.0	18.0	3.0	4.0	14.0	6.0	2.0	6.0	9.0	2.0	4.0	5.0	91
Other Vegetables	5.0	1.0	4.0	13.0	3.0	6.0	14.0	10.0	4.0	7.0	4.0	2.0	4.0	12.0	8.0	97
Other	0.7	3.2	--	2.8	--	0.5	2.1	3.2	0.5	6.0	2.8	1.7	1.3	1.6	1.6	28
TOTAL NILI	57.5	32.4	145.4	73.8	99.0	24.4	26.9	75.5	35.7	43.6	32.8	27.7	15.6	50.1	30.6	771
Cotton	--	172.0	141.0	--	54.0	7.0	28.0	175.0	79.0	111.0	176.0	85.0	74.0	34.0	52.0	1,188
Sugar Cane	198.0	27.0	12.0	2.0	--	--	1.0	1.0	1.0	2.0	1.0	--	1.0	1.0	1.0	248
Citrus	3.0	12.0	5.5	8.0	7.0	8.5	18.0	41.0	4.0	30.0	8.0	3.0	7.0	12.0	15.0	182
Dates	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other	5.0	15.0	5.0	10.0	10.0	10.0	7.0	11.0	3.0	12.0	5.0	5.0	3.0	31.0	9.0	141
TOTAL PERMANENT CROPS	206.0	226.0	163.5	20.0	71.0	25.5	54.0	228.0	87.0	155.0	190.0	93.0	85.0	78.0	77.0	1,759
Cultivated Area	414.3	784.0	582.5	137.3	299.0	123.5	184.0	746.0	303.6	497.6	661.0	293.0	238.0	287.0	252.0	5,804
Crop Area	645.5	1,385.2	1,091.2	348.2	567.0	257.9	372.9	1,455.0	603.4	984.5	1,271.2	614.3	488.1	562.4	493.4	11,140

SOURCE: Ministry of Irrigation, Water Master Plan.

same time it was felt that more employment could be created for agricultural laborers. It was also felt that an emphasis on export crops would result in higher foreign exchange earnings.

Between 1967 and 1978 the only major new project initiated was a 300,000 feddan area west of Nubariya. However, efforts were made to increase the efficiency of cultivation operations. Yields on state farms have been lower than those on plots given to small farmers. Therefore, distribution of 5 feddan plots to cooperatives for their members was undertaken in 1968. In 1975, farmers who had been leasing 5 feddan plots were gradually given ownership rights. In 1976, secondary school and college graduates began to receive 20 and 30 feddan farms, respectively.

Starting in 1979, the pace of reclamation activities again quickened with major infusions of new capital. Present plans call for the reclamation of 823,000 feddans between 1980 and 1984. Beyond this period, plans vary according to the source. The Ministry of Land Reclamation puts forth a goal of 2.8 million feddans by the year 2000. Sources within the Ministry indicate progress might be less.

The amount of land which has been effectively reclaimed is subject to some ambiguity. For some years it was asserted that 1.2 million feddans had been reclaimed. However, the 1977 figure is now set at 912,000 feddans. Only 770,000 feddans of this area are considered cultivable. Of the cultivable area, large areas either have not been brought into cultivation or have subsequently reverted to desert. Thus, no firm figures are available concerning the actual amount of land reclaimed. It has been stated that only about 60 percent of land having been reclaimed is actually under cultivation. A more realistic figure might be 460,000 feddans.[2]

There is a tendency to focus on land surface area as the sole measure of the land resource base. This is fallacious because land differs in fertility, availability of water, ability to retain water, location and many other characteristics. Land reclamation has been

TABLE IV-14

YEAR 2000 CROPPING PATTERNS WITH INTINTERNATIONAL PRICES WMP

(000 Feddans)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	TOTAL
Clover, Long	24	52	0	24	33	9	12	111	32	83	62	42	1	18	0	503
Clover, Short	0	0	0	0	0	0	44	0	0	0	0	0	66	9	66	185
Wheat	0	431	343	0	168	2,141	46	317	178	67	340	165	147	1,415	117	5,875
Barley	0	0	0	0	0	0	0	0	0	129	0	--	0	0	0	129
Horse Beans	154	0	0	0	0	237	0	0	0	0	0	0	0	0	0	391
Lentils	125	--	--	--	--	--	--	--	--	--	--	--	--	--	--	125
Other Legume	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Flax	--	--	--	--	0	--	0	0	0	0	58	0	0	0	0	58
Onion	--	--	0	--	0	--	--	--	--	--	--	--	--	--	--	0
Tomto	11	11	20	32	15	18	24	30	5	10	13	5	7	17	20	238
Other Legume	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Other	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
TOTAL WINTER	314	494	363	56	216	2,405	126	458	215	289	473	212	221	1,459	203	7,504
Rice	--	--	--	--	20	12	12	260	208	26	375	180	101	45	99	1,338
Maize	0	270	331	17	180	0	45	0	0	248	85	31	47	1,385	18	2,656
Sorgum	213	205	0	0	0	--	--	--	--	--	--	--	--	--	--	418
Ground Nut	2	4	--	4	1	18	1	7	--	0	--	--	1	2	--	40
Sesame	19	1	--	--	--	--	--	--	--	--	--	--	--	--	--	20
Onion	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Potatoes	--	--	--	0	--	32	0	--	10	0	10	17	0	0	0	59
Tomatoes	8	21	40	33	--	0	32	33	0	20	21	0	19	63	34	322
Other Vegetables	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Soya Beans	--	--	83	29	--	--	--	--	--	--	--	--	--	--	--	112
TOTAL SUMMER	242	500	454	82	201	62	90	300	218	294	481	228	167	1,495	151	4,965
Maize	0	0	0	0	0	0	0	173	0	0	0	0	0	0	0	173
Potatoes	--	--	--	33	--	--	0	--	0	0	--	--	0	25	0	58
Tomtoes	6	5	16	0	21	9	19	25	11	25	12	13	9	0	21	192
Other Vegetables	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
Other	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
TOTAL NILI	6	5	16	33	21	9	19	198	11	25	12	13	9	25	21	423
Cotton	--	204	147	5	82	39	52	191	75	129	162	70	55	84	67	1,362
Sugar Cane	100	77	9	47	--	--	--	--	--	--	--	--	--	--	--	233
Citrus	--	--	13	19	16	20	42	95	9	70	19	--	16	28	35	382
Dates	--	--	--	--	-	--	--	--	--	--	--	--	--	--	--	0
Other	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0
TOTAL PERMANENT CROPS	100	281	169	71	98	59	94	286	84	199	181	70	71	112	102	1,977
Cultivated Area	414	775	532	126	314	2,464	176	744	299	488	653	282	226	1,562	238	9,291
Crop Area	662	1,280	1,002	241	536	2,535	330	1,241	528	807	1,146	523	469	3,081	475	14,855
Land Area	414	784	583	137	299	2,764	184	747	304	498	661	293	238	1,607	252	9,764
Crop Intensity	160	163	172	175	179	92	179	166	174	162	173	178	197	192	189	152

SOURCE: Ministry of Irrigation, Water Mister Plan.

TABLE IV-15

RECLAMATION EFFORTS SINCE 1952

(000 Feddans)

Period	Land Development Authority	Desert Development Authority	Agrarian Development Authority	Total
1952-1960	74.4	4.3	-0-	78.7
1960-1965	391.2	83.5	61.7	536.4
1965-1970	195.5	64.9	15.5	275.9
1970-1975	21.0	-0-	-0-	21.0
TOTAL	682.1	152.7	77.2	912.0

SOURCE: Egyptian Land Reclamation Since Revolution.

justified as an integral part of the Food Security Program. However, it would be more rational to look at land as a multidimensional input into agricultural production. Quality of soil, number of crops per year which can be grown, crop yields, costs of production and value of crops raised are all valid indicators of land resources.

b. Costs of Land Reclamation. Estimates of the cost per feddan vary quite widely. The differences seem to arise from who has done the estimating, prices used, items included in the total figure, location of the reclamation area and the type of irrigation system to be installed. No single figure can be used on a per feddan basis, but representative figures can be quoted. (Table IV-16)

Costs were often grossly underestimated from the outset. Official estimates made in 1964 insisted the cost of reclamation would not exceed L.E. 165/feddan. A series of estimates increased this figure until the 1978-1982 Five-Year Plan stated the cost of reclaiming 912,000 feddans between 1954-1975 to have been L.E. 865 million, or L.E. 950 per feddan. A more realistic figure is probably in the range of L.E. 1880 per feddan. It should be noted that this figure is most heavily weighed by the huge reclamation efforts which went on during the period 1952-1967.

Figures provided by the government often omit infrastructure costs of roads, schools, housing and services in the areas to be reclaimed. The rationale being that these items would have to be provided even if the reclamation were not undertaken.

Another common practice is to cost the land reclamation with domestic prices rather than economic prices or opportunity costs which reflect the real cost to the Egyptian economy. Water is provided free to farmers and often no accounting price is included in reclamation cost estimates. The other major item often underestimated is the cost of energy for land levelling or pumping water.

Costs associated with bringing land into profitable productivity are often not included. government policy is that such costs are to be borne by the farmer and not the government. government is no longer bearing the cost of establishing communities (housing, public utilities, etc.) in new settlement areas since this practice involved considerable costs on a per feddan basis. Because of high costs of roads, utilities and other infrastructure government is limiting land reclamation projects to areas bordering existing lands in the Nile Valley.

All cost estimates for reclamation assume water is readily available and allot nothing to the cost of developing additional sources of water. As long as there is surplus water available this procedure is valid. However, Egypt is in the process of excavating Jonglei I Canal with the expressed purpose of providing more water for Egyptian agriculture. Jonglei I is expected to be completed in about 1985 and to provide annually an additional 2 billion m^3 of water for Egypt. Using an annual average figure of 5,000 m^3 per feddan of water for agriculture the project will provide enough water for an additional 400,000 feddans. A rough estimate of the cost of Jonglei I is L.E. 400 million. This would add an extra L.E. 1,000 per feddan to reclamation costs as the cost of developing the water supply.

Future costs of reclamation will increase as more remote land is developed. Costs of extending canals, roads and utilities into these areas will increase substantially.

Reasons for low productivity on new lands are[3]:

i) Only 58-60 percent of land reclaimed is actually being farmed,

ii) State company farms, which have been the dominant mode of implementing land reclamation, are quite inefficient,

iii) Government policy has vacillated on whether land reclamation should be through small or large scale farms,

iv) No experimental base has existed to design and implement reclamation projects on familiar sandy soils,

v) Frequent power outages, poor maintenance and poor operation have cut productivity in sprinkler operated areas,

vi) Production inputs have been in short supply,

vii) Agricultural extension is essentially non-existent in reclamation areas and credit is inadequate,

viii) State farms and agricultural graduates experienced serious labor shortages.

ix) Waterlogging and salinity are impairing productivity in some areas and in some cases new land is going out of production.

c. Plans for Future Land Reclamation. Constraints which are anticipated to limit either the rate or extent of land reclamation include land productivity, water, institutional capacity, and capital. Each of these will be dealt with separately, although interactions exist.

i) Productivity

One of the reasons reclaimed land productivity never matches the productivity of old lands is the poor quality of land being reclaimed. FAO conducted a survey of soils for prospective reclamation projects in 1964. Of the almost 14 million feddans surveyed only about 2 million feddans were considered suitable for reclamation. (Table IV-17) Of the reclaimable

TABLE IV-16

CAPITAL COSTS OF LAND RECLAMATION

Project or Source of Estimate	Cost/ Feddan	Comments
	L.E.	
West Nubariya Extension	4,200	Includes processing facilities which appear necessary to provide positive economic returns, costs are at Egyptian prices (some subsidized) will provide some vegetables and fruit for export (int'l prices).
Egypt Farms LTD (Pepsi)	1,660	Financial costs only
	(1,128 (1,871 ((2,072 (1,844	Sprinkler Manifold " Farmer Pomps Surface Irrigation Drip Irrigation Representative Figure only does not include cost of bringing land into marginal production.
North Salhia	3,698	The consultants have concluded that this Project will yield negative economic benefits.
Central Salhia	3,143	
South Salhia	4,143	

SOURCE: NUPS Working Paper, The Agricultural Resource Base: Status and Expectations, Weizemann, December 1980, p. 12.

TABLE IV-17

SOIL CLASSIFICATION OF POTENTIAL NEW LAND AREAS

	Soil Class	Area
I.	High Potential	88,000
II.	Good Potential	217,000
III.	Moderate Potential	605,000
IV.	Poor Potential	1,292,000
V.	Soils of Doubtful Suitability	5,729,000
VI.	Unreclaimed Land	5,590,000
	TOTAL	13,521,000

SOURCE: El-Tobgy, page 23.

land well over half was considered to be Class IV which required special soil treatment to obtain moderate yields at relatively high cost. Of 500,000 feddans of new lands presently producing crops about 70 percent are Class IV, 25 percent Class III and 5 percent Class II. The poor soil character has lengthened time required to achieve marginal production.

ii) Water

For extensive reclamation efforts to proceed it will be necessary to develop new sources of water. This can be done by increasing the efficiency of present water utilization and thereby increasing the effective water supply.

Estimates are that 50 percent of the current water supply is used inefficiently. This means that of the water available for agriculture only about half is actually consumed by crops. The remainder is lost through seepage and often ends up causing waterlogging and salinity problems. It is estimated that in a river system such as the Nile, efficiencies of up to 80 percent are possible.[4]

A second alternative for developing new sources of water is the Upper Nile Project. The Jonglei I Canal is presently under construction and should be completed by 1986. The projects envisaged for Jonglei II are expected to add an additional 7 billion m^3 to Egypt's share of the Nile. However, implementation of these projects seems remote because it would be necessary to have a Nile Basin Treaty which would include Ethiopia, Sudan, Kenya, Uganda and Zaire. Detailed engineering studies have not been done so cost estimates are not available. Construction would take over a decade for completion. As a result it will probably be in the next century that supplemental water might be available from Jonglei II.

iii) Institutional Constraints

Institutional constraints are those dealing with managerial capabilities at the project level and national level. At the project level there is a question whether a government agency or quasi-government company is an appropriate vehicle for carrying out land reclamation. Past delays in implementation and cost overruns have led to frequent reorganizations.

The government has at least tacitly recognized this problem and is now moving to a strategy heavily involving the private sector. The strategy for growth in the 1980-1984 period emphasizes that the role of government is to be limited to main canalization and drainage and that the cost of bringing new lands to above marginal productivity should be borne by the new farmers. Government investment in infrastructure is to be kept to a minimum.

Another innovation being tried is the joint venture. Two groups of privately managed large-scale agricultural organizations are presently in the process of reclaiming land and other joint ventures are forming. It is hoped that international companies will be able to transplant high technology desert agriculture to Egypt.

On the macro level, there is the potential problem of a lack of capable management if a number of large scale reclamation projects are undertaken. Past experience indicates smaller projects have been more successful than larger projects. If a number of larger projects are undertaken simultaneously, the national pool of managerial talent may be severely taxed.

iv) Capital

The major constraint to land reclamation in the near future appears to be capital. With capital outlays in the range of L.E. 2,000-4,000 per feddan, any large reclamation effort will be capital intensive. The Government officially projects reclaiming 823,000 feddans between 1980 and 1984. Using a figure of L.E. 2,000 per feddan, this represents an expenditure of L.E. 1,646 million. During this period only L.E. 1,000 million has been allocated for agriculture and land reclamation combined.

There will also be the additional cost of developing water supplies. All of the above projections are made on the assumption that sufficient water already exists to reclaim land. Jonglei Canal is expected to cost about L.E. 400 million. If the present irrigation structure is to be overhauled and revamped to conserve water, large amounts of capital will be needed.

5. Projections

Sources within the government indicate a realistic evaluation of soils shows a potential limit of over 2 million feddans. (Table IV-18) Of these, many feddans will have to be eliminated because the costs of cultivation exceed any potential value of output. If any land on which water has to be lifted substantially (over 20 meters) is ruled out, it eliminates almost all of the New Valley and Sinai. With all constraints considered, this leaves 1.5 million feddans available for reclamation in the Delta and along low lying edges of the Delta. This figure is an estimate because no satisfactory mapping of lands with soils and elevations has been done.

Water presently available would not be sufficient to reclaim 1.5 million additional feddans even with the completion of Jonglei I in 1985. Investments to reduce seepage from canals, to rebuild distributaries and to increase efficiency of water management may increase the efficiency of water use so that existing water allocations could be enough to irrigate 1.5 million additional feddans. However, capital requirements to do this would be substantial.

Perhaps the best estimate of the pace of land reclamation would be about 50,000 feddans per year. One half to two-thirds of this would be in the Sharkia, Salhia area west of the Suez between Port Said and Ismailia. The balance could be expected to be scattered with the largest area in the western Delta margin below Alexandria. It is also possible some inland lakes and marshes would be pumped.

6. Integrated Rural Development Program

Rural development in Egypt rests on two premises. The first involves reducing constraints on production at the local level so as to expand the production potential for a household, a village, or a region. The second involves developing an institutional capacity to optimize the flow of productive investments both with respect to achieving the optimal balance of local vs external (provincial, national, foreign) investments and optimizing the sectoral allocation of these investments.

Rural development consists of a system of self-sustaining productive investment, which maximizes the utilization of local resources (enhanced where necessary by external resources), leading to a level of rural production sufficient to support an equitable and acceptable level of rural welfare.

Rural life is characterized by a great deal of illiteracy, unemployment, a low standard of living, malnutrition and poor hygienic status as compared to urban areas. All these factors need to be improved.

TABLE IV-18

PLANNED PACE OF LAND RECLAMATION ACTIVITIES UNTIL YEAR 2000

AREA	1980	1981	1982	1983	1984	TOTAL 1/ 1980-1984	TOTAL 1/ 1980-2000
Suez	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	40,000
North Sinai	1,500	1,000	1,000	1,000	1,000	5,500	
South Sinai	1,000	1,500	2,500	1,000	1,000	7,000	735,000
Port Said	0	0	15,000	20,000	35,000	70,000	90,000
Ismailia	8,000	12,750	17,000	12,000	5,000	54,750	19,000
Sharkia	15,000	19,500	5,000	28,200	25,000	91,700	592,000
Dakahlia	5,000	7,000	8,000	8,000	16,000	44,000	29,000
Damietta	4,000	4,000	6,000	6,000	0	20,000	77,500
Kafr El Sheikh	11,000	6,000	4,400	7,500	8,000	35,900	143,400
Alexandria	0	10,000	35,000	15,000	0	60,000	N.A.
Beheira	24,500	21,000	18,000	14,000	9,000	86,500	106,000
Marsa Matruh	12,500	11,000	15,000	31,000	43,000	112,500	297,000
Giza	2,000	7,000	9,000	11,000	16,000	45,000	59,000
Beni Suef	0	0	2,500	2,500	0	5,000	14,000
Minia	4,000	4,000	4,000	4,000	4,000	20,000	16,700
Fayoum	0	5,000	5,000	5,000	10,000	25,000	70,000
Assiut	0	2,000	2,000	1,000	0	5,000	5,000
Sohag	0	3,000	43,000	5,000	6,000	18,300	13,000
Qena	6,700	10,100	9,600	6,300	0	32,700	43,500
Aswan	2,500	3,500	6,000	6,000	5,000	23,000	102,000
New Valley	2,500	8,300	13,000	15,500	21,000	60,300	375,000
TOTAL	100,200	135,650	221,000	200,000	205,000	822,150	2,827,100

1/ It is believed that the total 1980-2000 includes figures in total 1980-1984, but there are obvious discrepancies.

SOURCE: NUPS Working Paper, The Agricultural Resource Base: Status and Expectations, Weidemann, December 1980, p. 28.

The government has laid great stress on rural life in Egypt. A national work program was sanctioned by the National Conference in July 1971. It stressed that the foundation in the construction of the new state lies in the attention given to a modern Egyptian village.

It stressed the importance of the Egyptian villager, whose development can only be achieved through the setting up of new human and social relationships in the countryside. It proposed that a comprehensive plan for rural development should be made for the coming twenty years to achieve rural industrialization, agricultural automation, creation of new villages with proper hygienic housing systems where water and electricity are available as well as educational, medical and recreation services.

Hence, rural development is to achieve the following:

i) Individual growth through education, proper upbringing, medical care and cultural orientation. This can be achieved by increasing the number of nurseries and schools, adult education with stress on literacy programs, and by providing for professional care and experienced staff to help in mental and social adaptation. In addition, maternal child care and preventative disease programs should be implemented as well as the establishment of hospitals.

ii) Social change through providing sanitary houses with running water, and by provision of family planning programs.

iii) Raising the standard of living through local development programs and getting benefit of new technology in agricultural and economic activities.

a. Obstacles Confronting Rural Development. Rural development faces the following problems:

i) Deep-rooted traditions which hinder the adoption of new approaches in production.

ii) The lack of social awareness among local community members which results in a limited outlook and little participation in solving problems.

iii) Population pressures which are linked with the inequities in land distribution. These result in low economic and social standards of living which have accelerated migration to the cities, particularly among educated rural youth.

iv) Services are mainly located in the central villages with the result that the 23,000 villages, inhabited by approximately half of the rural population, are deficient in public services or are reached irregularly due to difficulties of transportation and shortage of professional workers prepared to live in these villages.

v) Although education has long been free and compulsory for children between six and twelve, not all school age children go to school, resulting in enrollment rates that are always higher in urban areas than in rural, and higher for boys than for girls. This is due to a lack of economic means, and the pattern of Egyptian agriculture which requires child participation in field work.

vi) Large family size, with five or more children and a shortage of effective family-planning measures affects economic, health, and nutritional conditions of rural families — additionally, the prevalence of diseases such as bilharziasis, ancylostomiasis, and trachoma, are widespread and increasing because of inadequate sanitary facilities.

b. **Role and Organization of ORDEV.** Because areas of rural development are within the realm of several ministries, a coordinating system was needed to initiate an integrated program for rural development between ministries and the local executive organs involved. For that reason a declaration was issued in 1973 to establish the "Organization for Reconstruction and Development of Egyptian Village (ORDEV)" headed by a Vice Minister for Local Government. (See Part Five of this report)

c. **Field Experience of the Rural Development Plan.** Field work started in 1972. Seventeen villages were selected in fifteen rural governorates.

These seventeen villages were assisted in completion of the minimum services and utilities which cover the rural society's requirements. The programs initiated by ORDEV included execution of social and economic development projects as well as physical development projects which included village planning and housing improvement. The State bears 20 percent of the rural dwelling cost and the beneficiary makes a "downpayment" (which in most instances is equal to the value of the compensation due to him for his previous house). The balance, which amounts to sixty percent, is payable over 20 years in annual installments and is interest-free.

In the second phase, the base was expanded by selecting a village at each administrative markaz (district) where basic services are provided (health-social-agricultural-educational) in addition to the provision of water and electricity. The development projects were carried out on the same lines followed in the seventeen villages in the first experimental stage.

A new system was carried out in rural housing; the villagers themselves participated in construction with the aid of local contractors in order to bring down the cost. The development projects likewise included activities such as earthfilling of ponds or transforming them into fisheries.

d. **Local Resources.** In order to boost the material potential of villages' local councils, a special account to be financed from local resources has been set up to contribute to village development projects. According to Articles 69 and 70 of Law No. 43 of 1979, the Executive Committee of the Village Council undertakes management of the special account.

B. Manufacturing Industries

1. Introduction

Manufacturing industries have become an important sector of the Egyptian economy. Over the period 1952-1976, the sector's contribution to GDP has increased from 15 percent to 25 percent and its share in total national employment increased from 8 percent to 13 percent. The sector's contribution to net foreign earnings also increased more than five-fold, from 9.6 percent in 1952 to 48 percent by 1976.

Egypt is relying on growth in this sector for a major contribution to development over the next 20 years. Table IV-19 indicates that by the year 2000, the industrial sector's contribution to GDP is expected to increase by 7.69 times from its 1975 level. This implies an annual growth rate of 9.0 percent. This target might be difficult to achieve, especially if the agricultural sector is expected to grow at only 2.7 percent per annum. (Table IV-20) The nature of the industrial mix in Egypt and the importance, particularly of agro-based industries, food processing and textiles, suggests that agriculture and industry should grow simultaneously or that a significant change in the industrial mix must occur. In 1973, these two industries accommodated 55 percent of the total manufacturing employment and generated 45.8 percent of the sector's net value added.

a. **The Industrial Mix.** Egypt's capital goods industries are still in an early stage of development as the industrial mix favors consumer industries. Based on the Census of Industrial Production for the second quarter of 1977 (for all manufacturing establishments employing 25 or more workers) (Table IV-21), the share of food processing, beverages, tobacco, textiles and wearing apparel (ready-made clothes and shoes) in total manufacturing employment amounts to 407 thousand, representing 55 percent of the manufacturing sector total employment.

These industries share in the total manufacturing wage bill and gross output amounts to 50.9 and 55.79 percent, respectively. Employment in essential intermediate goods such

as chemicals, paper, petroleum, metallics, building material and iron represented only 31.9 percent. The share of machinery, means of transportation, scientific equipment in the sectors employment and output amounts to only 8.6 percent and 9.8 percent, respectively.

TABLE IV-19
SECTORAL TARGETS IN TERMS OF THEIR CONTRIBUTION TO GDP BY YEAR 2000
(In Million L.E. at 1975 Prices)

	1975	%	2000	%	Annual Growth Rate (%)
Agriculture	1,327	29.4	2,613	8.4	2.7
Industry	803	17.8	6,985	22.5	9.0
Electricity	55	1.2	446	1.4	8.7
Oil, Fuel, Nuclean Power	194	4.2	2,119	6.8	11.2
Construction	200	4.5	2,136	6.9	9.9
Distribution	878	19.4	4,062	13.1	6.3
Services	1,062	23.5	12,722	40.9	10.4
TOTALS	4,519	100 %	31,083	100 %	

SOURCE: The Role of Metallurgical Industries in the Industrialization of Egypt. GOFI, 1980.

TABLE IV-20
EGYPT: INDUSTRIAL GROWTH RATE, 1968-1978

YEAR	ANNUAL RATE OF GROWTH
1968-1969	9.8%
1969-1970	6.4%
1970-1971	10.7%
1971-1972	1.0%
1973	(-0.4%)
1974	3.8%
1975	11.9%
1976	14.0%
1977	13.7%
1978	12.1%

SOURCE: Arab Republic of Egypt, Ministry of Planning, as cited in Khalid Ikram, Egypt: Economic Management in a Period of Transition (World Bank, Johns Hopkins Press: 1980), p. 37 and Statistical Appendix, Table 8, pp. 402-403.

b. Changes in the Composition of Industrial Output. Changes in the composition of the industrial output can be depicted by tracing industries value-added over time. It would have been desirable to compare 1971 and 1977 Census of Industrial Production data. However, changes in definition and size of establishment covered make this impossible. Instead, 1970 and 1975 value-added data from the World Bank are used to assess growth. (Table IV-22)

TABLE IV-21
MANUFACTURING INDUSTRIES, ESTABLISHMENTS, EMPLOYMENT, WAGES AND GROSS OUTPUT
(Second Quarter of 1977)
(In 000 L.E.)

Industry	No. of Establishments	No. of Workers	Total Wages	Gross Output
Food proc. bev.	793	106,609	9,168	158,825
Tobacco	22	14,762	2,021	81,385
Spinning & Weaving	493	276,540	29,076	146,693
Ready-made Clothes	39	2,557	152	1,483
Leather & Shoes	50	6,582	787	6,648
Wood & Cork Furniture	74	11,970	1,344	7,372
Paper & Paper Products	30	13,291	1,374	13,420
Printing & Publishing	48	12,059	2,152	9,720
Chemicals	97	60,801	8,184	70,942
Oil Refinery	7	10,900	1,831	8,429
Oil & Coal Products	7	4,795	812	16,938
Rubber & Plastic	32	10,434	1,127	10,549
Clay, China, Glass Construction Mat.	322	37,609	4,107	27,650
Iron & Steel	30	11,840	6,158	42,918
Basic Non-Ferrous Metals	6	11,840	1,601	15,585
Metallic Products other than machinery and equipment	155	27,216	3,032	19,528
Non-electric Machinery	54	13,407	1,734	15,295
Electric Machinery	25	22,308	2,681	23,800
Transport Equipment	25	27,341	3,409	30,169
Scientific Equipment	3	232	21	80
Miscellaneous	9	747	75	620
TOTAL	2,321	717,388	80,846	708,049

SOURCE: CAPMAS, Census of Industrial Production, Second Quarter.

c. Spatial Location of Industrial Activities. One of the main features of industrial activity in Egypt is the imbalance in its spatial distribution. In 1977, the two largest urban centers, Cairo and Alexandria, were the location of 1,122 of the manufacturing establishments (25 + workers). Their employment represented 47.7 percent of the total national manufacturing employment. (Table IV-23) The heavy concentration of the large scale manufacturing industries in Cairo and Alexandria does not appear to have changed significantly since early industrialization efforts in Egypt. In 1947, Cairo and Alexandria had 33 and 20 percent of the total manufacturing employment in Egypt, respectively; in 1960, 30 and 16 percent.[5]

The concentration of manufacturing industries in these two largest urban centers would have been even greater were it not for the

TABLE IV-22
MANUFACTURING SECTOR
GROSS VALUE-ADDED IN 1970 AND 1975
(In 000 L.E.)

	1970	1975	Absolute Change	Annual Growth Rate
Food Processing & Beverages	109.4	152.0	42.6	6.8
Tobacco	14.2	27.7	13.5	14.3
Textiles	120.9	168.0	47.1	6.8
Wearing Apparel	22.9	50.7	27.8	17.2
Wood	15.8	18.7	2.9	3.4
Furniture	--	--	--	--
Paper	9.8	22.0	12.2	17.5
Printing & Publishing	14.5	18.5	4.0	5.0
Leather	4.9	9.8	4.9	14.8
Rubber & Plastic	5.4	9.2	3.8	11.2
Chemicals	54.9	96.3	41.4	11.8
Petroleum	11.2	23.9	-35.1	-16.0
Non-metallic	23.5	40.1	16.6	11.2
Basic Metal	23.9	52.2	28.3	17.0
Metallics	16.6	28.0	11.4	11.0
Non-electric Machinery	6.4	10.0	3.6	9.3
Electric Machinery	16.9	33.2	16.3	14.5
Transport Equipment	14.9	32.3	17.4	16.7
Miscellaneous	30.4	56.0	25.6	13.0
TOTAL	516.6	800.7	284.1	

SOURCE: World Bank Report.

widely spread agricultural crops, mainly sugar cane and cotton. Both lose a considerable amount of their weight through the processing stages. In consequence, the spatial pattern of food processing and textiles industries are widely dispersed throughout the country in close proximity to sources of raw material. It seems then that locational advantages based on wage differentials, proximity to other firms or labor pools have not proved to be as substantial as transportation cost differentials.

TABLE IV-23
SPATIAL DISTRIBUTION OF INDUSTRIES, EGYPT
(Second Quarter, 1977)

Governorate	Number of Establishments	Employment	Average Size	Total Wages in 000 L.E.	Gross Output in 000 L.E.
Cairo	784	188,672	241	22,633	198,267
Alexandria	338	157,086	464	16,860	144,877
Port Said	11	5,178	471	522	5,879
Suez	8	11,262	1,408	1,870	1,778
Damietta	22	8,705	396	784	5,661
Dakahlia	81	17,017	210	1,788	13,335
Sharkia	87	11,077	127	996	9,494
Qalyubia	231	91,123	394	10,278	77,641
Kafr El Sheikh	38	2,412	63	170	5,011
Gharbia	144	69,174	480	8,167	50,724
Menoufia	48	11,370	237	1,448	7,911
Beheira	101	41,388	410	4,567	29,087
Ismailia	4	1,687	422	321	1,865
Giza	266	52,245	196	6,071	109,725
Beni Suef	23	4,547	198	312	2,481
Fayoum	34	4,360	128	304	2,643
Minia	28	9,215	329	271	6,398
Assuit	25	3,611	144	250	3,997
Sohag	26	3,149	121	250	3,761
Qena	22	20,776	944	2,166	19,678
Aswan	20	11,174	558	1,086	11,211
Boarders	13	9,263	712	2,799	105,763
TOTALS	2,354	734,491	312	84,413	817,187

NOTE: Discrepancy between the totals in Tables IV-21 and IV-23 is due to the inclusion of extractive industries in data presented in Table IV-23 but not in Table IV-21. The extractive industries total establishments amounts to 33, with total employment of 17,103 and total wages, gross output of 3,567 and 109,138 thousand Egyptian Pounds, respectively.

2. Identification of Regional Growth Industries

This section examines the spatial location of basic manufacturing industries among regions.

Basic industries are defined as those with employment levels exceeding the levels necessary to satisfy local demand, thus selling a portion of their products outside their regions' boundaries. These sales bring salaries into the region, and a portion of this revenue is in turn expected to have a further impact on local income and employment. The continuous growth of these industries usually propel the general urban growth. In identifying basic industries in each region, the Location Quotient* was used. This technique compares the concentration of regional employment in a specific manufacturing industry with the same measure at the national level.

The Location Quotients are calculated for 21 industries using 1973 employment figures. These data include all public and private sector industries employing 10 workers or more.[6] They represent the most recent available industrial employment data at the governorate level. The employment and the net value-added figures for all manufacturing industries by governorate are presented in Table IV-24. The distribution of these totals among governorates and industries are presented in Table IV-25 and 26, respectively. The calculated location quotients are presented in Table IV-27.

Table IV-24 indicates that Cairo ranks first in terms of its share in employment and net value-added, followed by Alexandria. The share of these two urban centers in total manufacturing employment and net value-added amounted to 50 and 55.1 percent, respectively. It is also clear that most of the manufacturing

* Location Quotient $= \dfrac{E_{ij} / E_j}{E_{ik} / E_k}$

Where
E_{ij} = Regional employment in industry i
E_j = Regional employment in all manufacturing industries
E_{ik} = National employment in industry i
E_k = National employment in all manufacturing industries

If L.Q. exceeds unity the industry is assumed to be basic. Conversely, if it is less than one, imports from other regions are necessary to satisfy local demand.

TABLE IV-24
SPATIAL DISTRIBUTION OF EMPLOYMENT AND VALUE-ADDED AMONG MANUFACTURING INDUSTRIES, 1973

Governorate	Employment	%	Rank	N.V.A.[1]	%	Rank
Cairo	201,886	26.8	1	137,595	30	1
Alexandria	163,886	23.2	2	115,141	25.1	2
Giza	49,406	7.0	5	38,654	8.4	4
Qalyubia	82,867	11.7	3	60,266	13.1	3
Beheira	41,704	6.0	6	26,536	5.8	6
Dakahlia	13,272	1.9	7	8,140	1.8	7
Gharbia	63,103	9.0	4	33,732	7.4	5
Menoufia	11,443	1.6	9	5,559	1.2	9
Kafr El Sheikh	3,224	0.3	19	3,335	0.7	14
Sharkia	8,927	1.3	10	6,320	1.4	8
Damietta	8,232	1.2	13	4,861	1.0	10
Fayoum	5,132	0.7	16	1,548	0.3	17
Beni Suef	4,584	0.6	17	1,682	0.4	16
Minia	9,448	1.3	11	3,657	0.8	13
Assuit	7,849	1.1	14	1,467	0.3	18
Qena	12,581	1.8	8	4,717	1.0	11
Sohag	3,720	0.5	18	1,781	0.4	15
Aswan	8,411	1.2	12	3,793	0.8	12
Matruh	5	--		-5	--	
New Valley	26	--			--	
Red Sea	--	--		--	--	
Suez	5,659	0.8	15	-314	--	19
Ismailia	97	--		22	--	
Port Said	126	--		-7	--	
Sinai	--	--		--	--	
TOTAL	705,588	100 %		458,480	100 %	

[1] Net value-added in thousand L.E.

SOURCE: Data compiled from the Statistical Indicators of the Planning Regions, CAPMAS, 1978 (Six Volumes).

industries are concentrated in two geographical zones in Egypt: Cairo, and its adjacent Giza and Qalyubia, makes up the first zone; Alexandria and Beheria makes up the second. The two zones account for 74.7 percent of total manufacturing employment and 82.4 of the sector's net value-added. Outside these two zones, the other significant industrial centers are limited to Gharbia with textiles and chemicals representing its industrial base and Aswan with its fertilizers and sugar industries.

There seems also to be a high correlation between the spatial location of manufacturing employment and spatial generation of manufacturing net value-added. The ranking of governorates by their percentage contribution in the manufacturing sector net value-added and employment shows a very high correlation.

3. Governorates with Industrial Employment above the National Average

a. Cairo. There seems to be wide mix of industries in Cairo, with a density coefficient of 0.95.* The industries with the highest average net value-added per worker are found to be chemicals, metallics, and non-electrical machineries. The governorate's basic consumer oriented industries are clothes, leather and shoes, wood and furniture. The over-representation of these industries in Cairo is attributed, but not limited to, the comparative advantage of Cairo's close proximity to many of the Delta and northern Upper Egypt governorates, the access of these industries to semi-processed inputs and the wide diversification of the city's skill mix.

The basic intermediate industries are printing and publishing, basic iron and steel products in Helwan and Mansoura, metallic industries (mainly aluminium, copper sheets and metallic furniture), construction material (mainly glass in Cairo, cement and gypsum in Helwan, Tourah and Tebbin, red bricks in Nasr City). The

* Density coefficient = $\frac{\text{No. industrial sub-sectors in given governorate}}{\text{Total no. existing national industrial subgroups}}$

TABLE IV-25
DISTRIBUTION OF MANUFACTURING INDUSTRIES EMPLOYMENT
(By Governorate, 1973

	CAIRO	ALEXANDRIA	GIZA	QALYUBIA	BEHEIRA	DAKAHLIA	GHARBIA	MENOUFIA	KAFR EL SHEIKH	SHARKIA	DAMIETTA	FAYOUM	BENI SUEF
Food Processing	23,744	21,980	14,230	5,040	6,020	4,478	3,732	1,413	2,027	3,972	1,117	1,461	1,109
Tobacco	238	2,091	8,373	--	343	335	255	1,330	--	166	10	22	--
Spinning & Weaving	30,517	66,614	8,042	41,270	26,209	6,400	49,125	7,582	758	3,569	5,941	2,970	3,286
Ready-Made Clothes	7,018	1,034	24	--	--	22	--	--	--	--	10	--	--
Leather & Shoes	5,813	5,462	--	--	11	41	161	--	--	--	213	10	--
Wood, Cork, Furniture	4,330	1,688	1,057	578	193	945	123	73	92	17	739	38	14
Paper & Paper Products	1,134	9,821	72	1,363	--	15	11	--	--	--	12	--	--
Printing & Publishing	15,040	721	45	--	29	28	170	--	--	--	--	--	--
Chemicals	12,819	5,999	4,158	5,946	7,414	58	7,683	--	--	--	--	--	8
Oil Refinery	--	4,476	--	3,368	--	--	--	--	--	--	--	--	--
Oil & Coal Products	3,385	165	--	204	--	--	--	--	--	--	--	--	--
Rubber & Plastic	2,697	3,401	479	2,501	--	--	524	--	--	--	--	--	--
Clay, China, Const. Material	14,383	3,668	3,417	9,929	1,339	304	556	1,029	253	773	176	388	94
Iron & Steel	22,742	542	37	5,822	--	--	122	--	--	114	--	--	--
Basic Non-Ferrous Metals	2,362	6,155	--	--	--	--	44	--	--	--	--	--	--
Metallic Products (other than machinery & equipment)	21,687	1,906	3,675	1,693	119	534	279	16	48	37	14	24	13
Non-Electrical Machinery	9,715	596	2,047	640	27	112	282	--	46	--	--	17	--
Electrical Machinery	6,578	3,398	2,638	4,513	--	--	14	--	--	33	--	--	--
Transportation Equipment	15,452	7,557	1,060	--	--	--	--	--	--	227	--	--	--
Fine & Scientific Equipment	304	--	52	--	--	--	--	--	--	--	--	--	--
Miscellaneous	1,928	16,691	--	--	--	--	--	--	--	--	--	--	--
TOTAL PROCESSING INDUSTRY	201,886	163,938	49,406	82,867	41,704	13,272	63,081	11,443	3,224	8,927	8,232	5,132	4,524
Mining/Quarrying	189	995	--	1,575	53	353	--	--	25	15	--	--	--
Oil Extraction	--	--	--	--	--	--	--	--	--	--	--	--	--
Population:													
Urban	4,855,605	2,106,809	11,328,987	593,454	616,910	204,319	737,353	332,917	276,142	507,118	134,989	267,500	271,993
Rural	--	--	854,269	857,707	1,759,590	2,068,122	1,470,177	1,359,886	1,051,748	1,999,245	391,598	835,917	819,764
TOTALS	4,855,605	2,106,809	12,183,256	1,451,161	2,376,500	2,272,441	2,207,530	1,691,803	1,327,890	2,506,363	526,587	1,103,417	1,091,757

	MINIA	ASSIUT	QENA	SOHAG	ASWAN	MATRUH	NEW VALLEY	RED SEA	SUEZ	ISMAILIA	PORT SAID	SINAI	GRAND TOTAL
Food Processing	4,872	1,702	10,298	3,023	5,268	5	26	--	--	39	72	--	115,628
Tobacco	39	245	--	--	--	--	--	--	--	--	--	--	13,649
Spinning & Weaving	4,293	4,431	2,223	641	--	--	--	--	--	--	--	--	263,871
Ready-Made Clothes	--	--	10	--	--	--	--	--	--	--	--	--	8,143
Leather & Shoes	--	--	--	--	--	--	--	--	--	--	--	--	11,711
Wood, Cork, Furniture	10	59	--	--	169	--	--	--	--	--	--	--	10,125
Paper & Paper Products	--	--	--	--	578	--	--	--	--	--	--	--	13,006
Printing & Publishing	--	--	--	--	--	--	--	--	--	--	--	--	16,024
Chemicals	50	1,229	--	--	2,636	--	--	--	3,953	--	54	--	51,753
Oil Refinery	--	--	--	--	--	--	--	--	--	--	--	--	7,844
Oil & Coal Products	--	--	--	--	--	--	--	--	--	--	--	--	3,754
Rubber & Plastic	--	--	--	--	--	--	--	--	--	--	--	--	9,602
Clay, China, Const. Material	121	22	50	31	33	--	--	--	--	58	--	--	36,624
Iron & Steel	20	--	--	--	--	--	--	--	--	--	--	--	29,381
Basic Non-Ferrous Metals	--	--	--	--	--	--	--	--	--	--	--	--	8,561
Metallic Products (other than machinery & equipment)	--	--	--	--	--	--	--	--	--	--	--	--	30,045
Non-Electrical Machinery	43	81	--	--	--	--	--	--	--	--	--	--	13,606
Electrical Machinery	--	--	--	--	--	--	--	--	--	--	--	--	17,174
Transportation Equipment	--	--	--	--	--	--	--	--	1,706	--	--	--	26,002
Fine & Scientific Equipment	--	--	--	--	--	--	--	--	--	--	--	--	356
Miscellaneous	--	--	--	--	--	--	--	--	--	--	--	--	18,619
TOTAL PROCESSING INDUSTRY	9,448	7,769	12,581	3,720	8,411	5	26	--	5,659	97	126	--	705,478
Mining/Quarrying	13	--	--	--	2,978	--	--	5,270	115	275	134	--	--
Oil Extraction	--	--	--	--	--	233	--	2,024	--	--	--	--	--
Population:													
Urban	417,775	460,206	385,539	415,668	228,468	53,750	31,137	37,237	277,716	161,196	301,034	136,061	25,139,883
Rural	1,575,674	1,199,731	1,305,872	1,558,578	388,256	65,020	45,463	6,576	--	224,192	--	--	19,836,379
TOTALS	1,993,449	1,659,937	1,691,411	1,974,246	616,724	118,770	76,600	43,807	277,716	385,388	301,034	136,061	44,976,262

SOURCE: Employment figures are compiled from the Statistical Indicators of the Planning Regions, CAPMAS, 1978.

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TABLE IV-26
DISTRIBUTION OF MANUFACTURING INDUSTRIES NET VALUE-ADDED
(BY INDUSTRY -- GOVERNORATE) 1973
(In 000 L.E.)

	CAIRO	GIZA	QALYUBIA	ALEXANDRIA	BEHEIRA	MENOUFIA	GHARBIA	KAFR EL SHIEKH	DAMIETTA	DAKAHLIA	BENI SUEF	EL MINIA
Food Processing	14,719	7,824	10,414	17,843	2,794	983	2,598	2,817	1,016	2,589	372	1,808
Tobacco	71	150,048	0	3,503	192	-355	180	--	3	70	--	1
Spinning & Weaving	14,349	4,434	11,804	30,949	19,697	4,601	27,885	353	3,403	4,516	1,286	1,820
Ready-Made Clothes	3,392	5	0	244	--	--	0	--	2	2	--	--
Leather & Shoes	2,511	0	0	4,675	2	--	35	--	192	5	--	--
Wood, Cork, Furniture	2,419	699	145	1,173	135	9	41	18	198	374	4	2
Paper & Paper Products	372	46	995	9,818	--	--	4	--	5	2	--	--
Printing & Publishing	9,778	90	--	262	19	--	43	--	--	3	--	--
Chemicals	16,988	2,671	3,454	6,140	3,279	--	2,229	--	--	246	5	9
Oil Refinery	0	0	7,889	4,865	--	--	--	--	--	--	--	--
Oil & Coal Products	2,454	0	2,668	5,528	--	--	--	--	--	--	--	--
Rubber & Plastic	2,068	1,342	2,028	5,213	--	--	--	--	--	--	--	--
Clay, China, Construc. Material	11,367	1,517	5,718	2,727	323	319	143	100	39	134	13	1
Iron & Steel	11,298	6	7,118	688	--	--	44	--	--	--	--	--
Basic Non-Ferrous Metals	3,793	0	0	3,909	--	--	13	--	--	--	--	--
Metallic Products (other than machinery & equipment)	13,479	1,456	1,350	1,908	75	2	61	14	3	166	2	--
Non-Electrical Machinery	9,240	755	119	596	11	--	60	16	--	33	--	14
Electric Machinery	6,284	1,880	6,564	3,398	--	--	10	--	--	--	--	--
Transportation Equipment	11,706	823	--	2,950	--	--	--	17	--	--	--	--
Fine & Scientific Equipment	59	58	--	--	--	--	--	--	--	--	--	--
Miscellaneous	1,248	0	--	8,852	--	--	--	--	--	--	--	--
TOTALS	137,595	38,654	60,266	115,141	26,527	5,559	33,732	3,335	,861	8,140	1,682	3,657

	FAYOUM	SOHAG	QENA	ASWAN	RED SEA	MATRUH	ASSIUT	NEW VALLEY	SHARKIA	SUEZ	PORT SAID	ISMAILIA	TOTAL
Food Processing	424	1,200	4,077	1,643	--	-5	783	6	2,500	--	-15	2	76,392
Tobacco	112	--	--	--	--	--	30	--	140	--	--	--	18,995
Spinning & Weaving	887	554	628	--	--	--	547	--	2,721	--	--	--	130,334
Ready-Made Clothes	--	--	1	--	--	--	--	--	--	--	--	--	3,652
Leather & Shoes	4	--	--	--	--	--	2	--	--	--	--	--	7,426
Wood, Cork, Furniture	7	--	--	197	--	--	11	--	5	--	--	--	5,437
Paper & Paper Products	--	--	--	-18	--	--	--	--	--	--	--	--	11,224
Printing & Publishing	--	--	--	--	--	--	--	--	--	--	--	--	10,195
Chemicals	--	--	--	1,959	--	--	65	--	2	-314	8	--	36,741
Oil Refinery	--	--	--	--	--	--	--	--	--	--	--	--	12,754
Oil & Coal Products	--	--	--	--	--	--	--	--	--	--	--	--	10,650
Rubber & Plastic	--	--	--	--	--	--	--	--	--	--	--	--	11,031
Clay, China, Construc. Material	91	23	11	12	--	--	4	--	155	--	--	20	22,725
Iron & Steel	--	--	--	--	--	--	--	--	38	--	--	--	19,194
Basic Non-Ferrous Metals	--	--	--	--	--	--	--	--	--	--	--	--	7,715
Metallic Products (other than machinery & equipment)	7	4	--	--	--	--	1	--	22	--	--	--	18,550
Non-Electrical Machinery	10	--	--	--	--	--	24	--	10	--	--	--	10,888
Electric Machinery	--	--	--	--	--	--	--	--	367	--	--	--	18,503
Transportation Equipment	--	--	--	--	--	--	--	--	360	--	--	--	15,856
Fine & Scientific Equipment	--	--	--	--	--	--	--	--	--	--	--	--	117
Miscellaneous	--	--	--	--	--	--	--	--	--	--	--	--	10,100
TOTALS	1,542	1,781	4,717	3,793	--	-5	1,467	6	6,320	-314	-7	22	458,480

SOURCE: Statistical Indicators for the Planning Regions, CAPMAS, July 1978.

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TABLE IV-27
CALCULATED LOCATION QUOTIENTS FOR MANUFACTURING INDUSTRIES
(EGYPT, 1973)

	CAIRO	ALEXANDRIA	GIZA	QALYUBIA	BEHEIRA	DAKAHLIA	GHARBIA	MENOUFIA	KAFR EL SHEIKH	SHARKIA	DAMIETTA	FAYOUM
Food Processing	0.71	0. 83	1.80 *	0.37	0.89	2.08 *	0.36	0.75	3.80 *	2.74 *	0.83	1.70 *
Tobacco	0.65	0.66	8.70	--	0.42	1.30	0.20	6.10 *	--	0.94	0.06	2.20 *
Spinning & Weaving	0.40	1.10	0.43	1.35 *	1.70 *	1.30 *	2.10	1.70 *	0.64	1.08 *	1.90 *	0.57
Ready-Made Clothes	2.63 *	0.53	0.03	--	--	0.14	0.03	--	--	--	0.10	--
Leather & Shoes	1.70 *	2.00 *	--	--	0.12	0.18	0.15	--	--	--	1.50 *	0.11
Wood, Cork, Furniture	1.47 *	0.70	1.47 *	0.18	0.28	4.90 *	0.13	0.47	1.90 *	0.13	5.60 *	0.49
Paper & Paper Products	0.30	3.29 *	0.07	0.88	--	0.05	0.01	--	--	--	0.05	--
Printing & Publishing	3.30 *	0.17	0.04	--	0.04	0.08	0.11	--	--	--	--	--
Chemicals	0.82	0.49	1.15 *	0.98	2.48 *	0.05	1.60 *	--	--	0.03	--	--
Oil Refinery	0.00	2.48 *	--	3.70 *	--	--	--	--	--	--	--	--
Oil & Coal Products	3.20 *	1.20 *	--	0.40	--	--	--	--	--	--	--	--
Rubber & Plastic	1.00	1.50 *	0.67	2.20 *	--	--	0.59	--	--	--	--	--
Clay, China, Const. Materials	1.36 *	0.43	1.34 *	2.30 *	0.50	0.44	0.17	1.70 *	1.52 *	1.67 *	0.38	1.44 *
Iron & Steel	2.73 *	0.07	0.02	--	--	0.05	--	--	0.30	--	--	--
Basic Non-Ferrous Metals	0.96	3.08	--	--	--	--	0.06	--	--	--	--	--
Metallic Products (other than machinery & equipment)	2.50 *	0.27	1.70 *	0.47	0.07	0.95	0.10	0.03	0.35	0.09	0.04	0.10
Non-Electrical Machinery	2.52	0.18	2.17 *	0.13	0.03	0.44	0.01	--	0.75	--	--	0.15
Electrical Machinery	1.33 *	0.83	2.10 *	2.25 *	--	--	--	--	--	0.13	--	--
Transportation Equipment	2.10 *	1.28 *	0.55	--	--	--	--	--	--	0.69	--	--
Fine & Scientific Equipment	2.98 *	--	2.00 *	--	--	--	--	--	--	--	--	--
Miscellaneous	0.34	0.38	--	--	--	--	--	--	--	--	--	--

	BENI SUEF	MINIA	ASSIUT	QENA	SOHAG	ASWAN	MATRUH	NEW VALLEY	RED SEA	ISMAILIA	PORT SAID	SINAI
Food Processing	1.50 *	3.17 *	1.30 *	5.00 *	5.00 *	3.80 *	--	--	--	--	--	--
Tobacco	--	0.20	1.60 *	--	--	--	--	--	--	--	--	--
Spinning & Weaving	1.90 *	1.20 *	1.50 *	0.47	0.46	--	--	--	--	--	--	--
Ready-Made Clothes	--	--	--	0.06	--	--	--	--	--	--	--	--
Leather & Shoes	--	--	--	--	--	--	--	--	--	--	--	--
Wood, Cork, Furniture	0.20	0.07	0.52	--	--	1.40 *	--	--	--	--	--	--
Paper & Paper Products	--	--	--	--	--	3.73 *	--	--	--	--	--	--
Printing & Publishing	--	--	--	--	--	--	--	--	--	--	--	--
Chemicals	0.02	0.07	2.27	--	--	3.85	--	--	--	--	--	--
Oil Refinery	--	--	--	--	--	--	--	--	--	--	--	--
Oil & Coal Products	--	--	--	--	--	--	--	--	--	--	--	--
Rubber & Plastic	--	--	--	--	--	--	--	--	--	--	--	--
Clay, China, Const. Material	0.39	0.25	0.06	0.08	0.17	0.08	--	--	--	--	--	--
Iron & Steel	--	0.05	--	--	--	--	--	--	--	--	--	--
Basic Non-Ferrous Metals	--	--	--	--	--	--	--	--	--	--	--	--
Metallic Products (other than machinery & equipment)	0.07	--	0.03	--	--	--	--	--	--	--	--	--
Non-Electrical Machinery	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Machinery	--	--	--	--	--	--	--	--	--	--	--	--
Transportation Equipment	--	--	--	--	--	--	--	--	--	--	--	--
Fine & Scientific Equipment	--	--	--	--	--	--	--	--	--	--	--	--
Miscellaneous	--	--	--	--	--	--	--	--	--	--	--	--

(*) Coefficient exceeds one and the industry is found to be basic.

SOURCE: NUPS Elaboration.

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basic capital goods industries are electric and non-electric machinery, transport equipment such as railroad wagons, auto spare parts, light transport vehicles and car assembly.

The consumer-oriented industries are heavily concentrated in the city core, while most of the intermediate and capital goods industries are located on the outer corridor of the urban center, mainly in Maadi, Mansoura and Helwan. The clustering of the manufacturing industries in few sites usually enhances productivity, permits the transmission of technology, reduces transportation cost and increases social returns on investment.

b. Alexandria. The governorate seems to have a wide industrial mix. Its density coefficient is similar to that of Cairo. Also, as in Cairo, the governorate manufacturing employment far exceeds what its population would require.

The spinning and weaving industry is the largest basic consumer-oriented industry. It absorbed 40.6 percent of the governorate industrial employment and generated 26.8 percent of its net value-added. This would suggest that intermediate inputs represent a high proportion of the industry's gross output. The textile industry is concentrated in two sites, El Raml and Ras El Soda. In these two areas, the complementary industries such as fabric printing, dying and ready-made clothes tend to cluster.

The concentration of the textile industry in Alexandria is due to the city's proximity to cotton ginning mills in the Delta, its favorable climate, and its locational advantage on a waterway, where exports of textiles account for two-thirds of Egypt's manufactured products.

The basic intermediate industries are paper products, (with its paper firm—Rakta—as the world largest firm using rice straw in the processing of paper pulp), oil refineries, oil and coal products, metallic industries, mainly steel trusses, forming of steel, copper and aluminium. The capital goods industry includes, particularly, transportation equipment, mainly ship-building and maintenance.

Clustering of manufacturing industries in Alexandria followed the natural trend of the city's expansion. Most of the consumer-oriented industries, such as wearing apparel are locating within the city core. The intermediate and capital goods industries form relatively small agglomerations on both the east and the west fringes of the metropolitan area.

c. Qalyubia. The governorate is relatively industrialized compared with the national average. Its share in total manufacturing employment in 1973 amounted to 11.7 percent, far exceeding its corresponding 3.27 percent share in national urban population. The governorate appears to have a fair range of industrial mix with a density coefficient of 0.62, far less than that of Cairo and Alexandria.

Textiles are the only basic consumer-oriented industry. Its total employment represents half of the governorate manufacturing employment and it is mostly located in the Shoubra El Kheima area. Basic intermediate industries are rubber and plastic, and construction material.

The basic capital goods industry is limited to electric machinery, located mainly in Benha. Most of the governorate industrial activities are concentrated in three sites adjacent to the Cairo city administrative boundaries: Shoubra El Kheima, Abu Zabal and Mostorod.

d. Giza. The governorate shares in total net value-added from manufacturing industries amounting to 9.17 percent, exceeding its 7 percent corresponding share in employment. This could be explained by the existence of relatively capital intensive manufacturing industries with high average net value-added per worker. Among these industries are tobacco, plastic and rubber, and printing and publishing.

The governorate basic consumer industries are: 1) food processing and beverages, mainly brewing beer, processing of dates and sugar refinery, 2) wood and furniture, and 3) tobacco. The latter industry is highly concentrated in Giza, with its employment representing 65 percent of the industry's national total. The basic intermediate industries are chemicals, construction material and metallic industries. The latter produces also consumer-oriented products, mainly stoves, refrigerators, boilers and air conditioners, and is mostly located in Sakiet Mekkei. The basic capital goods are electric and non-electric machinery. The clustering of this wide range of metallic industries in Giza is due to its contingency to Cairo with its large market size, its supporting services and infrastructure and its sources of supplying intermediate inputs.

e. Beheira. The governorate industrial mix consists mainly of a few raw material-oriented industries. The governorate industrial density coefficient is only .50, and its two basic industries are textiles and chemicals. In 1973, these two industries accounted for 80.6 percent and 86.6 percent of the governorate's manufacturing employment and net value-added, respectively. The two industries are heavily concentrated in Damanhour and Kafr El Dawar, both close to Alexandria. The linkages between these two industries and the close proximity of their industrial sites to Alexandria, with its market size and diversity of industrial mix, raise the possiblity of an industrial growth corridor extending between Beheira and Alexandria.

f. Gharbia. The industrial mix in Gharbia is similar to that of Beheira, with only two basic industries, spinning and weaving and chemicals. These two industries are located in two industrial sites, Mahalla El Kubra and Kafr El Zayat. These two industries alone absorb 90 percent of the governorate's manufacturing employment and contribute 88.1 percent of its net value-added. The clustering of complementary and supporting industries in the governorate are centered around its textiles industry in Mahalla El Kubra.

4. Governorates with Industrial Employment Below the National Average

a. Menoufia. The share of Menoufia's governorate in total national manufacturing employment and net value-added amounts to only 1.2 percent and 1.6 percent, respectively. Its two basic industries are

spinning and weaving, heavily concentrated in Shebin El Kom and construction material in Quweisna.

b. **Kafr El Sheikh.** Only three basic industries are identified in Kafr El Sheikh. These three industries are wood and furniture, construction material (mainly red brick) and food processing. The latter is dominant, absorbing 62.8 percent of the governorates industrial employment and generates 84.4 of its value-added.

c. **Sharkia.** The governorate's industrial mix is similar to that of most of the Delta governorates. Its three basic industries are raw material oriented food processing in Belbeis, textiles in Zagazig, and construction material. These three industries make up over 90 percent of the governorate's manufacturing employment and net value-added.

d. **Damietta.** The spinning and weav-ing industry is the dominant industry in the governorate, absorbing 72 percent of the governorate's industrial employment and generating 70 percent of its value-added. The other basic industries are food processing, leather and shoes, wood, cork and furniture. The latter's main raw material input is rice straw from the rice mills in Faraskour.

e. **Fayoum.** The governorate's share in the national manufacturing employment and net value-added amounts to less than 1 percent. Its mix is limited to few industries, food processing, tobacco and textiles. These industries absorb 90.8 of the total manufacturing employment and contribute around 92.3 percent of its net value-added.

f. **Beni Suef and Minia.** Like most of the rural governorates, only two agro-based industries make up the economic base in each of the two governorates. The two industries are food processing and textiles, and they account for over 95 percent of the manufacturing industry's employment and net value-added in both governorates.

g. **Assiut.** The governorate's basic industries are food processing and textiles. They account for 90 percent the governorate's manufacturing net value-added and accomodate 78 percent of its corresponding employment.

h. **Qena and Sohag.** The basic industry in these two governorates is food processing, specifically sugar cane crushing and sugar processing. This industry must be close to the sugar cane farms, and sugar is the dominant cash crop in both governorates.

i. **Aswan.** The basic industries in Aswan governorate are raw material-oriented. These industries are chemicals (fertilizers), food processing (sugar cane crushing and sugar processing), paper and compressed wood. All three industries experience considerable weight loss in the production process. Location of the Kima fertilizer plant in Aswan city is due to the availability of calcium deposits in Kom Ombo and hydroelectric power from the Aswan Dam. The sugar factories are located in Edfu and Kom Ombo adjacent to the sugar cane farms, the main farm crop in the region.

The appearance of compressed wood and paper paste as basic industries in Aswan is an example of complementary production and efficient use of forward linkages, where baggase is used as the main input in these industries. The possibility of future expansion of these industries and the infill around their linkage would then necessitate the development of the governorate's agricultural sector.

5. Percent Planned Industrial Investments

In determining the relative importance of specific manufacturing industries and regions in the overall industrialization efforts, analysis of the most recent directions in industrial investment allocations is useful. For this purpose, the 1975 and 1980 industrial investment plans are examined.

a. **The 1975 Industrial Investment Plan**[7]. The industrial and mining sector (excluding petroleum) planned investment in 1975 amounted to L.E. 277.4 million. It represented 19.6 percent of total national investment and 47.7 percent of investments in the commodity sectors. The industrial investment in 1975 exceeded the preceeding year allocations by 53.1 percent. The foreign component required to implement this industrial investment plan appeared to be critical. The plan reveals that the share of foreign sources of investment amounts to L.E. 107.6 million, thus representing 47.3 percent of the sector's total investments.

The major allocations of the planned investment among industries amounted to L.E. 110.3 or 48.5 percent of the total industrial investments. These allocations are as follows:

> L.E. 50.3 million for the renewal and replacement of existing industrial plants; L.E. 40 million for the Helwan Iron and Steel Company; L.E. 14 million for the aluminium smelter in Naga Hammadi; L.E. 3 million for a new sugar factory in Dishna; and an equal amount for a new fertilizer plant in Talkha.

TABLE IV-28
INDUSTRIAL INVESTMENT IN 1975 PLAN
AS COMPARED TO URBAN POPULATION

Governorate	Industrial Investment (in 000 L.E.)	%	% of Urban Population To Total National (as of 1976)
CAIRO	81699	48.4	31.6
ALEXANDRIA	19077	11.3	14.4
PORT SAID	-	-	-
SUEZ	4000	2.4	0.9
DAMIETTA	-	-	0.9
DAKAHLIA	6905	4.1	4.0
SHARKIA	370	0.2	3.3
KALYUBIA	1089	0.6	4.3
KAFR EL SHEIKH	4665	2.8	1.8
GHARBIA	5229	3.1	4.8
MENOFIA	1417	0.8	2.0
BEHEIRA	6043	3.6	4.0
ISMAILIA	1200	0.7	0.9
GIZA	2922	1.7	8.5
BENI SOUIEF	147	0.1	1.7
FAYOUM	-	-	1.7
MINYA	1282	0.7	2.7
ASSYUT	502	0.3	2.9
SOHAG	590	0.4	2.5
KENA	18363	10.9	2.4
ASWAN	8132	4.8	1.4
RED SEA	3598	2.2	0.3
NEW VALLEY	1550	0.9	0.3
MATROUH	-	-	0.3
SINAI	-	-	-
TOTAL	168780	100%	

SOURCE: Ministry of Planning, The Transitional Plan, July 1974 - December 1975, pp. 130-131.

The plan predicted that industrial investments would generate an increase in the industrial sector's gross output and value-added by L.E. 242.5 and L.E. 71.4 million, respectively, at 1974 prices. Their corresponding employment was estimated at 35.4 thousand new job opportunities.

The spatial allocations of the 1975 industrial investment plan were targeted toward the largest two urban centers, Cairo and Alexandria. Table IV-28 reveals that Cairo was planned to receive 48.4 percent followed by Alexandria with 11.3 percent. The overall spatial distribution of industrial investments in 1975 followed the location of existing industries and urban population. The correlation coefficient between the spatial distribution of 1975 industrial investments and urban population is calculated at 0.92. This type of industrial investment allocation policy intensifies the base in Egypt as well as it's locations. The Ministry of Planning follow up report of the 1976 plan indicates that 92 percent of the industrial planned investment for 1975 or L.E. 286.7 milion was realized. Table IV-29 indicates that the industrial sector's gross output increased by L.E. 168.5 million or 5 percent of its 1975 level, and 70 percent of what was targeted. The sector's employment increased by 33.8 thousand, short of the targeted 35.4 thousand employment by only 4.5 percent. The average wage rate and productivity of industrial workers has increased by 6.5 and 1.5 percent, respectively.

In 1976 the planners heavily emphasized the growth of three groups of manufacturing industries, spinning and weaving, chemicals and food processing. These industries realized investment in 1976 far exceeding the planned investment.

b. The 1980 Industrial Investment Plan. The 1980 development plan also offered disbursements of industrial investment among governorates. It is presented in Table IV-30. Two points emerge from this table. Large scale industrial investments continued to favor the largest two urban centers, Cairo and Alexandria (with a combined share of L.E. 281 million, 40.8 percent of the total industrial investment) and the importance which the plan attaches to remote and redevelopment areas. The plan allocated L.E. 16 million to the extractive and mining industries in the New Valley and L.E. 24.2 millions to the Canal Zone. The industrial investment in the remote areas obviously leads rather than follows population. It's ability to provide a base for industrialization in these areas given the lack of supporting infrastructure to attract other industries might be questionable in the short run.

6. The 1980-84 Industrial Investment Plan

a. Major Objectives. The 1980-84 Industrial investment plan, prepared by the General Organization for Industrialization (GOFI), emphasizes the strengthening of the role of the industrial sector in the overall development efforts of the Egyptian economy. The major objectives of the plan are summarized as follows:

i) Realizing the linkages between agriculture and industry, the plan calls for close coordination of the expansion and development in both sectors. It also calls for a consistency and balancing between public and private industries, between small-scale and large-scale industries, and between consumer, capital and import substitute industries.

ii) The efficient use of domestic raw materials and rationing the industrial use of energy.

iii) Dispersion of small-scale industries across all the rural governorates where electric power made possible through the rural electrification scheme can be used more effectively to increase the value-added of intermediate agricultural products.

TABLE IV-29
INDUSTRIAL SECTOR PERFORMANCE
IN 1975 AND 1976

	1975	1976	% Change
Investment realized, in million L.E.	268.7	372.6	38.6
Output (in million L.E. at 1975 prices)	3,346.6	3,515.1	5.0
Employment (in 000)	1,156.8	1,190.6	2.9
Average wage rate	292.4	311.4	6.5
Average productivity	734.4	848.0	15.4

	Planned (L.E. Millions)	Realized (L.E. Millions)
Chemicals	9.9	47.2
Food processing	1.7	58.2
Textiles	14.8	25.9

SOURCE: Ministry of Planning, 1976 Follow Up Report.

TABLE IV-30
1980 INDUSTRIAL INVESTMENT PLAN

GOVERNORATE	TOTAL INDUSTRIAL INVESTMENT (IN 000 L.E.)	%
Cairo	207,267	30.10
Alexandria	73,586	10.68
Port Said	9,385	1.30
Suez	7,915	1.14
Damietta	5,665	0.80
Dakahlia	29,372	4.26
Sharkia	8,943	1.29
Qalyubia	64,315	9.30
Kafr El Sheikh	2,737	0.40
Gharbia	38,423	5.59
Menoufia	3,625	0.50
Beheira	52,709	7.65
Ismailia	6,890	1.00
Giza	41,639	6.00
Beni Suef	3,280	0.47
Fayoum	3,746	0.50
Minia	8,705	1.26
Assiut	45,438	6.59
Sohag	2,948	0.42
Qena	28,981	4.20
Aswan	15,781	2.29
Red Sea	4,550	0.66
New Valley	15,989	2.32
Matruh	--	--
Sinai	6,760	0.98
TOTAL	688,649	

SOURCE: Gordon, Peter; Urbanization in the Arab Republic of Egypt, The World Bank, 1980.

iv) Raising industrial labor productivity through the introduction of advanced production technologies, and the expansion of vocational training and research facilities.

v) Improving the industrial investment climate so as to attract foreign and joint venture private investments.

vi) Efficient use of the idle capacity in existing industrial establishments as well as replacement of the obsolete machinery in many of the textiles, chemicals, food processing and basic metal industrial establishments.

TABLE IV-31
SUB-SECTORAL ALLOCATION OF THE 1980-84 INVESTMENT IN PUBLIC INDUSTRIAL SECTOR

	IN MILLIONS L.E.	PERCENTAGE SHARE IN TOTAL PUBLIC MANUFACTURING INVESTMENT
Food Processing	412.4	10.2
Tobacco	157.0	3.9
Textiles	740.9	18.4
Leather & Leather Products	18.9	0.5
Wood	16.4	0.4
Paper & Paper Products	180.4	4.5
Printing & Publishing	--	--
Chemicals	233.2	5.8
Coal Products	0.9	--
Rubber & Plastic	86.8	2.1
Glass, Construction Material	91.0	2.2
Iron & Steel	868.9	21.6
Metallics, Metrological	701.6	17.4
Electric, Electronics	49.9	1.2
Transport Equipment	473.3	11.7
TOTAL PUBLIC MANUFACTURING INVESTMENT	4,031.6	100.0%
EXTRACTIVE INDUSTRIES INVESTMENT	754.1	
V. TRAINING & RESEARCH INVESTMENT	138.9	
TOTAL INVESTMENT	4,924.6	

SOURCE: Compiled from the Ministry of Industry, General Organization for Industrialization (GOFI), Spatial Allocation of the 1980-1984 Industrial Investments, Cairo, October 1980.

vii) Establishing industrial estates on the basis of a rational locational strategy that considers, among other factors, the proximity to raw material sites, potential urban markets, cost of the required supporting infrastructure and the topography of land. The plan, however, did not suggest specific locations for the industrial estates, nor did it allocate investments for their implementation. It did suggest that their locations should be on the outskirts of urban centers on desert land, thus preserving arable land.

TABLE IV-32
SPATIAL ALLOCATION OF THE 1980-1984 PUBLIC INVESTMENT PLAN

	In Million L.E.	%
Cairo	817.3	20.27
Giza	214.7	5.32
Qalyubia	226.3	5.61
Alexandria	922.2	22.87
Beheira	760.7	18.86
Menoufia	60.2	1.49
Gharbia	170.6	4.23
Kafr El Sheikh	89.6	2.22
Damietta	9.8	0.24
Dakahlia	36.1	0.89
Beni Suef	35.4	0.87
El Minia	2.6	0.06
Fayoum	23.9	0.59
Sohag	104.5	2.59
Qena	190.1	4.71
Aswan	80.0	1.98
Red Sea	--	--
Matruh	50.0	1.24
Assiut	8.7	0.22
New Valley	--	--
Sharkia	166.4	4.13
Suez	31.5	0.78
Port Said	18.5	0.46
Ismailia	12.5	0.31
Sinai	--	--
TOTAL	4,031.6	100.00

SOURCE: Same as Table IV- 19.

b. Sub-sectoral Investment Allocations. The plan allocates 83.8 percent of the total manufacturing investment among two broad groups of industries, capital goods and agro-based industries. Table IV-31 indicates that the share of capital goods industries (basic iron and steel, metallics, metrological, and transport equipment) amounts to 50.7 percent, while the share of agro-based industries (textiles, food processing and paper pulp) amounts to 33 percent. Food processing plants are suffering from excess capacity of plant and equipment on a permanent rather than seasonal basis.[8] Therefore, efficient use of these resources would require the introduction of changes in the country's agricultural policy to ensure a sufficient and continuous supply of the required agricultural raw materials.

c. Spatial Allocation of Investment. The major features of the spatial allocation of the 1980-84 investment plan include:

i) The continuous imbalance in the distribution of investment among governorates. Tables IV-32 and 33 show that Cairo and Alexandria continue to attract the largest share of industrial investments—their combined share amounts to 43.14 percent. With the exception of governorates adjacent to Cairo and Alexandria, the rural governorates continue to lag behind. The combined share of the Delta governorates of Menoufia, Kafr El Sheikh, Damietta, Dakahlia and Sharkia amounts to only 8.98 percent of the total. The share of all upper Egypt governorates would add up to only 10.8 percent.

The appearance of both Sharkia and Beheira governorates with a relatively high percentage of the plan's investment is mainly due to the allocation of large amounts of investments for large-scale projects to the new towns of the 10th of Ramadan and Sadat City. The plan allocated L.E. 91.7 million for the establishment of a large scale glass industry in the 10th of Ramadan and L.E. 612.2. million for the establishment of an iron and steel industry in Sadat City. If investment in these two new towns is

TABLE IV-33
PLANNED INVESTMENT IN PUBLIC INDUSTRIAL ESTABLISHMENTS (1980-1984)
(In 000 L.E:)

	CAIRO	GIZA	QALYUBIA	ALEXANDRIA	BEHEIRA	MENOUFIA	GHARBIA	KAFR EL SHEIKH	DAMIETTA	DAKAHLIA	BENI SUEF	MINIA	FAYOUM
Food Processing	5,586	17,912	10,913	31,725	--	--	600	88,110	--	--	--	2,570	23,914
Tobacco	--	156,152	--	864	--	--	--	--	--	--	--	--	--
Textiles, Ready-Made Clothes	57,738	12,359	90,295	118,614	148,470	60,239	111,038	1,456	9,775	17,043	--	--	--
Leather & Leather Products	8,584	--	--	10,291	--	--	--	--	--	--	--	--	--
Wood	--	--	--	16,400	--	--	--	--	--	--	--	--	--
Paper & Paper Products	--	--	--	41,571	--	--	--	--	--	--	--	--	--
Printing & Publishing	--	--	--	--	--	--	--	--	--	--	--	--	--
Chemicals	58,288	1,562	62,832	47,722	--	--	17,409	--	--	18,051	--	--	--
Coal Products	931	--	--	--	--	--	--	--	--	--	--	--	--
Rubber & Plastic	2,535	--	8,364	34,334	--	--	41,597	--	--	--	--	--	--
Glass, Construction Material	--	--	--	--	--	--	--	--	--	--	--	--	--
Basic Iron & Steel	134,445	--	--	418,511	315,920	--	--	--	--	--	--	--	--
Metallic & Metrological	206,178	7,932	53,872	40,718	296,312	--	--	--	--	--	35,443	--	--
Electric & Electronic	12,375	18,800	--	18,713	--	--	--	--	--	--	--	--	--
Transport Equipment	330,563	--	--	142,746	--	--	--	--	--	--	--	--	--
TOTAL MANUFACTURING INV.	817,333	214,717	226,276	922,209	760,702	60,239	170,644	89,566	9,775	36,094	35,443	2,570	23,914
Extractive Industries Inv.	11,013	--	36,093	22,194	--	--	--	--	--	--	--	--	53,333
Voc. Training Research Inv.	51,009	12,855	615	7,059	20,945	4,320	4,857	2,560	--	--	2,630	2,530	--
TOTAL PLANNED INDUSTRIAL INV.	879,355	227,572	262,984	951,462	781,647	64,559	175,501	92,126	9,775	36,094	38,073	5,100	77,247

	SOHAG	QENA	ASWAN	RED SEA	MATRUH	ASSIUT	NEW VALLEY	SHARKIA	SUEZ	PORT SAID	ISMAILIA	SINAI	GRAND TOTAL
Food Processing	73,044	67,500	7,978	--	50,000	7,041	--	8,222	5,166	4,913	7,235	--	412,429
Tobacco	--	--	--	--	--	--	--	--	--	--	--	--	157,016
Textiles, Ready-Made Clothes	31,424	--	--	--	--	1,694	--	67,187	--	13,540	--	--	740,872
Leather and Leather Products	---	--	--	--	--	--	--	--	--	--	--	--	18,875
Wood	---	--	--	--	--	--	--	--	--	--	--	--	16,400
Paper and Paper Products	---	78,960	59,888	--	--	--	--	--	--	--	--	--	180,419
Printing and Publishing	---	--	--	--	--	--	--	--	--	--	--	--	--
Chemicals	--	--	--	--	--	--	--	--	26,293	--	--	--	233,157
Coal Products	--	--	--	--	--	--	--	--	--	--	--	--	931
Rubber and Plastic	--	--	--	--	--	--	--	--	--	--	--	--	86,830
Glass, Construction Material	--	--	--	--	--	--	--	91,000	--	--	--	--	91,000
Basic Iron & Steel	--	--	--	--	--	--	--	--	--	--	--	--	868,886
Metallic & Metrological	--	43,662	12,154	--	--	--	--	--	--	--	5,278	--	701,649
Electric & Electronic	--	--	--	--	--	--	--	--	--	--	--	--	49,888
Transport Equipment	--	--	--	--	--	--	--	--	--	--	--	--	473,309
TOTAL MANUFACTURING INV.	104,468	190,122	80,020	--	50,000	8,735	--	166,409	31,459	18,453	12,513	--	4,031,661
Extractive Industries Inv.	--	--	35,076	56,983	10,000	--	244,458	20,934	3,332	13,020	--	247,742	754,178
Voc. Training Research Inv.	--	1,025	--	--	20,945	1,850	--	--	--	295	1,487	3,965	138,947
TOTAL PLANNED INDUSTRIAL INV	104,468	191,147	115,096	56,983	80,945	10,585	244,458	187,343	34,791	31,768	14,000	251,707	4,924,786

SOURCE: Compiled from the Ministry of Industry, General Organization for Industrialization (GOFI), Spatial Allocation of the 1980-1984 Industrial Investments; Cairo, October 1980.

excluded, industrial investment allocated for Beheira and Sharkia governorates would then amount to L.E. 148.5 million and L.E. 60.7 million, representing only 3.6 percent and 2.6 percent of the total national investment.

ii) Industrial investment allocated for capital goods industries (basic metal, metallic, metrological and transport equipment) is limited to sites in Cairo (with its adjacent industrial areas of Shoubra El Kheima and Giza) and Alexandria governorates.

In addition to these two governorates, new investment allocated for heavy industries is limited to few sites in Beni Suef, Qena and Aswan. The plan allocated L.E. 35.4 million for the completion of a railroad wagons plant in Wasta, Beni Suef, L.E. 43.6 million for the expansion of the aluminum smelter in Naga Hamadi and L.E. 12.1 million for metallic industries in Aswan. The probable regional forward linkages of these industries will be relatively small and attempts to regionalize their impact would require improving and upgrading the infrastructure of these industrial sites. This would probably act as an incentive for small and medium private complementary industries clustered around these industrial sites.

iii) The most dispersed investment outside both Cairo and Alexandria is food processing and textiles industries. The plan disperses investments in textiles and food processing industries across thirteen governorates. (Table IV-32) Examining the detailed plan reveals that a large proportion of the investment is allocated for expanding capacity or modernizing the capital stock of already existing food processing and textiles plants, with little or no impact on the traditional locational pattern of industries in Egypt. Table IV-34 presents the industrial sub-sector by governorate with the largest share of proposed 1980-1984 investment.

7. Industry Controls and Incentives

Egypt is presently in the midst of a major effort to attract foreign and domestic private investment. The economic "opening" of 1973 (al-infitah al-igtisadi) has provided a number of incentives to both domestic and foreign investors. The "opening" itself stressed the need for acceleration of economic growth through elimination of policies that discouraged private sector investment while at the same time worked to increase the efficiency of the public sector.

TABLE IV-34
INDUSTRIES WITH THE LARGEST INVESTMENT SHARE, BY GOVERNORATES

	Industry	The Share of the Industry in the Governorate Total Industrial Investment
Cairo	Transport Equipment	40.4 %
Giza	Tobacco	72.7 %
Kaluobia	Textiles	40.0 %
Alexandria	Basic Iron & Steel	45.3 %
Beheira[1/]	Textiles	100.0 %
Menoufia	Textiles	100.0 %
Gharbia	Textiles	65.0 %
Kafr El Sheikh	Food Processing	98.0 %
Damietta	Textiles	100.0 %
Dakahlia	Chemicals	52.7 %
Beni Suef	Metallics	100.0 %
El Minia	Food Processing	100.0 %
Fayoum	Food Processing	100.0 %
Sohag	Food Processing	70.0 %
Kena	Paper Pub.	41.5 %
Aswan	Paper Pub.	75.0 %
Matrouh	Food Processing	100.0 %
Assuit	Food Processing	80.6 %
Sharkia[1/]	Textiles	89.0 %
Suez	Chemicals	83.5 %
Port Said	Textiles	73.3 %
Ismailia	Electrical & Electronics	42.2 %

[1/] Industrial investment allocated for new towns is excluded in deriving these percentages.

SOURCE: NUPS Elaboration of information contained in Table IV-33.

Development would take place in a planned framework which would empahisize modernized industry; an intensive, high-value agriculture; oil and energy development; and tourism. Social goals would not be neglected and specific emphasis would be put upon more equitable growth between the regions. The public sector would concentrate upon carrying out the development plan, undertaking basic projects that other sectors would not or could not take up, and providing essential services to private and foreign investment.[9]

As a consequence of this policy, Law No. 43 of 1974 was enacted granting specific incentives to Arab and foreign investments and to investments in designated free zones.

a. Law No. 43 of 1974. Under Law No. 43 of 1974, certain incentives are given to Arab and foreign investments and investments in designated free zones. Such investments must be in designated fields and must be made in the form of participation with public or private Egyptian capital except where the General Authority for Investment and Free Zones decides otherwise. (Article 4) The profits of projects coming under the provisions of this Law are exempt from the tax on commercial and industrial profits and the tax on revenues from movable capital. These exemptions are generally for a five year period with eight years for projects of public interest and ten years for enterprises located in new towns and for land reclamation projects. The President may extend the exemption in the latter two categories to 15 years. The five year period may be further extended for three years by the Council of Ministers. Also, the stock of the company is exempt from the stamp duty for the same five year period and machinery and equipment required for the project may be exempted from all taxes and customs duties. (Article 16) Further, distributed profits are exempt from the general tax on income up to 5 percent of each shareholder's percentage of invested capital after the exemption period. (Article 17) Interest due on foreign loans will be exempt from all taxes and dues. (Article 18). Employees from abroad may expatriate up to fifty percent (50%) of their gross earnings. (Article 19) Finally, the investor

may demand re-export of invested capital if the enterprise cannot be carried out after five years. (Article 21)

In addition, companies coming under this Law will be exempt from some of the onerous requirements of present company and labor laws, including the requirement of having labor representatives on the Board of Directors (Article 10); from the distribution of annual profits to workers under the formula set out in Law No. 26 of 1954 (Basic Companies Law) (Article 12); and also from the need for a license to import goods required for the installation or operations of the project. (Article 15) They may also set up a foreign exchange account which may be used to pay for necessary imports, to make payments on foreign loans and to settle other expenses necessary to the project. (Article 14) Finally, there are liberal requirements with regard to the re-exportation of funds. (Article 22)

The General Authority for Arab and Foreign Investment and Free Zones was established to approve applications, facilitate procurement of permits and approve remittance of net profits. (Article 26)

The second part of the legislation deals with free zones. (Articles 30-57) The Board of Directors of the Authority, upon approval of the Council of Ministers, is authorized to establish public free zones while private free zones may be established by the Board of Directors alone.

i) Public Free Zones:

Each public free zone shall be run by a Board of Directors appointed by the Board of Directors of the Authority. The Free Zone Board of Directors shall authorize occupation or rental of lands located in the free zone, provide municipal services for a fee for projects created in the zone, establish and operate ship-unloading and warehousing activities, decide upon submitted projects for the zone, and provide equipment necessary to facilitate operations and projects created within the zone. (Article 33) Licenses to operate in free zones may be granted for storage of goods; for sorting, repacking and warehousing; and for manufacturing, assembling or processing of goods. (Article 35) Goods exported from or imported into free zones are not subject to customs and other duties except as they are withdrawn from the zone for local consumption, except that goods containing local material shall be exempted from such taxes and duties in proportion to the local material used in their manufacture and to one-half if the local component is 40 percent or greater. (Articles 36,37) Projects created in the free zone shall be exempt from the provisions of existing tax laws but shall pay an annual duty of one percent (1%) of the value of the goods entering or leaving the free zone on account of the project or three percent (3%) of the value-added realized by the enterprise. (Article 46). Payments made to expatriate employees working on such projects shall be exempted from the general tax on income. (Article 47) Transactions carried out in the free zone or between the free zone and other countries shall not be subject to the exchange control laws. (Article 49) Employment of Egyptians by foreign organizations located in a free zone shall not require a permit from the competent authorities except from the Free Zone Board but shall follow general conditions laid down in the Executive Regulation. (Articles 51-56) (See Decision of the Minister of Economy No. 375 of 1977).

ii) Private Free Zones:

Private free zones are created by the Board of Directors of the Authority exclusively for a single project and the location and boundaries of the zone are clearly delineated. (Article 30) Such zones shall be supervised by the Board of the Authority until they are affiliated with a public free zone. (Article 31) Otherwise, such zones shall have the same privileges as the public free zones.

b. New Urban Communities Law No. 59 of 1979. The New Urban Communities Law (Law No. 59 of 1979) provides some of the same benefits to projects carried out in the communities under the jurisdiction of the New Urban Communities Authority. Repatriation of capital (Article 20) and expatriation of salaries of foreign employees and tax exemptions for works undertaken by contractors (Article 21) found under Law 43 also apply to such projects. In addition, the profits of such projects are exempted from the commercial and industrial profits tax and the income tax on movable properties for a ten year grace period (as compared to the five year grace period generally available under Law 43). (Article 24) These projects shall also be exempt from the general tax on income for that same grace period. (Article 25) Occupants of property in such new urban communities shall be exempt from the tax on built property and the additional taxes for a period of ten years after the completion of the building. (Article 22) Reclaimed lands shall be exempt from the property tax and additional taxes also for a grace period of ten years. (Article 23) Finally, interest due on loans and credit granted by the Authority shall be exempt from all taxes and duties. (Article 19) Further, the Authority and the companies which contract with it shall be exempt from customs duties and other import duties. (Article 18)

The policy has shown impressive results to date, as indicated in Table IV-35. Exports have tripled as a percentage of GDP in the seven years since the passage of Law 43, while private investment has almost doubled and average GNP growth has been 8.0 percent annually (at constant prices). As of July 31, 1980, 824 free zone projects had been authorized under Law 43, 326 of which were already operational and a further 295 in process of implementation. The 824 projects represented a total equity investment of L.E. 2,848.9 million. (Table IV-36) This success is also reflected more generally in the annual rate of industrial growth which has exceeded 10 percent since 1975. The percentage of GDP in the industrial sector has risen but not so rapidly from 20.9 percent in 1975 to 24.1 percent in 1978. The percentage of Gross Fixed Investment in the industrial sector rose only from 32.1 percent in 1975 to 34.8 percent in 1978 but was over 40 percent in 1976 and 1977.

TABLE IV-35
EGYPT: THE IMPACT OF THE "OPENING" TO PRIVATE INVESTMENT
(% Share of GNP)

Category	FY 1972/1973	FY 1979/1980
Exports (Goods and Services	14.6 %	43.8 %
Imports (Goods and Services	21.0 %	53.0 %
Gross Annual Foreign Capital Flow (Including Direct Foreign Investment)	10.4 %	17.6 %
Total Stock of Medium and Long Term Debt (Outstanding and Disbursed)	38.0 %	58.0 %
Investment	22.3 %	30.4 %
Private Investment (Domestic and Foreign)	5.2 %	9.4 %
Average Annual GDP Growth (Constant Prices)	8.0 % annually	

SOURCE: World Bank, Arab Republic of Egypt: Domestic Resource Mobilization and Growth Prospects for the 1980s. (Report No. 3123-EGT, December 10, 1980), p. 3.

TABLE IV-36
LAW 43 PROJECTS AUTHORIZED THROUGH JULY 31, 1980
(L.E. Millions)

Sector	Number	Currency Amount (L.E. Million)			Percentages	
		Local	Foreign	Total	Local	Foreign
Industrial	338	335.3	365.4	700.7	47.9	52.1
Non-Industrial	486	742.3	1,041.9	1,784.2	41.6	58.4
(Banks)	(45)	(101.3)	(155.4)	(256.7)	(39.5)	(60.5)
TOTAL	824	1,077.6	1,407.3	2,484.9	43.4	56.5

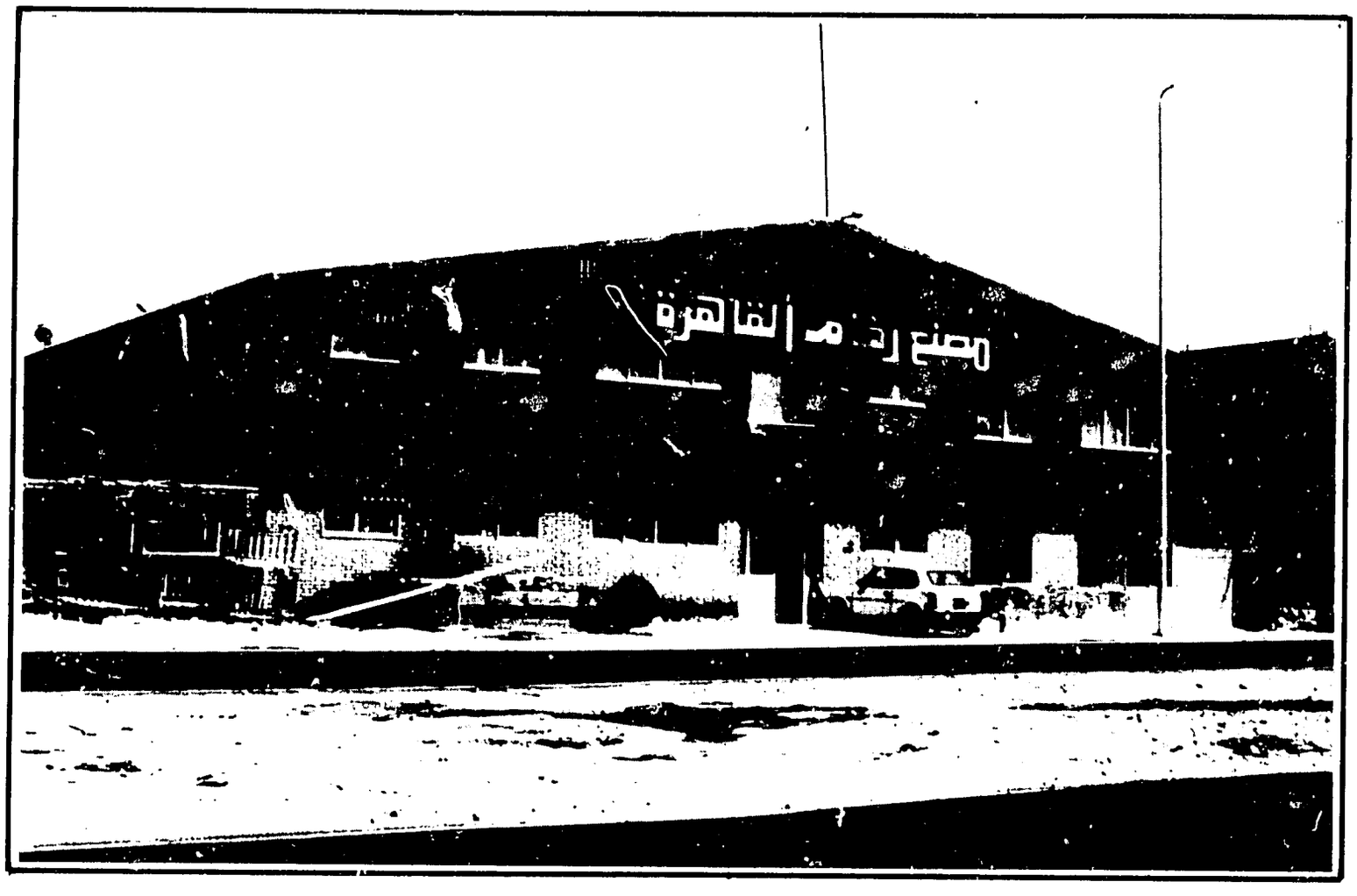
SOURCE: Arab Republic of Egypt, General Authority for Foreign and Arab Investment and Free Zones.

c. Institutional Impediments. There are large scale institutional impediments to reaching the goal of sustained industrial and economic growth for Egypt. They include the lack of an effective capital market, including a banking system that is not geared toward financing of development projects and entrepreneurs; lack of incentive to invest in securities because of the weakness of the stock exchanges and the high tax on dividends; lack of incentives to save because of relatively low interest rates on savings and taxes on interest income from such savings; and difficulties regarding the obtaining of necessary government permits (especially for non-Law 43 companies) and the diffuse nature of the government process for reviewing such applications. The latter difficulty will be discussed below and the former have been discussed numerous times by the World Bank and its affiliate, the International Finance Corporation.[10]

Most large-scale enterprises are public sector companies following the nationalization of 1961 and 1964.

Public sectors companies tend to be overstaffed, while management lacks a measure of decision-making authority as well as the ability to remove workers, or pay production-related bonuses. Further, the fixing of prices of products supplied by the public sector and the lack of incentive to increase the financial surplus, which mostly returns to the general budget annually, gives little reason for efficiency of operation of these enterprises.

MANUFACTURING NOW CONTRIBUTES 25 % OF THE GDP



Finally, there is little assistance to the small-scale industries which have a majority of the employment in the industrial sector, 54 percent in 1978 and one-third of total value-added generated in industry.[11] They have great difficulty in getting financing and the proper permits, as well as management and marketing assistance. They are the most bothered by deficient infrastructure, especially transport, and by the problems in the timely procurement of raw and intermediate materials. They are most discriminated against in taxation, duties on imports of capital goods, and the ten percent (10%) price margin that favors the public sector in purchases of government stores. There is no centralization of programs of assistance to small business within the government bureaucracy. Responsibility is divided among half a dozen ministries.

d. The Permission Process. Law No. 21 of 1958, as amended, sets the general procedures for the granting of industrial permits. All investments in excess of L.E. 500,000 must be approved by the General Organization for Industrialization (GOFI) under the Ministry of Industry. GOFI is a semi-autonomous body with a board of directors that includes representatives of scientific and academic institutions, as well as public bodies, with the Minister of Industry as Chairman and day-to-day operations under the Deputy Chairman who has the rank of Deputy Minister of Industry. The Organization conducts investment feasibility studies and evaluates and supervises implementation of all public sector industrial investment projects that are not under the control of other ministries.

Its authority also covers all private sector projects, including those projects subject to the approval of the General Authority for Foreign and Arab Investment and Free Zones under Law No. 43 of 1974. However, in the latter case it does not have a veto. New investment projects requiring capital less than L.E. 500,000 may be initiated and implemented at the enterprise level without formal permission from higher authority if surplus funds are available within the enterprise. However, major investment decisions and the determination of production output targets are made at the ministerial level or above, although enterprises normally implement the projects themselves.

It is important to note the scale of the projects under the control of other ministries or outside of the framework of GOFI control. Under the 1978-1982 Economic Development Plan the detailed planning and implementation of 32 percent of the total public sector industrial investment is in the hands of other government agencies, particularly the Ministry of Development and Reconstruction - 14.6 percent (principally cement production) and the Ministries of Military Production and of Supply - 6.2 percent and 3.4 percent respectively. In addition, the Iron and Steel Complex, which plans and executes many large infrastructure projects in addition to plants for industrial and mining equipment, and the Suez Canal Authority with major shipbuilding and other efforts are outside of this framework.

The only agency with general authority over all industrial investment plans and programs, public and private, is the Ministry of Planning. However, its present function in this area is mainly getting lists of on-going and proposed new projects from other agencies and adjust them by negotiation to fit its sectoral investment budget. The Ministry does not have the capacity for project analysis that would give it an important role in the area of industrial development. All investment funds are available from foreign loans through the Ministry of Economy, foreign investment through the General Authority for Foreign and Arab Investment and Free Zones, or from private sector sources.

The approval of industrial projects in Egypt is, thus, a rather complex process, further complicated by the necessity of approval by the governorate of a specific location. In practice the latter proves not to be a problem if funds are available for the projects.

Laws No. 43 of 1974 and No. 32 of 1977 have alleviated some of these problems for both foreign and domestic private investment. However, the free zones projects, in particular, have been slow in getting started because of the lack of adequate infrastructure in the zones. In addition, the designation of private free zones throughout the country, including the Cairo Metropolitan Area, has diluted the role of free zones as an instrument to decentralize industrial development.

i) Industrial Zone Location:

The permission system of industry is governed by the general law granting authority to the Minister of Industry (Law No. 21 of 1958, as amended), as described above, and by Law No. 28 of 1949 which set up a system for the establishment of industrial zones. Under the latter Law, governorates are permitted to designate one or several zones within their jurisdiction for factories, manufacturing and workshops and for other unhealthy, inconvenient or dangerous establishments to the exclusion of all other uses. Such zones shall be established after consultation with the Ministers of Industry, Public Health, Interior and Social Affairs. (Article 1). In cities/towns where such zones are designated it is prohibited to issues a permit for an industrial establishment or to establish such an establishment outside of such designated zones. (Article 3).

In addition, the present Local Government Law (Law No. 43 of 1979) gives authority to the governorate to determine the boundaries of such industrial zones and form industrial services committees to operate within these zones. (Articles 110-112). The industrial services committees will specify the projects to be funded from the workers' share of the profits of the companies located in the area.[12] (Article 111). The governorate also has the role of selecting locations for new factories inside the governorate, provided that all required public utilities are already established in coordination with the Ministry of Industry. The governorate is also responsible for the implementation of the laws regarding the solving of labor disputes and regarding industrial safety. Furthermore, the New Urban Communities

Law No. 59 of 1979 gives the New Communities Authority one month to issue an opinion on the proposed location of new industry within its jurisdictional boundaries. Disputes between the NUCA and the Ministry of Industry are to be set by the Prime Minister. (Article 12)

To date, industrial zones under the Local Government Law have been designated in Helwan and El Ameriya in the Cairo Governorate, in Shoubra El Kheima and El Hemke in Qalyubia Governorate, and in the Mahalla El Kubra, Kafr El Dawar, West Alexandria, and Janaclyse.[13]

ii) Free Zones and New Urban Communities:

A second type of designated industrial location is the free zones and the new urban communities which were granted investment incentives under Law No. 43 of 1974 and Law No. 59 of 1979, respectively. In addition, enterprises as a part of land reclamation projects are also granted some tax advantages. Port Said has been designated as a Free City. Industrial public free zones designed to encourage manufacturing for export using imported raw materials or parts have been or will be established in Port Said, Suez (Adabiya and Port Tawfik), Nasr City (Cairo), El Ameriya (Alexandria) and Ismailia. In addition, many private free zones have been established, especially in the Cairo and Alexandria areas.

iii) Industries Located Outside of Industrial Zones:

Despite the rather rigid requirements of the industrial zones legislation, it is apparent that many industrial permits are approved for other locations where the investment monies are available and ready to be spent. Thus we find the industrial corridor in the Qalyubia Governorate which starts long before one reaches the boundaries of the city of Shoubra El Kheima.

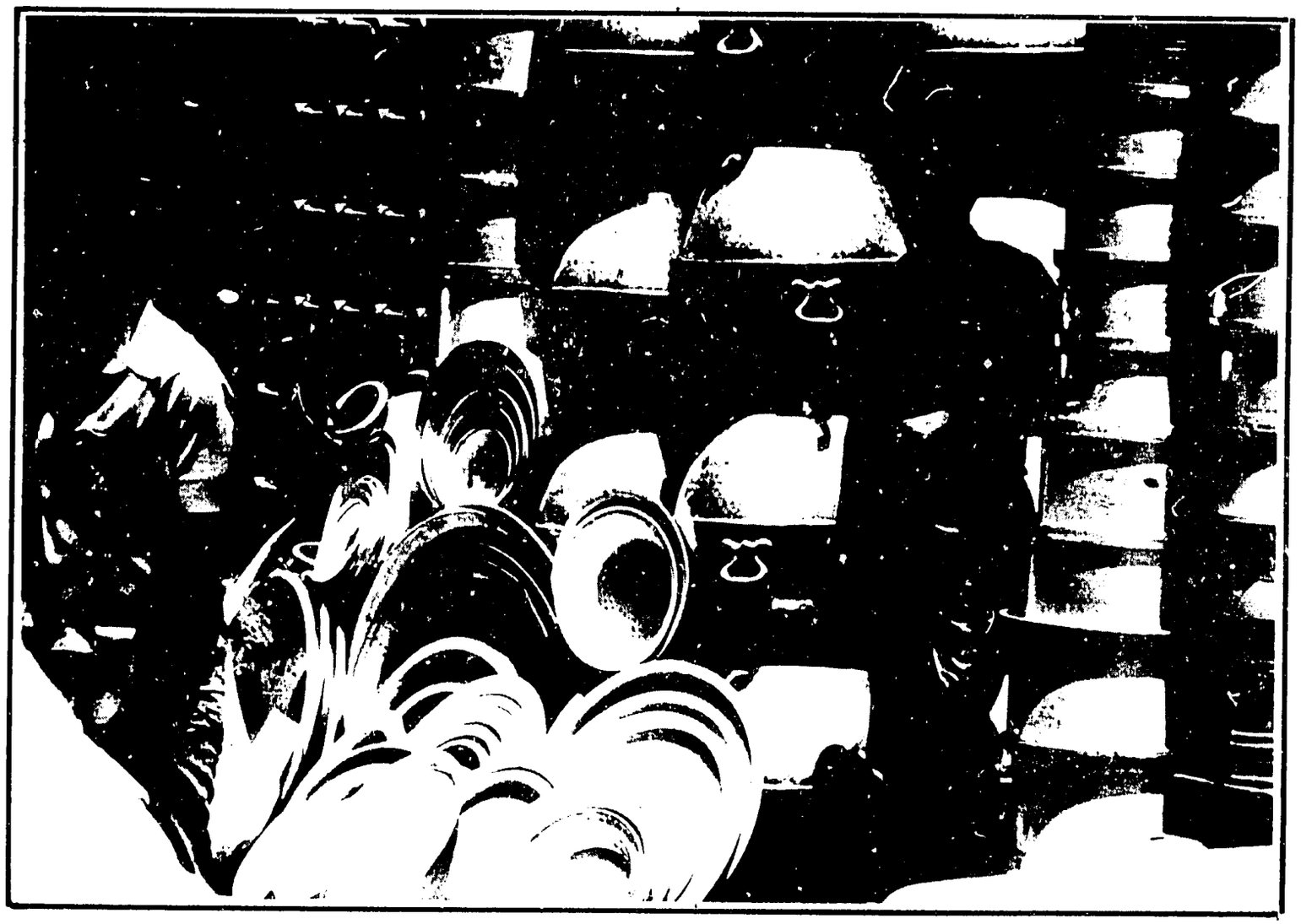
The rather diffuse decision-making structure for the approval of industries at the national level, the need of the governorates to provide income and employment within their boundaries, and the lack of personnel and authority for enforcement at the governorate level and below all contribute to the present state of affairs. The passage of Law No. 53 of 1978 prohibiting approval of industrial permits for the use of agricultural land has similarly not been successfully enforced, although it has stopped some large-scale projects in Giza Governorate.

C. Trade Services and the Urban Labor Market

1. Data Sources

Employment figures in the wholesale and retailing activities are derived from the published data of the most recent population census of 1976. Reliance on the population census over outdated censuses of establishments is mainly due to its scope of coverage. Since responses to the population census are mainly from households, its coverage is much more comprehensive than any other statistical source. For example, a large percentage of retailing

ONE OF THE MAIN CONSEQUENCES OF THE MIGRATION FROM RURAL OCCUPATIONS INTO THE URBAN LABOR MARKET IS THE EXPANSION OF THE INFORMAL SEGMENT



activities, such as street vending, may well fall completely outside the scope of the establishment surveys but most likely are covered by population census data.

In analyzing the sector's contribution to Egypt's economic growth, use is made of a working paper prepared by the Ministry of Economy which gives time series data for gross fixed investment for all sectors of the economy for the period 1978 through 1979. It should be stressed that the trade sector in the Ministry's paper includes also finance. However, due to the relatively small magnitude of finance employment to total employment of the trade sector (active population engaged in finance activities in 1976 represents only 7.4 percent of those in trade sector), the overall data of the trade and finance sector were used.

As for the government controls on domestic trade activities, the analysis is primarily limited to channels of agricultural and food products, the most dominant activities.

2. Domestic Trade Employment and Economic Growth

The Ministry of the Economy 1981 report on Recent Development in the Egyptian Economy provides time series data for gross fixed investment for trade and finance as well as all other sectors of the economy. These series are supplemented by the corresponding gross domestic product and employment figures and presented in Table IV-37. As indicated by this table, during 1975-1979 annual growth rate of investment in the trade and finance sectors amounted to 2.98 percent, a rate much lower than the 7.24 percent for the overall economy. In contrast, the growth rate of the sector's contribution to Gross Domestic Product amounted to 11.27 percent, far exceeding the 8.69 growth rate for the whole economy over the same period. This indicates that increase in the trade sector's gross output was accomplished with relatively less investment as compared to other sectors; hence, the incremental capital output ratio (ICOR) for the trade sector is only 0.17 as compared to the national average of 3.92.

The cost of job creation in the trade sector is also much lower than the national average. Over the period 1974-1978, additions to the trade sector investment stock amounted to L.E. 72 million, with a corresponding increase in employment by 162.3 thousand jobs, over the period 1975-1979. The average cost per job would then amount to L.E. 443.6, a figure much lower than the average national of L.E. 6,351 during the same period. The relatively low cost of job creation in the trade sector is mainly due to the fact that there are thousands of small shops that have very modest investment, and the labor usually requires little investment. On the contrary, investment in productive sectors, housing, transportation and public utilities require large investments, but apparently have very little effect on employment.

3. Urbanization and Trade Employment

A large percentage of urban immigrants usually lack the training and skills needed by the productive sectors. Consequently, they end up creating marginal jobs for themselves, mostly in retailing. Such jobs usually require minimum investments.

The magnitude and nature of trade employment in the five urban governorates of Cairo, Alexandria, Port Said, Suez and Ismailia can be compared with the aggregate of all rural governorates. The active population engaged in the urban governorate trade activities as well as the aggregate of rural governorates and the national totals are derived from the population census of 1976 and presented in Table IV-38, with a summary in Table IV-39.

Based on the census data, Cairo trade employment represents 12.7 percent of its total occupations. It is clear from Table IV-38 that retailing dominates Cairo trade activities, with its 90 percent share in total employment trade. The highest level of trade activity in Cairo is distribution of food and agricultural products, with its shares of 25.4 percent and 50 percent of wholesale and retail trading, respectively. The

TABLE IV-37
ECONOMIC INDICATORS, EGYPT, 1975-1979

	1975	1976	1977	1978	1979	Growth Rate (75-79)
Gross Fixed Investment 1/						
Trade & Finance	16	17	15	17	18	2.98
National	1,283	1,254	1,239	1,533	1,697	7.24
% of Trade to National	1.2	1.4	1.2	1.1	1.0	
Gross Domestic Products 2/						
Trade & Finance	77.3	841.5	924	1,068.2	1,911.9	11.27
National	5,061.3	5,520.8	5,907	6,531.6	7,064.9	8.69
% of Trade to National	15.3	15.2	15.6	16.4	16.9	
Employment 3/						
Trade & Finance	966.4	1,014.2	1,050.6	1,093.9	1,128.7	3.95
National	9,606.2	9,645.6	9,885.5	10,216.3	10,560.3	2.39
% of Trade to National	10.1	10.5	10.6	10.7	10.7	

NOTE: Investment and GDP figures are in millions L.E. at 1975 prices. Employmentfigures are in thousands.

SOURCES: 1/ The Ministry of the Economy, Recent Developments in the Egyptian Economy.
2/ The International Monetary Fund, Recent Economic Development, Egypt, January 1981.
3/ CAPMAS, Statistical Yearbook, 1952 -- 1979, Published 1980.

second largest wholesale activity is the distribution of petroleum and related products. Textiles is the second largest retail activity (see Table IV-39). The mix of trade activities in Alexandria is similar to that of Cairo, except that wholesaling of wood is the second largest. Concentration of this trade in Alexandria is due to its locational advantage on a major waterway, with its port handling between 85 and 90 percent of Egypt's exports and imports. Most of the bulk wood is imported through Alexandria then stored in warehouses for wholesale trade within close proximity to the port, mainly in Mena El Basal and Kabari. The second largest retail trade in Alexandria is in textiles, mainly attributed to textile industry dominance in Alexandria's economic base. In the three canal zone cities wholesaling and retailing in food and agricultural products are also found to be the most noticeable trade activity.

The mix of trade activities in rural governorates seems to be similar to that of urban, except that the relative share of wholesale and retail trading in agricultural and food products far exceeds any of the urban governorates. The respective shares of wholesale and retailing amounts to 72.4 and 67.7 percent.

4. Access to Trade Service

In measuring population access to trade activities, the ratios of employment in retailing to total populations were used. The justification for using retailing rather than the combined employment figure of wholesalers and retailers is based on two factors: the limited access of the

TABLE IV-38

ACTIVE POPULATION (AGED 15 YEARS & OVER) ENGAGED IN TRADE ACTIVITIES

1976

Governorate	Cairo			Alexandria			Port Said			Suez			Ismailia			Total National		
Trade Activity	Wholesale	Retail	Total	Wholesale	Retail	Total	Wholesale	Retail	Total	Wholesale	Retail	Total	Wholesale	Retail	Total	Wholesale	Retail	Total
Agricultural Products	1,878	31,699	33,577	2,666	14,378	17,044	113	1,493	1,606	62	1,066	1,128	102	1,834	1,936	10,968	152,438	163,406
Animals	668	4,371	5,039	195	2,336	2,531	29	907	936	60	339	399	8	399	407	2,175	40,699	42,874
Animal Products	120	--	120	50	--	50	--	--	--	--	--	--	2	--	2	417	--	417
Animal Feed Stuff	26	251	277	27	186	213	--	8	8	2	19	21	--	10	10	242	1,478	1,720
Food, Beverages & Tobacco	1,759	37,570	39,329	687	15,084	15,771	106	1,950	2,056	68	1,702	1,770	19	2,009	2,028	6,015	214,267	220,282
Textile & Ready-made Clothes	714	10,541	11,255	551	5,335	5,886	18	922	940	7	183	190	4	181	185	2,223	39,355	41,578
Leather & Shoes	526	3,632	4,158	142	1,437	1,579	4	132	136	1	21	22	--	44	44	2,218	8,947	10,165
Houseware Items	243	3,675	3,918	114	1,085	1,199	5	84	89	4	54	58	1	56	57	562	11,629	12,191
Petroleum & Petroleum Products	2,216	5,119	7,335	813	1,483	2,296	74	197	271	202	199	401	18	79	97	5,037	15,114	20,151
Papers & Stationary	248	3,011	3,259	111	869	980	3	86	89	4	34	38	2	29	31	507	6,735	7,242
Wood & Wood Products	288	3,192	3,480	1,135	1,982	3,117	23	164	187	23	52	75	1	60	61	2,102	11,023	13,125
Construction Material	607	5,470	6,077	238	2,113	2,351	10	196	206	10	125	135	6	108	114	1,557	15,537	17,094
Drugs & Pharmaceuticals	885	2,555	3,440	190	947	1,137	8	80	88	9	20	29	3	62	65	1,483	7,257	8,740
Chemicals	311	220	531	97	62	159	7	4	11	6	1	7	--	--	--	584	729	1,313
Metal Products	327	451	778	122	173	295	8	5	13	8	5	13	2	3	5	672	1,017	1,689
Agricultural Machinery	153	235	388	59	91	150	--	8	8	2	1	3	--	--	--	385	847	1,232
Non-Agricultural Machinery	987	693	1,680	190	129	319	4	5	9	--	1	1	5	2	7	1,582	1,386	2,968
Transport Equipment	297	3,367	3,664	161	1,056	1,217	6	93	99	6	25	31	1	43	44	651	7,557	8,208
Watches & Jewelry	53	3,715	3,768	23	750	773	6	295	301	1	83	84	--	23	23	125	7,562	7,687
General Items	181	8,021	8,202	98	3,145	3,243	17	377	394	2	255	257	2	259	261	456	25,138	25,594
Others	401	18,981	19,382	204	7,905	8 109	40	1,436	1,476	39	571	610	7	613	620	1,140	72,961	74,101
Coop. Marketing & Department Stores	111	9,432	9,543	107	3,230	3,337	2	268	270	4	159	163	2	201	203	684	26,195	26,879
Sales Supporting Services	4,534	901	5,435	4,460	417	4,877	284	62	346	135	37	172	28	20	48	13,528	3,314	16,842
TOTAL	17,533	157,102	174,635	12,440	64,193	76,633	767	8,772	9,539	655	4,952	5,607	213	6,035	6,248	54,313	671,185	725,498

SOURCE. Population Census of 1976, CAPMAS

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TABLE IV-39
RELATIVE EMPLOYMENT SHARES OF MAJOR TRADE ACTIVITIES --1976

Governorate	Wholesale Trade		Retail Trade	
	Trade Activity	% of Wholesale Employment	Trade Activity	% of Retail Employment
Urban Governorate:				
A. Cairo	1st Agricultural and Food Products	25.3	1st Agriculture and Food	50.0
	2nd Petroleum Products	12.6	2nd Petroleum Products	6.7
B. Alexandria	1st Agriculture and Food	29.1	1st Agriculture and Food	52.3
	2nd Wood	9.1	2nd Textiles	8.3
C. Suez	1st Agriculture and Food	29.3	1st Agriculture and Food	64.0
	2nd Petroleum Products	30.8	2nd General Products	5.1
D. Port Said	1st Agriculture and Food	32.3	1st Agriculture and Food	49.8
	2nd Petroleum	9.6	2nd Textiles	10.5
E. Ismailia	1st Agriculture and Food	61.5	1st Agriculture and Food	70.4
	2nd Petroleum	8.4	2nd Textiles	4.2
Rural Governorates:	1st Agriculture and Food	72.4	1st Agriculture and Food	67.7
	2nd Petroleum	7.5	2nd Textiles	5.0
National:	1st Agriculture and Food	36.5	1st Agriculture and Food	62.8
	2nd Petroleum	9.2	2nd Textiles	5.9

SOURCE: Population Census of 1976, CAPMAS

TABLE IV-41
INFORMAL PRIVATE RETAILING EMPLOYMENT, 1976

Work Status	Cairo	Alexandria	Port Said	Ismailia	Suez	Rural Govern.	Total National
Total Private Retailing	147,064	61,154	8,534	6,032	4,768	438,013	665,565
Self Employed	77,270	33,970	5,679	4,229	3,087	264,971	389,206
Unpaid Family Workers	1,620	448	69	117	50	17,234	19,538
Percentage of Informal to Total Private Retailing	53.6%	56.3%	67.3%	72.0%	65.7%	64.4%	61.4%

SOURCE: Population Census, 1976.

TABLE IV-40
ACCESS TO TRADE SERVICES

Governorate	Retailors	Total Population	Retailers Per Thousand of Population
Cairo	157.1	5,084.5	30.9
Alexandria	64.2	2,318.6	27.7
Port Said	8.7	262.6	33.3
Suez	5.0	194.0	25.5
Ismailia	6.0	351.9	17.2
Total Urban	241.0	8,211.6	29.3
Total Rural	430.2	28,444.6	15.1
Total National	671.2	36,656.2	18.3

Retailers and population figures are in thousands.

SOURCE: Population Census of 1976, CAPMAS.

general public to wholesale trade activities, and the nature of the wholesale trade function, with its service radius usually extending beyond the boundaries of the governorates and urban centers in which these services are located. The ratios of retailers per thousand of population are calculated and presented in Table IV-40. As expected, these ratios are found to be much higher in all urban governorates than rural ones. Among urban governorates, Port Said has the highest ratio. This is probably deceiving, since Port Said has been designated as a public free zone with retailing in imported consumer goods as its main economic activity, mostly sold to visitors from out of town rather than permanent city residents. If Port Said is excluded, access of population to trade services is easier in Cairo than all urban governorates and the national average. These results, however, do not imply that the ease of access to trade service in large urban centers means higher competition and lower prices. This is not the case since most of the retail activities are in food and agricultural products with large chains of middlemen involved --prices are normally higher for these items in the urban centers than in the countryside.

5. Informal Trade

One of the main consequences of the continuous migration of working population from agricultural and rural occupations into the urban labor market is the continuous expansion of the informal segment of the trade activities. This phenomenon is very pronounced in most of the urban centers, where large numbers of petty traders do not work from a regular shop, but are generally found to be working on the pavements of the streets.

The ILO definition of informal activities is more closely applicable to retailing than wholesale activities.* One way of quantifying informal retailing employment is to examine the work status of active population engaged in this activity. The work status category most clearly linked to the informal retailing is "self-employed with no employees." This category represents the irreducible minimum size of retail activity and constitutes a significant category within the informal sector. Table IV-41 distributes self-employed and unpaid family workers in private retail activities among urban and rural governorates. It is not definite from this table that there exists a correlation between the degree of urbanization and the magnitude of informal retailing. However, it is clear that a large percentage of private retailing is informal. Also, the percentage of the informal trade is lower in Cairo and Alexandria as compared with all other governorates. This finding suggests that private retail activities are relatively more organized, more easily controlled by government authorities and that child labor laws are more enforced in both Cairo and Alexandria, compared to the less urban and the rural governorates.

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* The ILO defined informal activities as those possessing one or more of the following characteristics: small scale of operations, ease of entry, use of indigenous technologies and local materials, family participation in enterprise, lack of access to direct subsidies and other government measures, and a partly compensating lack of identifiability by government for regulatory and tax purposes.

6. Relative Importance of Public and Private Sectors

Public and cooperative trade activities, especially in food and related products, are mostly urban. Data in Table IV-42 indicates that the percentage of employment in public sector and cooperative trade is twice as high in urban as in rural governorates. Among urban governorates, this percentage varies with the size of the urban center. In Cairo and Alexandria, the percentage is much higher than in Suez and Port Said. The relatively low percentage of Ismailia is due to the change in its boundaries to include rural areas of the Sharkia governorate. Also, the table reveals that the public sector is relatively more important in retailing than wholesaling activities.

7. Delivery Channels of Farm Products

In this section, analysis of the delivery channels of farm products is presented in two subsections, main crops and farm produce (vegetables and fruits). This information was derived from a small number of interviews in the wholesale and retail markets.

a. Main Crops. Government controls are very noticeable in the marketing of the agricultural main crops. This intervention is intended to facilitate the vertical integration between production and marketing. Agricultural credit and the purchase of required inputs are tied to compulsory sale of the product, in part or in total, through the cooperative system which started in the early sixties. The government intervention covers a wide range of farm crops, from domestic staples to export crops. Currently, crops subject to the compulsory delivery include sugar, beans, seasane, lentils, onions, rice and cotton. The quotas are set on the basis of productivity trends. The predetermined prices paid to farmers are usually 20-50 percent lower than the free market prices. These prices are set on the basis of the cost of production, crop income equalization, international price, relative price, consumer price and parity price. For some of the crops, as in the case of cotton, difference in prices paid to farmers and export prices represent a revenue to the government budget. For some other crops, such as rice, the price paid by urban dwellers is lower than price paid to farmers. For example, the price paid by urban dwellers for rice

TABLE IV-42
PERCENTAGE DISTRIBUTION OF TRADE EMPLOYMENT AMONG PUBLIC AND PRIVATE SECTORS, 1976

Governorate	Wholesale		Retail		Total	
	Public	Private	Public	Private	Public	Private
Cairo	2.9	6.9	8.3	81.9	11.2	88.8
Alexandria	5.7	10.3	6.0	78.0	11.7	88.3
Port Said	1.9	6.0	4.4	87.7	6.3	93.7
Ismailia	0.6	2.7	3.2	93.5	3.8	96.2
Suez	1.3	10.3	5.3	83.1	6.6	94.4
Total Urban	3.5	7.8	7.3	81.4	10.8	89.2
All Rural	1.1	3.7	3.2	92.0	4.3	95.7
National	2.0	5.2	4.7	88.1	6.7	93.3

SOURCE: Population Census, 1976.

represents only 43.7 percent of the price paid to farmers. The difference is covered through government subsidies. The subsidy program is administered through the General Authority for Supply of Commodities (CASC). The GASC sells some of its products at the subsidized price for the family ration, and the rest at the free market.

b. Vegetables and Fruits. The government controls on marketing of fruits and vegetables are much more liberal than for main crops. This activity, despite its economic significance, is complex in nature. This is mainly due to: the small size of scattered farm lots allocated for growing vegetables and fruits; the concentration of consumers in the large urban centers; the lack of immediate transport facilities; and the failure of agricultural credit cooperatives to assist farmers through advance payments. These factors combined gave rise to an hierarchy of marketing channels and middlemen activities, especially in Cairo and Alexandria. Outside these two large urban centers, links between farmers and consumers becomes more direct, resulting in relatively lower prices to consumers, and higher return to small farmers.

c. The Case of Cairo. The entry gate for most of the fresh vegetables and fruits consumed in Cairo is its wholesale market, located in Rod El Faraq on an area of 33.5 feddans of land. The land site is owned by the Ministry of Wakf and administered by Cairo Governorate. The market activities are controlled by a few well known wholesalers who have been established in the business for generations. Rents paid for the trade sites within the market area are very minimal and does not reflect the economic value of land. A rent for a typical site ranges between three and five pounds. Recently, vacant sites go to the highest bidders, for rents sometimes as high as L.E. 300. However, new sites are seldom available, since private arrangements between traders in the market are always done in advance. The government controls on the market activities are mainly through recording the volume and destination of the incoming produce. These records of the incoming gross volume of farm products are used to determine expected shortages and surplus as well as for tax purposes. The government revenue from the market operations are the collected fees on incoming and sold vegetables and fruits. Fees depend greatly on the size rather than value. The other sources of government revenue are the weighing service and fines for illegally piled up produce. Based on personal interviews, wholesalers started their business with an initial capital of at least L.E. 2,000.

There exist numerous barriers to retailers trying to break into the wholesale trade. The wholesalers usually perform their activities by paying advance payments to farmers on their expected crops. These advance payments are used to monopolize farmers over extended seasons. The initial agreements seldom include delivery prices. During the harvest, farmers usually prefer accepting a lower price to avoid arranging and paying for transportation cost, which then becomes the main responsibility of the wholesalers.

The prices farmers receive are normally less than half the price wholesalers charge to retailers. Also, it is customary among wholesalers to divide the retailers among themselves, which over time becomes a monopoly on the retailing end as well. To assure stability and monopoly over retailers, advanced credit is also used. The profit of wholesalers is not limited to difference in prices paid to farmers and prices charged to retailers; it is also derived from sales of their own surplus within the market site to other wholesalers, through middlemen. These middlemen usually pay large sums of money, sometimes L.E. 4,000, just to be permanently associated with a known wholesaler.

In addition to the already established wholesale market of Rod El Faraq, Cairo satisfies its daily requirements for fruits and vegetables from two other less formal wholesale markets. These two markets are located on the boundaries of Cairo Governorate in Shoubra El Kheima and Moniab in Giza. The establishment of these two markets in their current locations was induced by the limited capacity of the inner city (Rod El Faroq) wholesale market, the monopoly power and the barriers for the entry to new traders and avoidance of government regulations which applies only to organized wholesale markets within the administrative boundaries of Cairo and Alexandria.

8. Future Trade Requirements

There is little information on how the trade and wholesaling process works, which makes it difficult to project future growth trends. It is particularly difficult to envision exactly how the trade and wholesaling sector will respond to new areas of urban population. All of the new cities plans have used "rules of thumb" ratios in estimating retail and wholesale establishments and employment. Given the actual working of the process with its constraints and controls, the balance between public sector and private sector participation, and the policy to be adopted toward encouraging or discouraging the informal sector, it is uncertain whether the estimates are realistic and achievable. More study of this sector is needed.

The most elaborate set of projections for retailing and wholesaling in new urban settlements was developed by the Sadat City Plan. The other new cities followed similar, but less specific, methodologies. The Sadat City Master Plan estimated total employment in wholesaling and retailing at 14,025 to serve its expected population of 500,000. These estimates are presented in Table IV-43. The relevant breakdown of the Sadat City estimates for trade employment are presented in the following sections.

a. Government Sector Wholesaling. The government operates five major wholesale establishments, with their headquarters in Cairo and branches throughout the nation. Two of these wholesalers deal with clothing; two of them deal with food in general; and one deals solely with meats. These establishments provide goods to the retail stores and handle about 40 percent of the total wholesale business. As in the other government-owned service industries, the government makes the decision on the location of these wholesale establishments. One branch of each wholesaler employing about 25 persons is expected to be located in Sadat City for a population of 500,000, giving a total employment of about 125 persons.

b. Private Sector Wholesaling. According to the Wholesaling Census of 1970-71, there are about 25 different types of private wholesaling activities in Egypt. These are generally small-scale operations, oriented to serve localized markets, and employ about five persons per establishment. At least two stores of each category would be expected to locate in Sadat City resulting in about 70 private wholesaling establishments. With an average employment of five persons per establishment, an employment base of about 350 persons would be generated.

TABLE IV-43
EMPLOYMENT IN WHOLESALE AND RETAIL TRADE IN SADAT CITY WHEN ITS POPULATION REACHES 500,000

	Number of Stores	Workers per Store	Total Workers
A. Government Wholesaling Enterprises			
1. Clothing (Two enterprises)	2	25	50
2. Food (Two enterprises)	2	25	50
3. Meat (One enterprise)	1	25	25
	5		125
B. Private Wholesaling			
1. There are about 25 different activities	70	5	350
C. Government Retailing			
1. Department stores (5 companies x 5 stores)	25	30	750
2. Food Stores (1 company x 20 stores)	20	15	300
D. Private Sector Retailing			
1. 3,600 establishments employing more than five workers.			
2. 247,000 establishments employing less than five workers.			
3. A population of 500,000 would require:			
a. formal sector retail			6,000
b. informal sector retail			6,000
E. Regional wholesaling and retailing -- Sadat City as a regional center			500
F. TOTAL			14,025

SOURCE: Sabbour Associates. The Planning of Sadat City: Final Report, Ministry of Housing and Reconstruction, Advisory Committee for Reconstruction, September 1977, pp. 1.4-11 through 1.4-19.

c. Government Sector Retailing. Included in this category are department stores and government food stores (such as the Pyramid Company and the Nile Company). Five individual government companies operate the department stores. For Sadat City, it is expected that five branches would be set up by each major store, resulting in 25 department stores. Each employs about 30 persons, resulting in a total employment of 750 persons.

It is also assumed that about 20 food stores should be provided, with each government food store employing about 15 persons. This gives an estimated employment of about 300 persons.

d. Private Sector Retailing. According to the 1968 Census of Retailing, there were about 250,000 individual retailing establishments in Egypt. Of these, 3,600 employed five persons or more and 247,000 employed less than five persons. Using this and ratios of the number of persons in the retailing trades to the urban-based population, it is estimated that a city of 500,000 would require about 6,000 persons engaged in retailing. It is further estimated that about an equal number (that is, a ratio of approximately 1 to 1) would be peddlers or similar informal merchants engaged in the informal, low-service, retailing sector. Thus, for the private retailing sector, including peddlers, an estimated 12,000 persons would be employed.

e. Regional Wholesaling and Retailing. It is likely that Sadat City will act as a regional center for wholesaling and retailing. The extent of this activity is unknown due to the uncertainty associated with regional development around the city. A nominal increase in employment of 500 has been assumed.

f. Summary. For a city of 500,000, total employment in the wholesale and retail trade industries is expected to be about 14,000 persons. Of this number, about 500 are expected to be in wholesaling industries; and 13,500 in the retailing sector. The development of Sadat City as a significant regional center could cause employment to rise; it might then be more accurately described as basic employment.

9. Cairo Office Space

The Project has identified no studies of office space or office space requirements in urban Egypt. What studies have been done have been kept confidential for developers. Office space requirements have important ramifications for urban planning, yet have been given little attention in the studies done to date. At least in Cairo, as discussed below, there appears to be a shift taking place from informal office space in converted residential space to formal office space. The quantification of this trend and its potential spread to other urban centers deserves further study.

Office space in Cairo is found in buildings designed explicitly for business purposes and also in apartments that were originally designed as residences but converted into offices. No survey data is available on the number of offices in apartments (henceforth referred to as apartment office space) and only limited data is available on the supply of offices in business buildings (henceforth referred to as business office space). Nevertheless, conversations with building managers, realtors and users of office space suggest that apartment offices make up the majority of office space accommodation and business office space is in excess supply while there is a shortage of apartment office space. The reasons for this are:

i) A significant amount of business office space has been built since Law 43/1974 was enacted in 1974 in anticipation of more rapid economic growth than has occurred.

ii) Business office space is considerably more expensive than apartment office space; in the city centers for example, one major commercial bank rents 300 square meters of business office space for $75,000 per year ($250 per square meter), but can buy an apartment a block away at an equally advantageous location. Costs would be required to convert the apartment to offices, but the bank official interviewed believes the apartment offices would cost

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no more than two or three years of the bank's current rent, and then would be owned free and clear. Apartment office space, by contrast, can be rented for $10-$15 per square meter in prime business locations in Cairo.

iii) Apartment office space is of suitable quality for most businesses except for very large corporations that need larger units of integrated office space than are available in groups of adjacent apartments.

The difference in quality in modern office buildings and apartment offices found in older traditional buildings also contributes to cost differentials. The older buildings are heavy stone construction, usually ten storeys or less, usually with only one elevator, and invariably with no central air conditioning systems. By contrast, newer office buildings in Cairo are vastly superior.

Comprehensive data on the supply of business office space is believed to be available at the Investment Authority of the Government of Egypt. This organization grants investment business under Law 45, and consequently requires prospecting investors to submit detailed plans and construction schedules for new office space buildings.

A summary of the supply of business office space available in 1978 has been collected from a private source. These data, which are presented in Table IV-44, describe only office buildings that were under construction in 1978; they do not include, however, projects on the drawing board but not under construction.

Persons interviewed suggest that investors in these office buildings are mainly Arab banks, insurance companies and individuals. The demand for business office space is limited to mainly banks, investment companies, tourist service companies and professional services (especially legal services) and international assistance organizations.

D. The Small Scale Enterprise Sector

1. Definition of Small Scale Enterprise Groups[14].

There is no official definition of the informal or small-scale industry sectors in Egypt. Administratively, however, enterprises with one to nine workers, including employers and with less than L.E. 5,000 in fixed capital are under the jurisdiction of the Handicraft Industries and Productive Cooperatives Organization (HIPCO) within the Ministry of Local Government.

These establishments are considered to be the artisan sector. Establishments with 10 or more employees are under the jurisdiction of the Ministry of Industry, and establishments with more than 25 employees are required to join the Federation of Industries, a lobby group for the private sector which is subject to the Ministry of Industry. Smaller firms are permitted to join the Federation if they choose to do so.

TABLE IV-44
NEW OFFICE SPACE IN CAIRO UNDER CONSTRUCTION IN 1978

Building	Total Area m^2	Range of Sales Price per net m^2	Range of Annual Rent per net m^2
AIB Office Building	25,226 net	From $1,500 to $2,000	From $200 to $250
United Real Estate Co.	27,226 gross		
WTC (AIB)	26,200 net		
Cairo Plaza	39,353 gross		
Kuwait Real Estate Co. (Garden City)			
El Shams Project (Sarwat St.)	10,800 gross		
"Abu El Fida" Project	16,000 net		
Nile Tower	37,791 net		

SOURCE: NUPS

This entire group of establishments with less than 50 workers is important for several reasons.

i) They are predominantly situated in urban areas and may share a sufficient number of characteristics to be similarly affected by many urban policies.

ii) Both groups of establishments account for an important share of employment, and create additional jobs with much less capital than large firms.

iii) They provide rural migrants with a point of entry into the urban economy, thus creating employment opportunities outside the agricultural sector for groups that are disadvantaged in the labor market; consequently redistributing income toward poorer families.[15]

iv) They provide Egyptian emigrants abroad with investment opportunities for their remittances.

v) Small firms can perform an important subcontracting service to large firms.[16] They often can produce some items more efficiently than large establishments, and they can help meet short term increases in demand that require output in excess of the capacity of larger firms. Some public sector firms use sub-contracting as a way to resolve a combination of business problems such as controlled prices, compulsory production quotas of low quality goods intended for mass consumption by low income groups, relatively high wage rates and higher total labor costs due to over-manning and redundant personnel. Public firms involved in textile production, for example, subcontract some unprofitable or less profitable lines to small private sector firms, thus freeing their looms to produce high quality textiles whose prices are not controlled.[17]

Notwithstanding the similarities among all establishments with less than 50 employees, differences between them exist and have policy significance. These differences have been explored through distinctions between establishments in the informal sector and in the small scale industrial sector.

The definition of "informal sector" has undergone changes since it was initially introduced by Hart in the early 1970's. He considered wage and self employment as the essential difference between the formal and informal sector.[18] Staff at the World Bank have defined this sector as one in which the return to labor, whether or not it is in the form of wages, is determined by supply and demand.[19] In addition, a World Bank Study of small scale industry, which is defined as establishments with 10 to 49 employees, notes that the informal sector has no official definition in Egypt, but considers it to be roughly equivalent to the "artisan sector" which is defined to include establishments with less than ten workers.[20]

The informal sector is defined by ILO as a collection of micro-enterprises possessing one or more of a number of characteristics that distinguish them from the more organized, "modern" and usually larger scale enterprises of the formal sector. These characteristics include small scale of operation, ease of entry, use of indigenous technologies and local material, family participation in the enterprise, lack of access to direct subsidies and other government support measures, and a partly compensating lack of identifiability by the government for regulatory and tax purposes.[21]

In Egypt, the distinction between formal and informal sectors based on these definitions is often unclear. Certain establishments within the 10-49 employee size range included in this study could be considered to be in the informal sector, even though the term is usually applied to establishments with less than ten workers. Also ease of entry is often restricted by local management style, technical relations, and locational relations among establishments that are not generally reflected in the various definitions of the informal sector. Nevertheless, these characteristics have important implications for Egyptian planning of the future growth of this sector.

2. Linkages and Spatial Agglomeration of Informal Industrial Activity in Cairo

In Cairo, clustering of small industries, particularly in the old city of Cairo, is obvious to the casual observer. Clusters of industries are found in other parts of Cairo; approximately 15 pottery works are clustered south east of Ein El Sira, on the desert road between Cairo and Maadi; the Zabaleen, who remove all of Cairo's garbage, have an extensive and centralized dump where they live and recycle waste at Mansheit Nasser. Again, clusters of informal activities are located at the periphery of this dump. They manufacture such products as:

i) Rolled aluminum pots, pans and TV arials for most all of Egypt.

ii) Single burner portable stoves that burn pressurized kerosene and are made from rolled, stamped and cast components of copper and brass, which are later soldered together.

iii) Cast aluminum mortars, pestles and goblets.

The technologies used to manufacture these products conform to the ILO definition of the informal sector since they are indigenous. Equipment consists of hand operated metal rolling devices, simple, but effective aluminum molds for holding sand and molten aluminum, brick ovens for melting and spinning equipment powered by belt connected electric motors. All equipment is hand fed, non-automated, and without safety features; it is usually mounted on dirt or old concrete floors in rooms seldom larger than 6 meters square. Aluminum sheets approximately 2 x 3 meters in size are obtained from large-scale manufacturing establishments, but copper and brass are recyled by melting waste into ingots of 2-5 kilos which are, in turn, rolled to proper thicknesses for bending or stamping.

The organization of these establishments also conforms to the ILO definition of the informal sector in the sense that they are family run. The work force can be described in age groups: workshops are under the direct supervision of men in their early thirties or forties; sheet metal is fed into machines for cutting, beading or rolling by males between roughly 15 and 25 years of age; and males 6 to 15 carry away processed metal. Bookkeeping functions, if performed, are done by women of various ages. Overall supervision is performed by males 35 and over and ownership is often unclear, partly because buildings are constructed in squatter settlements without concern for land titles or construction permits.

These establishments have technical and locational relationships not mentioned in the ILO definition of the informal sector. Unlike western style factories where products are often completely fabricated in one establishment owned by one firm, technical tasks required to manufacture each product are distributed among a number of establishments, each of which is owned and operated by a different family.

This same division of technical tasks among establishments individually owned by different families occurs with the manufacture of most or all products produced in the informal sector. For the most part, the commercial /manufacturing activities in the urban center are highly interdependent and are not what industrial economists would call "foot loose" activities. The economic activities of the informal sector are highly dependent on each other in that commodities are produced only after a series of commercially independent workshops treat the same item in the process of production.*

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* The following exposition of the interdependence theme, using the leather industry and factories at Helwan Tebbin as examples, is taken from Sherif El Hakim and Associates, Social and Cultural Patterns Relevant to the Development of a National Urban Policy.

Leather, for example, is tanned and dyed, cut, embossed and printed by separate workshops before it can be sold in the form of leather bags, belts, and other products. It is the retailer who commissions (as producer) the separate specialized workshops. Furthermore, markets for products by such interdependent workshops are also in the same area where customers traditionally come for the products.

Entire quarters in the city are specialized in particular activities: iron scrap dealing and salvaging in Boulak; gold, leather and wood in the area of Gamalia. It is difficult, if not impossible, for an individual workshop to be relocated away from related activities and/or the markets. New activities can only be successful if set up in the vicinity of old activities of the same type. The expansion of activities accounts for much of the flight of residents from the city center since expansion can only take place in the limited quarters where activities are viable; hence, workshops displace homes in the city center.

The division of responsibility for manufacturing tasks and the locational clustering of establishments that occurs in the informal sector have important implications for the system of management control. This system controls both entry of new establishments into the sector and the role of current establishments in the production process. Bosses control the raw material, orders, and sales of the clusters of establishments manufacturing different products. When an establishment fails to conform to a boss's requirements another establishment is immediately found to perform the taks of the censured establishment in the production process. With manufacturing tasks divided among a number of establishments, each establishment is especially vulnerable to a boss's control since individually they produce no final products.

Similarly, expansion of production reinforces the boss's control. Individual establishments expand by increasing their capability to perform the specific tasks they currently perform. They do not begin to perform manufacturing tasks normally performed by other establishments. When viewed from this perspective, the informal sector must be recognized as a set of tightly integrated production systems of establishments. This is different from the ILO definition, which would define informal to include independent establishments that are unorganized and compete with each other. Moreover, the organization is so precise that operations of itinerant shoe polishers even are controlled. They are assigned territories, shoe shine boxes and other equipment in exchange for carefully determined payments.

The organization and production characteristics of the informal sector have numerous implications for urban development. Most important, the informal sector produces products and provides jobs that are essential to the functioning of urban settlements. The numerous household goods this sector produces are widely used throughout Egypt. Moreover, large numbers of workers rely on this sector for not only primary jobs but also secondary jobs that provide supplementary incomes needed to meet essential household expenditures. Hence, families may base relocation decisions not only on the availability of primary jobs in the formal sector, but also on secondary jobs in the informal sector.

Due to strong linkages between elements of the informal system, successful attempts to relocate portions of this sector probably will have to be negotiated through the bosses of the subsystems that produce the required products. The same procedure would be necessary to provide efficient financial assistance. Loans to individual establishments will usually not be an effective means to increase production or improve business performance. Relocation proposals and other policies designed to intervene in the informal sector should be directed to entire production subsystems within the sector. Moreover, policies should be developed only in conjunction with thorough research of the subsystems under consideration.

The restricted entry into certain components of the informal sector means that unrestricted entry will be possible only in jobs at the bottom of the ladder and characterized by relatively low earnings.

3. Policy Target Groups

Management structure and horizontal or vertical integration of production processes appear to be the most important characteristics that distinguish small-scale industrial establishments from informal sector establishments for purposes of public policies. These variables, of which three can be identified, seem to be appropriate criteria to use to identify target groups:

i) Establishments with a hierarchical management structure and a vertically integrated production process that can be characterized by provision within one establishment of a sequential series of manufacturing or service operations to produce a product or service.

   Chemical and textile factories that independently produce final products would be examples.

ii) Establishments with family management structures that perform no more than a few manufacturing or service operations but which are technically and locationally integrated with establishments, and which together perform a large number of manufacturing operations on a product and may be under the regular control or influence of a boss.

   For example, informal sector establishments that roll and cut aluminum sheets into round disks which are then passed on to other establishments where they stamp or spin the disks into pans or some other final product.

iii) Establishments with family management structures that perform a few specialized but routine manufacturing or service operations. These establishments are technically but perhaps not locationally independent of other establishments providing related work and are subject to only occasional control or influence by a boss.

Shoe polishers, who rent their territory and equipment but otherwise operate independently, are an example.

4. Total Employment in Small Enterprise Groups

Informal sector employment in 1976 was estimated at between 880,000 and 1.5 million workers[22] as shown in Table IV-45. Employment in this sector is considered to include the self-employed and workers in establishments with 1-9 employees (including the employer). For some groups such as trade and service workers, however, a more detailed definition is used which involves identifying self-employed within certain occupations and activities.[23]

TABLE IV-45
INFORMAL SECTOR LABOR FORCE AND EMPLOYMENT IN EGYPT IN 1976 AS DEFINED BY LUBELL AND ABDEL FADIL[1/]

OCCUPATION GROUP	LABOR FORCE & EMPLOYMENT IN 1976 LUBELL AND ABDEL FADIL STUDY
A. Independent Artisans & Craftsmen (Age 15 or older)	276,619[2/]
B. Informal Service Workers (Age 15 or older)	333,943[3/]
C. Odd Jobbers (age 15 and older)	
a. Casual stone cutters & rubble carriers	
b. Workers not classified by specific jobs or activities	
c. Workers who did not report their work activities	
d. Subtotal	258,899[4/]
D. Other workers not identifiable by occupation or work status (Age 6 and older)	630,539[5/]
TOTAL	1,500,000

SOURCES:

1/ Hareld Lubell and Mahmoud Abdel Fadil, Urban Growth and the Urban Labor Market. International Labor Organization Strategy Mission to Egypt, 1980.

2/ Ibid., pp. 42-51, especially Table 2.1. These workers are not tabulated by work status (e.g., employed or unemployed) so some unknown portion is not only in the labor force (available for work), but employed. Abdel Fadil does not discuss this issue at all; and Lubell and Abdel Fadil do not offer an estimate of employment within this group of workers. However, the 1.5 million persons Lubell and Abdel Fadil refer to as the non-agricultural active population, 6 years and over, are part of their aggregate population of 10,230 for Egypt as a whole — this aggregate active population is slightly less than the CAPMAS estimate of employment (10,281.2 thousand) in 1976 and considerably less than its estimate of the labor force for that year (11,131.6 thousand). See Appendix 3, Table 2.1 for the reason plus (a) the likelihood of underestimation of employment in the informal sector and (b) the part time or casual characteristics of many of the jobs in the sector, these workers are all considered as employed for the purposes of the study.

3/ Ibid., Table 2.5, p. 49.

4/ Ibid., Table 2.6, p. 50.

5/ Ibid., Table 2.7, p. 51.

The 630,539 "not identifiable" workers are all considered as employed for the purposes of this study for several reasons. Lubell and Abdel Fadil strongly suggest that some unknown portion of them are employed; tabulations simply have not been developed to indicate how large this portion is.[24] Many jobs in this sector are often part-time, casual and different in a variety of ways from jobs in the formal sector. Surveys will tend to undercount.

TABLE IV-46
EMPLOYMENT IN INFORMAL AND SMALL SCALE ENTERPRISES WITH LESS THAN 50 WORKERS IN THE PRIVATE SECTOR BY URBAN AND RURAL AREAS
(Thousands)

	1976 Employment
A. Informal Sector (includes establishments with 1-9 employees[1/]	
Urban[2/]	1,023.0
Rural[2/]	477.0
Subtotal	1,500.0
B. Small Scale Private Enterprises (establishments with 10-49 employees[1/]	
Urban[3/]	47.3
Rural[3/]	22.2
Subtotal	69.5
C. Informal Sector plus Small Scale Private Enterprises (A and B, above)	
Urban	1,070.3
Rural	499.2
TOTAL	1,569.5

1/ Employment includes employers.

SOURCES:

2/ The total is obtained from Lubell and Abdel Fadil (1980) Urban Growth and the Urban Labor Market, Table 2.1, p. 45; the urban/rural distribution is inferred from the urban/rural split of 880,000 of these 1.5 million workers in 1976 census data.

3/ Totals are from a 1970/71 census of establishments; the urban/rural division is inferred from the urban/rural split of the 1.5 million workers estimated to be in the informal sector from 1976 census data.

Besides the 1.5 million informal sector workers, it is estimated that 69.5 thousand workers are in private sector establishments with 10-49 workers. These data are summarized by urban and rural areas in Table IV-46. Total employment in establishments with 10-49 employees is assumed to be the same level it was in the 1970/71 establishment survey, the latest establishment survey for which data are available. The basis for this assumption is that the number of establishments in this size group is not changing significantly. Table IV-48 indicates, for example, that establishments with 10-49 workers numbered 3,570 in 1966/67 and slightly less, 3,495 in 1970/71. Establishments in this size group also comprised virtually the same fraction of all establishments with 10 or more workers in both surveys; they comprised 89.9 percent of this group of establishments in 1966/67 and 90.5 percent in 1970/71.

Table IV-46 indicates that total employment in all establishments with 49 or less

TABLE IV-47
EMPLOYMENT IN INDUSTRY
(Thousands)

Year	Public Sector[1/] No.	Public Sector[1/] Index	Private Sector[1/] No.	Private Sector[1/] Index	Total Industry No.	Total Industry Index	Share of Total Private Sector Percent
1966/7	445.0	100.0	401.7	100.0	846.7	100.0	47.4
1972	505.3	113.6	589.0	146.6	1,094.3	129.2	53.8
1973	514.9	115.7	597.5	149.0	1,112.4	131.4	53.7
1974	526.3	118.2	623.2	155.0	1,149.5	135.7	54.2

1/ Covers enterprises under jurisdiction of the Ministry of Industry; that is, establishments with 10 or more workers.

2/ Calculated as residual from total industrial employment.

SOURCE: Ministry of Industry and presented in World Bank, Survey of Small Scale Industry, 1977, p. 24.

workers was 1569.5 thousand workers in 1976. Of these employees, 1,070.3 thousand were estimated as working in urban areas while the balance, slightly less than 500,000 workers, were employed in rural areas. This 68/32 urban/rural split is based on the ratio of urban/rural employment found in the 1976 census data for the first three groups of occupations referred to in Table IV-45.[25] No reliable information is known to exist that describes the change over time in urban and rural employment in establishments with less than 49 workers.

5. Manufacturing Employment

Data on manufacturing employment comes from the 1966/67 and 1970/71 census of industrial production (CIP). Data for manufacturing establishments with 1-9 employees, however, is even more limited; it comes from only Part I of the 1966/67 CIP.[26] Even this census leaves out much of the manufacturing done in the informal sector due to the definition that was used for establishments. These were considered to be fixed, identifiable places of work. This means that jobbing artisans are completely left out, and that manufacturing activities within households are not fully covered. One author suggests that defective coverage of small units may lead to an underestimate of activity in small establishments of about 15 percent.

Rough estimates of total employment in private and public sector industries are presented in Table IV-47; a more detailed breakdown of private sector employment by size of firm is contained in Table IV-48. In 1966/67, total private sector employment was estimated at 401.7 thousand in Table IV-47 and 404.8 thousand in Table IV-48. Data presented in Table IV-47 cannot be corroborated from other sources, particularly since the CIP of 1970/71 did not collect information from firms with 1-9 employees; hence the blank for this row in Table IV-48. Nevertheless, Table IV-47 indicates that the private sector share of total employment is a large and growing proportion of total industrial employment, rising from 401.7 thousand or 47.4 percent of total industrial employment in 1966/67 to 623.2 thousand or 54.2 percent of the total in 1974.

TABLE IV-48
SIZE DISTRIBUTION OF EMPLOYMENT WITHIN ALL PRIVATE SECTOR MANUFACTURING ESTABLISHMENTS
1966-1967

Size of Establishment by Employment	No. of Establishments	Percent Distribution	No. of Workers 1/	Percent Distribution	Average Employment/Establishment
1-9 2/	144,090	97.3	283,900	70.1	2.0
10-24	2,734	1.8	41,221	10.2	15.0
25-49	836	0.6	28,201	7.0	34.0
50-99	254	0.2	16,798	4.1	66.0
100-499	135	0.1	24,978	6.2	185.0
500+	11	0.01	9,753	2.4	887.0
Subtotal (1-49)	147,660	99.7	353,322	87.3	2.4
Subtotal (10+)	3,970	2.7	120,951	29.9	30.5
TOTAL	148,060	100.0	404,851	100.0	2.7
1970-1971					
1-9 3/	--		--		--
10-24	2,572		39,213		15.2
25-49	923		30,343		33.0
50-99	214		14,468		68.0
100-499+	142		26,902		189.0
500+	10		11,184		1,118.0
TOTAL (10+)	3,861		122,110		31.6

1/ Includes employers.

2/ Small establishments are undercounted much more than larger establishments for several reasons. Smaller firms often escape enumerators, and itinerant jobbing artisans (i.e., those with no fixed place of work) were omitted from the 1966/67 CIP. Moreover, underreporting of employment, production and value-added is frequent among small establishments -- the incentive being to attempt to reduce tax burdens.

3/ Data concerning establishments with 1-9 workers is not available for 1970/71 at all, or for other years on a basis comparable to the 1966/67 data. The Handicraft Industries and Productive Cooperative Organization (HIPCO) surveyed the craft-oriented portion of these establishments in 1974. The survey did not include, however, certain processing activities and unskilled workers. Moreover, many self-employed persons may have avoided the enumerators.

SOURCE: World Bank, Survey of Small Scale Industry, 1977, p. 8. These data were collected by CAPMAS in the CIP of 1966/67 and 1970/71.

Table IV-48 indicates that about 70 percent of manufacturing employment was in establishments with 1-9 employees in 1966/67. Average employment including employers was two workers in these establishments, and 30.5 workers in establishments with ten or more workers. Employment averaged 2.7 workers per establishment for all private sector establishment during 1966/67. Although information concerning establishments with 1-9 employees is not available from the 1970/71 CIP, the data indicate that average employment grew in all but one size class of establishment, and it grew more in large establishments than in small ones.

The total number of firms with ten or more workers declined between 1966/67 and 1970/71 even though their total employment increased from 121,000 to 122,000. Information, however, is not available on the reasons for this reduction. Some firms may have gone out of business, but many may have increased in size, moving from the 50-99 size group to the 100-499 size group, for example.

Establishments with 1-9 employees, including employers are broken down into three size groups in Table IV-49. This table indicates that over half of these establishments are run by one person.

6. Employment by Economic Sector

A sectoral distribution of the employment in the informal sector and small scale enterprises is not available. It is available, however, for:

i) The 1.5 million workers estimated to be in the informal sector in 1976;

ii) The 283,900 workers estimated to be in manufacturing establishments employing 1-9 workers in 1966/67;

iii) The 584,336 workers estimated to be in manufacturing establishments employing ten or more workers in 1966/67.

These data are presented in Tables IV-50 and 51. Table IV-50 indicates that about half of employment in the informal sector is divided evenly between manufacturing and trade sectors, with manufacturing at 23.4 percent and trade, restaurant and hotels at 25.8 percent.

Other identifiable sectors containing significant amounts of informal sector employment are administrative, social and personal services at 18.1 percent; transport and storage at 11.2 percent; and building and construction at 9.3 percent.

Table IV-51 presents the distribution of employment among subsectors of manufacturing for two groups of establishments: those employing 1-9 workers, and those employing more than ten workers. Establishments employing 1-9 workers accounted for 32.7 percent of total manufacturing employment 1967. The informal sector employed more than

TABLE IV-49
SIZE DISTRIBUTION OF EMPLOYMENT WITHIN MANFACTURING ESTABLISHMENTS WITH LESS THAN 10 WORKERS 1/
1966-1967

Size of Establishment by Employment	No. of Establishments	Percent Distribution	No. of Workers 2/	Percent Distribution	Average Employment/Establishment
1	74,062	51.4	74,062	26.1	1
2-5	59,942	41.6			
6-9	10,086	7.0			
1-9	144,090	100.0	283,900		2

1/ Including employers.

2/ Including employers.

SOURCE: These data were taken from Robert Mabro and Radwan, op. cit., p. 119. The authors refer to these establishments as small scale manufacturing, but point out that the data include all establishments in the 1-9 size group and that 26 percent of their gross revenues accrue from the provision of services.

TABLE IV-50
EGYPT: EMPLOYED PERSONS AGED SIX AND OVER BY BRANCH OF ECONOMIC ACTIVITY, ESTIMATED FORMAL AND INFORMAL, EGYPTIANS ONLY, 1976
(In Thousands)

Branch of Economic Activity	Total	Estimated Formal Sector	Estimated Informal Sector	Informal Sector Present Distribution
	(1)	(2)	(3)	(4)
1. Agriculture, Forestry, Fishing	4,879	XX	XX	
Non-Agricultural (subtotal)	5,351	3,851	1,500	100.0
2. Mining, Quarrying	33	31	2	0.1
3. Manufacturing	1,367	1,017	350	23.4
4. Electricity, Gas, Water	62	62	--	--
5. Building, Construction	424	284	140	9.3
6. Trade, Restaurants, Hotels	856	470	386	25.8
7. Transport, Storage	479	311	186	11.2
8. Finance, Insurance, Real Estate, Business Services	88	88	--	--
9. Administrative, Social and Personnel Services	1,860	1,860	272	18.1
10. Unstated	182	--	182	12.1
TOTAL	10,230	XX	XX	XX

SOURCE: Harold Lubell and Mahmoud Abdel-Fadil, op. cit., p. 45. (Adapted).

TABLE IV-51
EMPLOYMENT IN MANFACTURING ESTABLISHMENTS EMPLOYING 1-9 AND 10 OR MORE WORKERS BY ECONOMIC BRANCH OF ACTIVITY, 1966-1967

Census Economic Code Branch	NUMBER OF WORKERS: Establishments Employing 1-9 (Handicraft Sector)	NUMBER OF WORKERS: Establishments Employing 10+	Total Manufacturing	PERCENT: Handicraft Sector As Share Of Total (1) ÷ (3)
	(1)	(2)	(3)	(4)
20. Food	38,385	78,779	117,164	32.6
21. Beverages	257	5,677	5,934	4.3
22. Tobacco	216	12,300	12,516	1.7
23. Textiles	31,659	247,627	279,286	11.3
24. Wearing Apparel (incl. shoes)	90,709	9,935	100,644	90.1
25. Wood	16,148	3,579	19,727	81.9
26. Furniture	27,849	8,882	36,731	75.8
27. Paper	1,067	13,489	14,556	7.3
28. Printing	3,312	13,550	16,862	19.6
29. Leather (other than shoes)	3,366	2,926	6,292	53.5
30. Rubber	293	4,115	4,408	6.6
31. Chemicals	921	46,164	47,085	2.0
32. Petroleum	10	10,194	10,204	0.1
33. Non-metallic products	8,846	32,623	41,469	21.3
34. Basic Metals	1,186	23,010	24,196	4.9
35. Metal Products	27,706	25,493	53,199	52.1
36. Non-electrical Machinery	2,441	8,967	11,408	21.4
37. Electrical Machinery	3,825	11,205	15,030	25.4
38. Transport Equipment	18,790	19,122	37,912	49.6
39. Miscellaneous	6,914	6,699	13,613	50.8
TOTALS	283,900	584,336	868,836	32.7

Col (1) and (2): Census of Industrial Production 1966/1967, Parts I and II.

SOURCE: Lubell and Abdel-Fadil, Urban Growth, p. 46.

half of the workers in the following types of manufacturing industries:

Manufacturing Industry		% of Informal to Total Employment
1.	Wearing apparel including shoes	90
2.	Wood	82
3.	Furniture	76
4.	Leather (other than shoes)	54
5.	Metal products	52
6.	Transport equipment	50

Establishments with 1-9 employees on average, account for 72.5 percent of employment in these six branches, that is 184,568 of the 254,505 workers in these branches. As stated earlier, no consistent data sources are available to determine the employment trend and structural changes in the small-scale industries mix. Nevertheless, a World Bank report on small-scale industries in Egypt[27] suggested that the structural changes that took place over the last ten years included an absolute decline in both the number of establishments and employment of the clothes and garments branch and a corresponding increase for woodwork and furniture. The observed decline in clothes and garments probably reflects inability of the small artisan to compete with larger establishments. The growth of the woodworking and furniture branch reflects rising incomes in particular segments of the population and the development of exports.[28]

On the other hand, Lubell and Abdel Fadil concluded that small-scale manufacturing has not changed much in the recent past. The opening up of the Egyptian economy since 1973 has had contradictory effects on this sector. On the negative side, opening the economy has increased competition in terms of quality of output available on the market. On the positive side, the general increase in aggregate demand during the present cyclical upswing has expanded markets for the very small scale manufacturing enterprises as it has for others; raw materials have become more readily available with the easing of foreign exchange constraints; and some of the very small enterprises have been able to obtain machinery and equipment (often for the first time) with financing from the development banks which are now allocating a small but significant share of their total loans to small scale enterprises. The Development Industrial Bank's Small Scale Enterprise Department has been particularly active in this area, with funding and encouragement from the World Bank and the U.S. Agency for International Development.[29]

It seems likely that the very small scale producers will hold their own for a while. They have a share of the low income market which they are not likely to lose if general income levels rise only slowly, and they are likely to find the resources to modernize and expand if general income levels rise more rapidly.

TABLE IV-52
INDEPENDENT ARTISANS AND CRAFTSMEN
(PRODUCTION AND CONSTRUCTION WORKERS),
BY OCCUPATION,
IN THE INFORMAL SECTOR,
PERSONS AGED 15 AND OLDER, 1976

Code	Occupation	Number	Percent	Rank
7-7	Food and Beverage Processors	22,711	8.2	4
7-9	Tailors, Dressmakers and Related	57,791	20.9	2
8-0	Shoemakers and Leather Goods Makers	18,473	6.7	5
8-1	Cabinet Makers and Related Woodworkers	33,479	12.1	3
8-2	Stone Cutters and Carvers	520	0.2	13
8-3	Blacksmiths, Tool Makers, and Related	12,676	4.6	9
8-4	Non-electrical Machinery Fitters, Mechanics and Related	17,875	6.4	7
8-5	Electrical Machinery Fitters and Related	10,220	3.7	11
8-7	Plumbers, Welders, Sheet Metal and Structural Metal Workers	17,907	6.5	6
8-8	Jewelry and Precious Metal Workers	824	0.3	12
9-3	House painters	13,478	4.9	8
9-4	Production Workers, n.e.c.	11,066	4.0	10
9-5	Bricklayers, Carpenters, Other Construction Workers	59,599	21.5	1
	Total Self Employed Production and Construction Workers (excluding transport equipment operators)	276,619	100.0	

SOURCE: Lubell and Abdel-Fadil, Urban Growth, p. 49, CAPMAS, 1976 General Census of Population and Housing.

Shoe manufacture has been one of the more dynamic activities within very small-scale manufacturing, in part because of large export orders obtained under trade agreements with Eastern Europe and the USSR and allocated to individual producers through the footwear cooperative.

7. Selected Occupational Groups

The 1976 census provides tabulations of three occupational groups, by work status. These groups include independent artisans and craftsmen, informal service workers, and odd jobbers. (See Table IV-52)

The Lubell and Abdel Fadil study points out that other groups within the informal sector were not analyzed in such detail because the 1976 census data are not tabulated by work status and branch of economic activity.

Based on Table IV-52, the most dominant artisans and craftsmen activities are construction workers and tailors and dressmakers. The employment shares of these two groups amounted to 21.5 percent and 20.9 respectively. A majority of tailors and dressmakers generally operate at home, not in business establishments. Most of the self-employed carpenters, plumbers, blacksmiths, house painters and shoe repairers tend to be itinerant artisans.

A breakdown of the service worker component of the informal sector is present in Table IV-53. The largest census category in this occupational group for 1976 is self-employed transport operators (70,624), followed by domestic servants (36,766).

The third occupational group of informal sector occupation is referred to as odd jobbers. They totalled 258,899 workers in 1976 and are

identified in the 1976 Census of Population under three categories, as shown in Table IV-54:

i) 115,129 jobbing diggers, rubble carriers, other heavy load porters, and casual laborers;

ii) 55,488 persons classified as claiming neither an occupation not a specific economic activity;

iii) 88,282 persons who declined to report the exact nature of their jobs or activities.

The estimate excludes those identified in the cross-tabulation of occupation by branch of economic activity as belonging to agriculture, manufacturing, and public administration and defense.

TABLE IV-53
SERVICE WORKERS, BY OCCUPATION, IN THE INFORMAL SECTOR, PERSONS AGED 15 AND OLDER, 1976 1/

Code	Occupation (and Work Status or Branch of Economic Activity	Number	Percent	Rank
5-3	Waiters and cooks (self-employed)	10,471	5.6	6
5-4	Domestic servants (in personal service)	36,766	19.8	2
5-5	Cleaners, caretakers, (in personal service)	21,477	11.6	3
5-6	Launderers, cleaners, troners (self-employed)	9,084	4.9	7
5-7	Hairdressers (self-employed)	17,937	9.7	4
9-7	Porters, material handlers (in personal service)	2,541	1.4	8
9-8	Traditional transport operators (self-employed)	70,624	38.0	1
5	Other unclassified services	16,738	9.0	5
		185,638	100.0	

1/ As indicated in the line titles, the informal sector participants have been identified by cross tabulating occupation with work status (self-employed) or with branch or activity (personal services).

SOURCE: Lubell and Abdel-Fadil, Urban Growth, p. 50, CAPMAS, 1976 General Census of Population and Housing. Detailed results of the entire country (in Arabic), Cairo (September 1978).

8. Labor Productivity

Labor productivity patterns by size of enterprise in individual industrial branches are not available, but Table IV-55 contains estimates of labor productivity by size of establishment in all industrial branches, for 1970/71. The most highly capital-intensive and large-scale enterprises, those with 500 or more workers, account for 54 percent of total net value-added. Establishments in the 10-49 employment bracket contributed 22 percent while those in the 50-500 group produced 26 percent, a considerable contribution from small scale industry.[30]

Labor productivity rises with establishment size, although not very rapidly in establishments employing up to 100 workers. This probably reflects the low level of investment and technology in the private sector and the relatively small importance of scale economies. Absolute levels of productivity, because of under-reporting and difficulties in estimation, are likely to be higher. Yet conditions in the production and management fields inimical to efficient operation have undoubtedly kept productivity below attainable levels. Among external factors adversely affecting productivity are substitution and backwash effects caused by the establishment of larger scale industries in the public sector in competing products (e.g. textiles, food processing), slow growth of demand among low income consumers, difficulty in obtaining imported raw materials, marketing problems and difficulties in securing credit.[31]

TABLE IV-54
ODD JOBBERS IN THE NON-AGRICULTURAL INFORMAL SECTOR 1976

Code	Occupations	Total	Less: Agriculture	Less: Manufacturing	Less: Administration/Defence	Adjusted Total
9-9	Diggers, Rubble Carriers, Other Heavy Load Porters and Casual Laborers	131,960	--	13,368	3,463	115,129
0-2	Persons Not Classified By Specific Jobs or Activities	64,111	1,611	4,135	2,877	55,488
0-3	Persons Who Did Not Report Their Exact Activities	117,774	20,337	5,302	3,853	88,282
	Total of Above Categories	313,845	21,948	22,805	10,193	259,899

SOURCE: Lubell and Abdel-Fadil, Urban Growth, p. 51. CAPMAS, 1976 General Census of population and Housing, Detailed Results for the Whole Country (in Arabic), Cairo (September 1978), pp. 222-225, 374-381.

The World Bank report suggests that the major problems adversely affecting production include:

i) Out-of-date machinery;

ii) Deficient production engineering and management, product design and development, production planning and work methods, material selection, quality control, and preventative maintenance;

TABLE IV-55
DISTRIBUTION OF VALUE-ADDED AND LABOR PRODUCTIVITY IN MANUFACTURING ESTABLISHMENTS (PRIVATE SECTOR) BY SIZE OF ESTABLISHMENT IN 1970-1971

Establishment Size (by Employment)	No. of Employees	Net Value-Added (000 L.E.)	Net Value-Added Per Worker (L.E.)	Index
10- 24	39,213	7,976	203	100
25- 49	30,343	8,046	265	130
50- 99	14,468	4,462	308	152
100-499	26,902	12,564	467	230
500 +	11,184	39,105	3,496	1,722
TOTAL	122,110	72,153	590	

SOURCE: World Bank. Survey of Small Industry, p. 9.

iii) Poor working conditions and housekeeping, in part due to shortage of space;

iv) Marketing problems.

Not all of these apply to very small establishments. Their relative importance varies with the particular industrial activity and size of establishment.* The presence of these problems does not mean to imply that small enterprises are necessarily inefficient. But it does attest to a built-in weakness, the lack of specialized technical and managerial expertise within a small organization.

9. Government Role

a. Goverment Organizations. There are a large number of government regulations and practices to control the private sector. They are designed to have direct impacts on all aspects of enterprise operations including procurement of raw materials, wage and employment standards, investment division, pricing policies and import and export control.

Table IV-56 presents a summary of government regulations and implementing organizations that control business activities of the various types of private enterprises. Responsibility for control of private sector enterprises is allocated to different government agencies on the basis of establishment size and type of regulation.

Establishments with nine or less workers are referred to as artisan industries and are generally subject to the Handicraft Industries and Productions Cooperative Organization (HIPCO). Many government regulations affecting these small establishments are the responsibility of

* For detailed information about these deficiencies in five industries, engineering, chemicals, woodworking, leather and ready made garments, see World Bank, Small-Scale Industries, Annex 27 and 28.

TABLE IV-56

GOVERNMENTAL ADMINISTRATIVE STRUCTURE AND FUNCTIONS FOR PRIVATE SECTOR INDUSTRIAL ENTERPRISES

ENTERPRISE DESCRIPTION			SPECIFIC ADMINISTRATIVE JURISDICTION		
EMPLOYMENT & CAPITAL	INDUSTRY	GENERAL ADMINISTRATIVE JURISDICTION	LICENSING PROCEDURES	INDUSTRIAL SITE APPROVAL	CONSTRUCTION MATERIAL LICENSES
ARTISANAL: -- Less than 10 workers -- Less than L.E. 5,000 in Fixed Capital	ALL INDUSTRIES	HANDICRAFT INDUSTRIES AND PRODUCTIVE COOPERATIVES ORGANIZATION (HIPCO)		ALL ENTERPRISES MUST RECEIVE APPROVAL FROM: -- Relevant Governorate -- Ministry of Housing -- GOFI	ALL ENTERPRISES MUST RECEIVE LICENSES FROM THE MINISTRY OF HOUSING
-- Employ 10 or more workers -- More than L.E. 5,000 in fixed capital	RICE AND FLOUR MILLS ICE MAKING FACTORIES	MINISTRY OF CIVIL SUPPLIES	GENERAL ORGANIZATION OF INDUSTRY (GOFI) OF THE MINISTRY OF INDUSTRY MUST APPROVE ALL INVESTMENTS EXCEEDING L.E. 8,000. APPROVAL IS BASED ON: -- Sector Capacity -- Raw Materials Requirements Given Foreign Exchange Constraints.		
	HOUSEHOLD PRODUCTION IN RURAL AREAS (e.g., Knitting and Garments)	MINISTRY OF SOCIAL WELFARE			
	PHARMACEUTICAL FACTORIES	MINISTRY OF HEALTH			
	COTTON GINNING AND ONION DEHYDRATION PLANTS	MINISTRY OF COMMERCE			
	ALL OTHER INDUSTRIES	MINISTRY OF INDUSTRY			
-- Employ 25 or more workers -- More than L.E. 5,000 in fixed capital	AN ASSOCIATION OF ALL INDUSTRIAL ENTERPRISES (PRIVATE AND PUBLIC) GROUPED INTO 12 INDUSTRIAL BRANCHES.	THE FEDERATION OF INDUSTRIES, A PRIVATE SECTOR FACILITATOR SUBJECT TO MINISTRY OF INDUSTRY (See Appendix 7)			

SPECIFIC ADMINISTRATIVE JURISDICTION				
CAPITAL GOODS IMPORTS		RAW MATERIALS IMPORTS		
WESTERN SOURCES	EAST EUROPEAN SOURCES	EAST EUROPEAN SOURCES	WESTERN SOURCES	PRICE AND QUANTITY CONTROLS
ALL PRIVATE SECTOR REQUESTS MUST BE APPROVED BY GOFI, TAKING INTO ACCOUNT THE POSSIBLE EXCHANGE SOURCES WHICH ARE: -- The Development Industrial Bank -- The Parallel Market -- "Own Exchange Scheme" USE OF THE PARALLEL MARKET ALSO REQUIRES: -- Approval from the Parallel Market Determination Committee -- An Import License from the Parallel Market Decision Committee in the Ministry of Economy		IMPORT LICENSES ARE GRANTED BY A SPECIAL COMMITTEE IN THE MINISTRY OF FINANCE	HIPCO IS RESPONSIBLE FOR IMPORT APPROVAL FOR FIRMS WITH LESS THAN L.E. 5,000 IN FIXED CAPITAL. INDUSTRIAL CONTROL DEPARTMENT (ICD) OF THE MINISTRY OF INDUSTRY APPROVES FOR ALL FIRMS WITH MORE THAN L.E. 5,000 IN FIXED CAPITAL. AFTER APPROPRIATE APPROVAL, IMPORT LICENSES ARE PROVIDED BY THE PARALLEL MARKET DECISION COMMITTEE	DECISIONS TO CONTROL SELECTED PRICES ARE DETERMINED BY AN INTER-MINISTERIAL COMMITTEE THAT INCLUDES THE MINISTRIES OF: -- Commerce -- Finance -- Economy ICD ADMINSITERS PRICE REGULATIONS AND MINIMUM QUALITY STANDARDS SET BY THE EGYPTIAN ORGANIZATION FOR THE STANDARDS OF THE MINISTRY OF INDUSTRY. (See Appendix 9)

other branches of government, however. For example, industrial site approval for establishments of all sizes is the combined responsibility of the appropriate local government at the governorate level, the Ministry of Housing and the General Organization of Industry (GOFI) - an agency of the Ministry of Industry.

Table IV-56 indicates that establishments which employ ten or more workers and have more than L.E. 5,000 in fixed capital are similarly affected by the governmental controls implemented by a variety of agencies. For these large establishments governmental control is allocated among agencies on the basis of the industrial classification of the establishment. For example, rice and flour mills are controlled by the Ministry of Civil Supplies, while cotton gins and dehydration plants are under the jurisdiction of the Ministry of Commerce.

The regulations summarized in Table IV-56 pose formidable hurdles for private sector firms, as much because of delays and uncertainty in implementing the regulations as in the regulations themselves. The new economic policy initiative as expressed by the "infitah" or open door policy of 1973 purported to reduce entrepreneurial uncertainty about the prospective role of private initiatives. So far, the governments measures aim primarily at easing various bureaucratic requirements, particularly those related to issuing licenses and foreign exchange restraints for the importation of raw materials and equipment.[32] The more important of these are:

i) Fractionalized responsibility for small enterprises among numerous ministries as expressed in Table IV-56 reduces governmental ability to uniformly develop and administer regulations.

ii) Taxation and duties on imports of capital goods.

iii) A 10 percent price margin in favor of the public sector in government purchases.

iv) Inadequate buildings and space within them.

RELOCATION POLICIES DESIGNED TO INTERVENE IN THE INFORMAL SECTOR SHOULD BE DIRECTED TO ENTIRE PRODUCTION SUBSYSTEMS WITHIN THE SECTOR

v) Inadequate telecommunications and transportation.

vi) Slow procurement of raw and intermediate materials handled through public companies.

vii) Inadequate financial assistance for both small-scale industry and the artisan sector.[33]

b. Financial Assistance. Lack of access to institutional finance, particularly for small firms, is also noticeable. The true dimensions of its extent and severity are unclear, in view of the reluctance of many small firms to seek financial assistance from banking institutions.

Often, owners are unwilling to disclose their true financial position or are afraid of possible interference from the bank with their operations.

The cooperative system provides virtually no credit to its members, nor does it act as a facilitator of credit from other sources. Some assistance to members is provided through bulk purchase of materials and by obtaining approvals of foreign exchange requirements for imports. Some cooperatives in the ready-made garments, shoemaking and furniture making industries purchase all or part of their members output.

Currently, institutional financing to small firms is provided by the National Bank, the Nasser Social Fund, and the Development Industrial Bank. The activities can be summarized as:

i) The National Bank:

This institution introduced a "small loans scheme" in 1965 to cater to the needs of artisans. It has now a special department with ten staff members. The National Bank provides mainly short-term and occasionally medium-term local currency loans. At the end of 1975, outstanding loans to small firms amounted to L.E. 486,000 (compared with a portfolio of L.E. 1.4 billion) involving 3,475 clients. The average loan size is very small—less than L.E. 150. The loans extended are by regions: 69 percent in lower Egypt and the Canal Zone; 20 percent in Upper Egypt; and 11 percent in Cairo and Alexandria. An additional L.E. 2-3 million loans are made to middlemen who place orders with various small artisans.

ii) The Nasser Social Fund:

Because of the social character of its loans, it cannot charge interest. Loans are made primarily for such social purposes as education, and pilgrimages, but some are made for productive purposes. Small firm financing has been limited to bulk purchasing from abroad of machinery and equipment such as lathes and woodworking tools, taxis, tourist buses, and resale on an installment basis. It normally requires a 10-20 percent down payment and extends credit up to three years. It occasionally grants credit for raw materials to members of cooperatives, which is repaid when the final product is sold. Such loans are guaranteed by members of the cooperative committee. The Nasser Fund charges a fee for its services. Total lending to small establishments has not been very significant.

iii) Development Industrial Bank (DIB):

This institution remains by far the major supplier of short and medium term funds to small firms. During the first six months of 1977, short-term financing for Small Scale Industry (SSI)[34] accounted for about 75 percent (some L.E. 3.5 million) of DIB local currency approvals. During the same period, medium - and long-term lending to SSI amounted to 18 percent (L.E. 3 million) of total approvals in the private sector. About one-half of DIB's loans are concentrated in the Greater Cairo area. Food processing, textiles (especially dyeing and finishing), chemicals, engineering and woodworking are the major borrowing industries.[35]

c. Technical Assistance. The Handicraft Industries and Productive Cooperatives Organization (HIPCO) under the Ministry of Local Government has responsibility for providing training and extension services in the artisan sector; that is, those establishments with nine or fewer workers.

However, the World Bank has concluded that HIPCO is neither organized nor adequately staffed and funded to provide the necessary extension services.

Technical assistance to establishments with 10-49 employees is provided through a program administered by the Development Industrial Bank and implemented through three organizations:

i) Engineering and Industrial Design Development Center.

ii) Productivity and Vocational Training Department of the Ministry of Industries.

iii) Federation of Egyptian Industries.

The Engineering and Industrial Design Development Center, which operates as an autonomous agency, organizes and delivers extension services, provides skill upgrading in fields such as precision engineering, and helps prepare projects. The Productivity and Vocational Training Department (PVT) in the Ministry of Industry is entrusted with the provision of accelerated training. The Federation of Egyptian Industries (FEI) provides a series of lectures on such subjects of management as cost accounting, financial control, marketing, and related subjects. A steering committee, consisting of representatives of the three implementing agencies, DIB and the Ministry of Industry coordinates the various training related functions.

FOOTNOTES

(Section A)

1 Master Plan for Water Development and Use, 2nd Interim Report, August 1979.

2 NUPS Working Paper, The Agricultural Resource Base Status and Expectations, Weidemann, December 1980. p. 9.

3 Pacific Consultants. New Land Productivity in Egypt, January 1980. pp. 7-8.

4 Weidemann, op. cit., p. 21.

(Section B)

5 Farid, Rafik, Temporal Analysis of Settlement Size Distributions and Economic Development, Egypt 1882-1966, unpublished Ph.D. Thesis, Cornell University, pp. 187-194.

6 CAPMAS, Statistical Indicators for the Planning Regions, June 1978.

7 Ministry of Planning, The Transitional Plan, July 1974 - December 1975.

8 Ikram, Khalid, Economic Management in a Period of Transition, A World Bank Country Economic Report, p. 256.

9 President Anwar El-Sadat, The October Working Paper (Cairo: Arab Republic of Egypt, Ministry of Information, May 1974). This document was approved by national referendum in May 1974.

10 See most recently, IFC, Report and Recommendations on Development of Capital Markets in Egypt, Washington, January 1981 (draft).

11 Small-scale industry is here defined as those industrial establishments employing 10-50 workers. (See Ikram, op.cit., p. 246, and World Bank, Survey of Small-Scale Industry in the Arab Republic of Egypt, December 1977.)

12 Under Law No. 26 of 1954, as amended, 25 percent of the company net profit (after 5 percent is laid aside to purchase government bonds) shall be allocated to the workers: 10 percent directly, 10 percent for central social services, and 5 percent for housing and social services. (Article 14)

13 Moharram, Sobhi, and Gorvine, Albert, Decentralization in Egypt: Law and Practice, Cairo, National Urban Policy Study, October 1980, pp. 31-32.

(Section D)

14 See World Bank, Arab Republic of Egypt: Survey of Small-Scale Industry, Report No. 1818-EGT, December 1977, p. 1; Mahmoud Abdel Fadil, Informal Sector Employment in Egypt, ILO Comprehensive Strategy Mission to Egypt, 1980, p. 8; and Harold Lubell and Mahmoud Abdel Fadil, Urban Growth and the Urban Labor Market, ILO Employment Strategy Mission to Egypt, 1980, pp. 35-41 and Appendix A.

15 Suzanne Berger, Problems and Prospects of Egyptian Small-Scale Industry, Massachusetts Institute of Technology, 1978, pp. 9-10.

16 Subcontracting practices between small and large firms are described in detail in Suzanne Berger, Egyptian Small-Scale Industry, pp. 10-12.

17 Lubell and Abdel Fadil, Urban Growth, p. 60.

18 Keith Hart, Informal Income Opportunities and Urban Employment in Ghana, Journal of Modern African Studies (London), Vol. 11, No. 1, March 1973, pp. 41-89.

19 Lyn Squire, Labor Force, Employment and Labor Markets in the Course of Economic Development, World Bank Staff Working Paper No. 336, 1979, p.43.

20 World Bank, Survey of Small-Scale Industry, p.1.

21 Lubell and Abdel Fadil, Urban Growth and the Urban Labor Market, p. 35.

22 Lubell and Abdel Fadil, op.cit., especially Table 2.1, p. 45 and Table 2.4, p. 48. These authors state that employment in the informal sector exceeds 880,000 workers, but they do not explicitly refer to the 1.5 million workers as maximum employment in the sector.

23 See Abdel Fadil, p. 25 and Lubell and Abdel Fadil, p. 50.

24 Lubell and Abdel Fadil, pp. 42-43.

25 The original source was CAPMAS. Lubell and Abdel Fadil, Urban Growth, p. 48.

26 Robert Mabro and Samir Radwan, The Industrialization of Egypt, 1939 - 1973, Clarendon.

27 World Bank, Survey of Small-Scale Industry, pp. 12-14.

28 Ibid., p. 13.

29 Lubell and Abdel Fadil, Urban Growth, pp. 41-42. The findings of both the World Bank and Abdel Fadil studies are based on a comparison of 1966-67 Census of Industrial Production and 1974 Survey by the Handicraft Industries and Productive Cooperatives (HIPCO).

30 World Bank, Survey of Small-Scale Industry, p. 9.

31 Ibid. p. 9.

32 Ibid, p. 31.

33 This list is taken from Ibid., pp. iii and 37-38.

34 SSI is defined for this purpose as establishments with fixed assets up to L.E. 170,000.

35 This summary is based on 1977 information derived from Ibid., pp. 35-36.

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V. NATIONAL INFRASTRUCTURE NETWORKS

A. Transportation*

Despite the generally rectangular character of Egypt, from a transportation viewpoint, the most singular characteristic of the country is its linear configuration of economic activity and the highly concentrated character of its population within a relatively few urban locations. Almost all of the major transportation links follow the course of the Nile south to north with a few links outside the Nile Valley and the Delta mainly to the Red Sea to the east and Libya to the west.

The Nile Valley and the Delta account for only about 35,000 square kilometers (out of about 1 million) but almost all of the population settlements and economic activity. Furthermore, present trends suggest even higher levels of concentration of population and economic activity. This concentration has also had a profound impact on the interurban networks which have in turn further reinforced the linear concentrations. Given the relatively large share of bulk commodity movements and the linear character of the networks, rail should have a distinct advantage. In fact, movements are largely by truck as may be seen in Table V-1.

1. Freight and Passenger Movements

a. Freight Transport. In 1979, road transport accounted for about 80 percent of the freight tonnage and 70 percent of the ton-kilometers — by far the largest share of any of the modes. Forecasts for the year 2000 prepared as part of the Phase II National Transport Study calls for substantial growth in the rail sector (about three times) and pipelines (about five times) but the relative share of the road sector will remain substantial and largely unchanged. (Table V-1)

* At the time this report was prepared, only quarterly progress reports were available from the Phase II National Transportation Study.

b. International Ports. In terms of foreign trade, Alexandria in 1978 was the primary port of Egypt, accounting for about 70 percent of imports and exports, excluding the petroleum trade. (Table V-2) In 1978, the port of Alexandria handled about 11 million tons of imports and exports, and not surprisingly the port was characterized by a considerable capacity problem and associated congestion. There appears to be some differences in viewpoint on how to solve the problem.

TABLE V-1
FREIGHT TRANSPORTATION IN EGYPT BY MODE

	1979		2000 (low growth)
	Tons (10^6)	Ton-km (10^9)	Tons (10^6)
Rail	5.0	1.8	15.3
Waterways	4.3	1.6	7.2
Road	73.3	10.8	200.7
Pipelines	6.7	1.1	31.4
TOTAL	89.3	15.3	254.6

SOURCE: NEDECO, Egypt National Transport Study, Draft Final Report, 1981, Annex II, p. 2.5 Table 2.7; p. 2.196, Table 2.81: p. 2.202 paragraph 2.8.2.

TABLE V-2
FOREIGN TRADE IN MAJOR EGYPTIAN PORTS
EXPORTS & IMPORTS — 1978
(In 1,000 Tons, Excluding Petroleum)

Port	Imports	Exports	Total	
			Tons	Percent
Alexandria	10,370	879	11,249	71
Port Said	2,520	263	2,783	18
Safaga	1,030	75	1,105	7
Suez	520	122	642	4
TOTAL	14,440	1,339	15,779	100

SOURCE: NEDECO, Phase II National Transportation Study, Project Final Report, Main Report, page 136, Par. 227.

The port system of Egypt consists of four major facilities — Alexandria, Port Said, Suez and Safaga. Although there are a number of smaller ports, these four main ports handled, in 1978, 15.8 million tons of cargo, of which 14.4 million were imports.

Alexandria handled most of the general cargo and almost all of the dry bulk and liquid cargo as apart from exports of phosphates through Safaga.

A number of studies have been undertaken to explore the feasibility of a new port of Damietta and for port development policy in general. It is sufficient to note that the feasibility of alternate ports such as Damietta, Port Said, Suez and Safaga would be substantially affected by the patterns of regional development. Alexandria's share is likely to decline although its absolute volumes will continue to be substantial. Table V-3 summarizes the Frederic R. Harris forecasts for these five ports for 1980 through the year 2000. Setting aside variations reflecting the different rates of development assumed for each of the ports, it is quite evident that Alexandria continues to play a major role in foreign trade.

TABLE V-3
PORT CARGO FORECASTS
IMPORTS PLUS EXPORTS, 1980-2000

Port	Million Metric Tons			Percent Distribution		
	1980	1985	2000	1980	1985	2000
Alexandria	8.4	7.7	24.7	61	34	47
Damietta	--	4.9	10.7	--	22	20
Port Said	2.8	1.0	1.3	20	4	3
Suez	1.6	1.5	7.4	11	7	14
Safaga	1.0	7.5	8.6	8	33	10
TOTAL	13.8	22.6	52.7	100	100	94

SOURCE: Frederick R. Harris, Port Development Policy 1980-2000, January 1980, Table 6.1 through 6.4.

Closely related to foreign trade is the Egyptian shipping fleet which in 1977 contained 57 ships with a total dead-weight tonnage of 367.5 thousand tons. Over 80 percent of the tonnage was operated by the publicly-owned Egyptian Navigation Company, and this company carried less than 500,000 tons of general cargo in 1975 or only about 6 percent of total Egyptian general cargo trade.

c. **Airports.** In terms of civil aviation, the civil system consists of major international facilities at Cairo and Luxor, and nine domestic airports. Four of the domestic airports are on the scheduled services of Egypt Air (the only domestic carrier). The remaining airports do not have regular service. Cairo Airport in 1978 handled 3.7 million passenger movements. Air freight is of minor importance in terms of most commodities with the exception of specific "high value" goods or specialized equipment. However, over the period 1968-1978, air freight grew at an annual average rate of 14.5 percent for international cargo.

It is quite evident that the preponderance of air traffic is associated with international tourist travel which has been growing at the rate of about 14 percent per annum. In 1978, 1.7 million passengers arrived by air — about 90 percent by scheduled service. The importance of tourism is reflected in 1978 data on tourists arriving by air and shown in Table V-4.

In terms of domestic movements, an origin-destination matrix prepared by NEDECO for 1978 indicates a total of about 421,000 passenger movements indicating the relatively smaller share of domestic air transport. Even that number is not purely domestic in that it contains a significant share of tourists travelling to Luxor, Aswan and Abu Simbel. The NEDECO team estimated that 90 percent of the passengers originating in Cairo with domestic destinations were tourists. Of the total of 421,000 passenger movements shown for 1978, over 99 percent were using the primary tourist links confirming the large share of tourist travel even within domestic air travel. (Table V-5)

TABLE V-4
PASSENGER ARRIVALS AT CAIRO INTERNATIONAL AIRPORT AND TOURIST SHARE OF ARRIVALS BY AIR, 1978

ITEM	SCHEDULED	NON SCHEDULED	TOTAL
1. Passengers arriving at Cairo International Airport	1,568,000	179,000	1,745,000
2a. Number of tourists visiting Egypt (including businessmen)	--	--	1,052,000
b. Arrival by air	--	--	790,000
c. Percent by air	--	--	75.0

SOURCE: NEDECO, Quarterly Progress Reports, 1-15-80, page 9.5.

TABLE V-5
DOMESTIC AIR TRAVEL
PASSENGER MOVEMENTS BETWEEN SELECTED CITIES
1978

LINK	No.
1. Cairo - Luxor	65,711
Luxor - Cairo	68,796
2. Cairo - Aswan	36,355
Aswan - Cairo	36,953
3. Cairo - Abu Simbel	13,929
Abu Simbel - Cairo	11,172
4. Luxor - Aswan	15,403
Aswan - Luxor	16,525
5. Aswan - Abu Simbel	70,928
Abu Simbel - Aswan	73,142
6. Cairo - Hurgada	5,023
Hurgada - Cairo	5,333
TOTAL TRIPS FOR SIX (6) LINKS	419,270
PERCENT OF ALL O-D's (421,265)	99.5

SOURCE: NEDECO same as Table V-6, Table 9.3.

Details of these domestic movements (previously discussed) are shown in a 1978 O-D trip matrix prepared by the Phase II Study Team. (See Table V-43 at the end of Section A.) A similar matrix has been included for 1979 passenger trips (Table V-44) and air freight movements (Table V-45). The only comment that is relevant is that in addition to the passenger concentrations previously discussed, air freight movement is even more limited — Cairo accounted for 1,021 tons of originated domestic traffic in 1978 out of a total of 1,056 tons for 97 percent of the total traffic originating. In terms of destinations, Luxor and Aswan accounted for 97 percent of the destinations for Cairo-originated air freight traffic. (See Table V-45)

d. Passenger Transport. In terms of passenger transport, Table V-6 summarizes the major volumes of passenger movement for each mode over the period 1975-1979 with the exception of air transport. The table shows both interurban and urban volumes and modal splits for 1965-1979.

As may be seen, in 1975 in terms of estimated passenger kilometers, out of a total of about 58 billion km, they were about evenly split between urban and interurban travel. In terms of interurban travel (30.2 billion passenger km), about 40 percent was by rail and about 30 percent respectively by bus and passenger car and taxi (the latter two being a combined total).

Not unexpectedly, rail only played a minor part in urban travel as compared to bus and the private car and taxi. As may be seen, buses accounted for about 42 percent of the total estimated urban passenger kilometer — reflecting the relatively low levels of car ownership. If the taxi component of cars is taken into account, the public transit share is even higher.

Perhaps more significant is the interurban modal split data shown for the period 1965-1979. The passenger car/taxi share has steadily been increasing, rising from an estimated 22 percent of passenger kilometers in 1965 to 36 percent by 1979 while bus shares have remained relatively constant. Rail shares have declined, and by 1979, passenger cars and taxis accounted for the largest share of travel (in passenger km) and had the highest growth rates, especially from 1975-1979.

By 1979, urban passenger kilometers had increased to 42 million reflecting substantial increases in GDP and travel by all modes. In terms of the aggregate demand for transport, their increases are apparent in the growth of per capita GDP and passenger kilometers shown in Table V-7. This table confirms the high rate of growth for passenger car traffic.

2. Road Transport

a. Freight. Road transport presently provides the major volume of transport service for both passenger and freight movements over a

TABLE V-6
ESTIMATED TOTAL PASSENGER KILOMETERS BY MODE
URBAN AND INTERURBAN TRAVEL, 1975-1979

A. Urban and Interurban (Billion Passenger Km)

Mode	1975 Urban	1975 Interurban	1975 Total	1979 Urban
Rail	2.6	12.2	14.8	14.4
Bus	11.4	9.0	20.4	12.4
Passenger Cars	--	--	--	--
Taxis	13.4	9.0	22.4 1/	15.4
TOTAL	27.4	30.2	57.6	42.2

B. Interurban -- Model Split
(Billion Passenger Km)

Year	Rail	Bus	Passenger Car/Taxi	TOTAL	Model Split % Rail	Bus	Car/Taxi
1964	8.3	5.9	4.0	18.2	46	32	22
1975	12.2	9.0	9.0	30.2	40	30	30
1979	14.4	12.4	19.4	46.2	34	29	36
ANNUAL GROWTH RATES (%) Billion Passenger Km Percentage Share							
1965-1975	3.9	4.3	8.5	5.2	-1.4	-0.6	3.2
1975-1979	4.2	8.3	14.4	8.7	-4.0	-0.8	4.7
1965-1979	4.0	5.5	10.1	6.2	-2.1	-0.7	3.6

1/ Passenger cars and taxis divided as follows:

Passenger cars 6.2 million passenger km and taxis 16.2 billion passenger km. The decision between urban and interurban was not shown by the NEDECO report, but since taxis provide a considerable amount of the interurban service, their share of each will differ from the 60-40% shown for passenger cars and taxis combined.

SOURCE: NEDECO, Quarterly Progress Report, 7-15-80, Vol. 1, Chapter 4, Appendix A. Page 4.10 and Table 5.1, Chapter 5. Page 5.2.

TABLE V-7
GROSS DOMESTIC PRODUCT
AND PASSENGER KM PER CAPITA
1965-1978

YEAR	GDP PER CAPITA (CONSTANT 1977 L.E. PRICES)	PASSENGER KM PER CAPITA RAIL	BUS	CAR	TOTAL
65	127	284	202	137	623
66	130	278	197	144	619
67	134	270	192	150	612
68	132	264	188	156	608
69	129	280	193	165	638
70	132	288	21	173	662
71	134	197	208	181	686
72	136	304	214	188	706
73	137	314	227	198	739
74	139	324	235	241	780
75	151	337	249	149	835
76	165	350	265	187	902
77	173	354	277	319	905
78	183	359	297	354	1,010
GROWTH RATES (%) (p.a.)					
65-78	2.9	1.8	3.0	7.6	3.8
75-78	6.6	2.1	6.1	12.4	6.6

SOURCE: NEDECO, Quarterly Report 7-15-1980, Table 5.3, Page 5.4.

network of about 28,000 kilometers. Most of the traffic moves on paved roads that account for 52 percent of all roads, the bulk of which (10,820 km) is under the authority of HBA. (Table V-8) Recent NEDECO data has evaluated some 11,000 kilometers covering the eight regions of the Highways and Bridges Authority (HBA). Table V-9 summarizes the results. About three-quarters of the inventoried paved road system is under HBA authority; an additional 20 percent is the responsibility of the governorate.

Specific analysis undertaken by NEDECO to ascertain road conditions indicated that of the reported total of just over 11,000 km, about 39 percent was in good condition, 33 percent in fair condition and the remaining 28 percent in poor condition. (Table V-10)

There are important variations by region, however. For example, of the 44,029 kilometers in the third region (Qena), almost 70 percent is in poor condition. Conversely, over 50 percent of the roads in the central (Cairo) and western (Alexandria) regions are in good conditions reflecting more concentrated efforts at maintenance.

TABLE V-8
INVENTORY OF PAVED ROADS BY HBA REGION

Highway & Bridge Authority Region	Length of Paved Roads (km)		Unpaved Roads		Total Roads
	HBA	Other Agencies	HBA	Other Agencies	
West	2,041	962	150	1,394	4,547
Middle	731	470	-	2,467	3,668
Middle	841	719	-	2,621	4,181
East	413	291	42	1,093	1,839
Central	757	786	158	1,803	3,504
Canal	571	204	-	2,198	2,973
First	1,106	342	428	782	2,658
Second	4,360	328	508	--	5,196
Third					
TOTAL	10,820	4,102	1,286	12,358	28,566

SOURCE: NEDECO.

To a considerable extent the road network is largely in place and no major new corridors appear to be required.

In terms of freight movements, in 1979, according to NEDECO, about 10 percent of the Tons (T) and 15 percent of the Ton Kilometers (TKM) of road freight is directly supervised by the Ministry of Transport — especially the five public freight companies. There is a substantial volume of private movement including truck cooperatives. The structure and character of this fleet and other road freight characteristics are presented in Table V-11.

TABLE V-9
INVENTORY OF PAVED ROADS BY HBA REGION AND AUTHORITY

Highway & Bridge Authority Regions	H.B.A.	Governorates	Min. of Agr.	Min. of Recon.	Others	Total No.	Total %
West (Alexandria)	1,474	362	221	4		2,061	18.5
Middle (Tanta)	826	345				1,171	10.5
East (Zagazig)	763	484				1,247	11.2
Central (Cairo)	873	432				1,316	11.8
Canal (Ismailia	1,124	29			167	1,320	11.9
First (Beni Suef)	530	160	16			706	6.4
Second (Assuit)	996	181	82			1,264	11.4
Third	1,843	186				2,029	18.3
TOTAL	8,429	2,179	319	4	167	11,098 1/	100.0
Percent	76	20	3			100	

1/ HBA's own published total is actually 13,341 kilometers and not 11,098. The extra 2,243 is due to the fact that the HBA total includes urban segments of the NEDECO total also does not include a number of governorates, Ministry of Agriculture and Ministry of Reconstruction roads.

SOURCE: NEDECO, Quarterly Report, 7-15-80, Chapter 6, Table 6.1.1, page 6.2. For HBA totals, see Table 6.1.2.

In 1979, the total truck fleet was estimated at 90.83 thousand, of which the cooperatives accounted for 11.25 thousand or about 12 percent. There was, again, variation by region. For example, they accounted for almost 30 percent of the fleet in the Canal Zone (Port Said, Ismailia and Suez) and Upper Egypt and only 5 percent in the urbanized areas of Cairo, Giza and Alexandria.

The available data for the fleet itself is based on an inventory of 81.45 thousand vehicles. Of them, just over 40 percent are pickups, 30 percent in the range of 6-10 ton

TABLE V-10
ROAD PAVEMENT CONDITIONS BY HBA REGION, 1979

REGION	Road Condition	AUTHORITY: Highway and Bridges	AUTHORITY: Other	Total Road Length (kms)		
West (Alexandria)	good	877	184	1,061	51	%
	fair	499	319	818	40	
	poor	98	84	182	9	
	SUBTOTAL	1,474	587	2,061	100	%
Middle (Tanta)	good	472	145	617	53	%
	fair	245	53	298	25	
	poor	109	147	256	22	
	SUBTOTAL	826	345	1,171	100	%
East (Zagazig)	good	215	131	346	28	%
	fair	301	66	367	29	
	poor	247	287	534	43	
	SUBTOTAL	763	484	1,247	100	%
Central (Cairo)	good	518	169	687	52	%
	fair	322	250	572	44	
	poor	33	24	57	4	
	SUBTOTAL	873	443	1,316	100	%
Canal (Ismailia)	good	456	159	615	47	%
	fair	526	22	548	41	
	poor	142	15	157	12	
	SUBTOTAL	1,124	196	1,320	100	%
First (Beni Suef)	good	165	105	270	38	%
	fair	279	41	320	46	
	poor	86	30	116	16	
	SUBTOTAL	530	176	706	100	%
Second (Assuit)	good	299	55	354	28	%
	fair	395	109	504	40	
	poor	302	104	406	32	
	SUBTOTAL	996	268	1,264	100	%
Third (Qena)	good	376	18	394	19	%
	fair	185	57	242	12	
	poor	1,282	111	1,393	59	
	SUBTOTAL	1,843	186	2,029	100	%
TOTAL (Egypt)	good	3,378 (40.1%)	966 (36.0%)	4,344 (39.1%)		
	fair	2,752 (32.6%)	917 (34.1%)	3,669 (33.0%)		
	poor	2,299 (27.3%)	802 (29.9%)	3,101 (27.9%)		
	TOTAL	8,429 (100%)	2,685 (100%)	11,114 (100%)		

SOURCE: NEDECO, Quarterly Report 7-15-80, Table 6.1.3.8, Page 6.12.

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TABLE V-11
REGIONAL DISTRIBUTION OF COOPERATIVE TRUCK FLEET
1975 & 1979

GOVERNORATE/AREA	1975 No. of Trucks	1975 % of Distribution	1979 No. of Trucks	1979 % of Distribution	AVERAGE ANNUAL GROWTH RATES 1975-79	TOTAL TRUCK FLEET 1978	COOPERATIVE FLEET AS % OF TOTAL FLEET
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Major Cities							
Cairo	1,261	14	1,412	13	2.9		
Giza	262	3	245	2	-1.7		
Alexandria	850	9	1,100	10	6.7		
SUBTOTAL	2,373	26	2,757	25	3.8	53,319	5
B. Canal Zone							
Port Said	100	2	261	2	27.1		
Ismailia	400	4	500	4	5.7		
Suez	370	4	420	4	3.2		
SUBTOTAL	870	10	1,181	10	7.9	4,177	28
C. Delta	3,639	40	4,360	39	4.6		21
D. Upper Egypt	1,990	22	2,710	24	8.0		29
E. Others	148	2	243	2	13.2		8
TOTAL	9,020	100	11,251	100	5.7	90,833	12

SOURCE: NEDECO, Quarterly Report, 7-15-80, Chapter 3, Table 3.5, Page 15.

TABLE V-13
ROAD TRANSPORT SECTOR BY ENTERPRISE CHARACTERISTICS
1975 - 1977 - 1979
(000's Vehicles)

ENTERPRISE CHARACTERISTIC	1975 TRUCKS	1975 TRAILERS	1975 % TRUCKS	1977 TRUCKS	1977 TRAILERS	1977 % TRUCKS	1970 TRUCKS	1970 TRAILERS	1970 % TRUCKS
1. PUBLIC SECTOR:									
Public trucking cos.	1.6	1.5	5	1.6	1.5	3	1.4	1.3	2
Other public (own acct.)	10.8	1.3	29	13.3	3.0	25	*	*	*
Government trucks	*	*	*	*	*	*	*	*	*
SUBTOTAL/PUBLIC	12.4	2.8	34	14.9	4.5	28	*	*	*
2. PRIVATE SECTOR:									
Cooperatives	9.0	2.4	25	9.9	2.6	18	11.3	2.9	12
Private Firms	*	*	*	*	*	*	0.1	0.1	--
Other Private	15.3	2.5	41	29.0	3.9	54	*	*	*
SUBTOTAL/PRIVATE	24.3	4.9	66	38.9	6.5	72	*	*	*
TOTAL PUBLIC & PRIVATE	36.7	7.7	100.0	53.8	11.0	100.0	90.8	13.8	100

* Data not shown in NEDECO material.

SOURCE: NEDECO, Quarterly Report, 10-15-80, Table 3.4, Page 14.

TABLE V-12
ESTIMATED TRUCK FLEET COMPOSITION
1979

TRUCK CLASS	NUMBER	PERCENT DIST.	ESTIMATED USE FOR TRIPS OF <30-35Km	ESTIMATED USE FOR TRIPS OF >30-35Km	ESTIMATED USE LOAD CAPACITY FOR TRIPS OF <30-35km (tons per day)	ESTIMATED USE LOAD CAPACITY FOR TRIPS OF >30-35km (tons per day)
Pick-ups (<3 T)	33,650	41	95	5	47,000	1,200
3 Ton Trucks (3-5T)	10,700	13	75	25	35,400	5,900
8 Ton Trucks (6-10T)	24,500	30	50	50	72,100	54,100
14 Ton Trucks (>10T)	2,900	4	25	75	7,500	16,800
20 Ton Trucks	5,300	7	--	100	--	51,700
20 Ton Trailers	1,150	1	--	100	--	16,800
26 Ton Semi-Trailers	3,250	4	--	100	--	38,500
TOTAL	81,450 1/	100	--	--	--	--

1/ Does not match fleet total of 90.8 thousand due to adjustments made to the 908 thousand by NEDECO in order to estimate truck classes.

SOURCE: NEDECO, Quarterly Report, 7-15-80, Chapter 3, Pages 23 and 26.

trucks, and 13 percent in the range of 3-5 tons. (Table V-12) As might be expected, the pickups are used for short trips (95 percent under 30-35 km) and the large trucks for the long haul over-the-road trips (for example, 100 percent of all trips for 20-ton trucks or larger were over 30-35 km); 75 percent were over this distance for trucks over 10 tons and under 20; and 50 percent of the 6-10 ton trucks were also over this distance class). Specific data on the road sector by type of enterprises is summarized in Table V-13.

In 1975, there were a total of about 36.7 thousand trucks of which the public sector accounted for about one-third. By 1977, their share had declined to 28 percent and that decline has continued to the present. Unfortunately, data for 1979 was not, as yet, readily available.

TABLE V-14
ESTIMATED VEHICLE KILOMETERS & NUMBER
1979

Trip Type	Est. Number Vehicles	Est. Annual Kms (000's)	Total Vehicle Kms (Mil.)	Percent	Percent Within Trip Type
1. Urban Utilization Only	19,150	--	303	11	100
Pick-ups	10,000	12	120		40
3T Trucks	2,675	20	53		17
8T Trucks	6,125	20	123		41
14T Trucks	350	20	7		2
2. Short Distance (30-35 Km)	33,600		1,074	40	100
Pick-ups	21,750	30	652		61
3T Trucks	5,350	30	161		15
8T Trucks	6,125	40	246		23
14T Trucks	375	40	15		1
3. Inter-Urban (30-35 Km)	28,700		1,309	49	100
Pick-ups	1,900	30	57		4
3T Trucks	2,675	30	80		6
8T Trucks	12,250	40	490		37
14T Trucks	2,175	40	87		7
20T Full Trailer	5,300	50	265		20
30T Full Trailer	1,150	75	86		7
26T Semi Trailer	3,250	75	244		19
TOTAL	81,450		2,686	100	

Estimated Distribution By Vehicle & Trip Type
(Million Vehicle Kms)
1979

Trip Category	Pick-up		Vehicle Category: 3T Trucks		8T Trucks		14T Trucks		20T Trucks		26-30T	Semi
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Urban	120	14	53	18	123	14	7	6	--	0	--	0
Short Distance (30-35 Km)	652	79	161	55	246	29	15	14	--	0	--	0
Inter-Urban	57	7	80	27	490	57	87	80	265	100	330	100
TOTALS	829	100	294	100	859	100	109	100	265	100	330	100

SOURCE: NEDECO, Quarterly Report, 7-15-80, p. 38.

Turning to vehicle kilometers by trip type and vehicle class, Table V-14 summarizes relevant data for 1979. In terms of trip types, three categories were developed by NEDECO: urban utilization only; short distance (less than 30-35 km); and interurban (over 30-35 km). Out of an estimated total of about 2-7 billion vehicle kilometers in 1979, about 11 percent were urban, 40 percent short distance and 49 percent interurban. Pickups and 3-5 ton trucks accounted for almost 50 percent of the urban vehicle kilometers. These vehicles also accounted for a large share of the short distance (less than 30-35 km) trip; about 75 percent of the vehicle kilometers (VKM), of which pickups accounted for 61 percent alone.

TABLE V-15
CHANGE IN GOODS VEHICLE DISTRIBUTION BY GOVERNORATE
1965 & 1979

GOVERNORATE	PERCENTAGE DISTRIBUTION OF GOODS VEHICLES 1965	1979
Cairo	38	32
Alexandria	19	18
Port Said	1	1
Suez	2	2
Ismailia	1	2
Damietta	1	1
Sharkia	3	4
Dakahlia	4	5
Beheira	4	3
Gharbia	5	4
Menoufia	2	2
Kafr el Sheikh	2	1
Qalyubia	1	2
Giza	3	9
Fayoum	1	1
Beni Suef	1	1
Minia	2	2
Assiut	2	2
Sohag	1	1
Qesna	1	2
Aswan	1	1
Matruh	1	1
Red Sea	1	1
New Valley	1	1
Sinai	2	1
TOTAL %	100	100
(NUMBER)	(20,523)	(90,833)

SOURCE: NEDECO, Quarterly Report, 7-15-80, Chapter 3, Table 307, Page 19.

Interurban trips were more equally distributed among larger trucks with almost 50 percent of the VKM accounted for by 20 ton trucks or larger. The largest single category of trucks generating interurban trips were from 6-10 ton vehicles.

Since 1965, there has been a significant increase in road freight transport, and the regional distribution has also changed. For example, the fleet increased from 20.5 thousand to 90.8 thousand between 1965 and 1979 for an annual average increase of about 11 percent. (Table V-15) In addition, in 1965, Cairo and Alexandria had close to 60 percent; by 1979, their share had declined to 50 percent.

An important aspect of providing freight transport is adequate road maintenance, and in the section on costs, road maintenance costs will be presented. Since axle-loads are a key element influencing these costs, data on axle loads were developed by NEDECO based on a special sample

TABLE V-16
TRUCK AXLE LOAD SURVEY 1979

VARIABLE IN SURVEY	SINGLE TRUCK	TRUCK TRAILER	SEMI-TRAILER	TOTAL
1. Average Load Capacity (tons)	6.7	20.4	25.0	11.8
2. Average Payload (tons)				
a. Including Empty Return	3.1	13.2	14.1	6.7
b. Excluding Empty Return	5.2	21.8	21.1	11.1
3. Average Load Factor (%)				
a. Including Empty Return	.46	.65	.56	.56
b. Excluding Empty Return	.78	1.07	.84	.94
4. Empty Truck Ratio (%)	41	39	33	40

SOURCE: NEDECO, Quarterly Report, 7-15-80, Chapter 5, Table 5.4, page 5-11.

interview of 2,500 trucks. The results are summarized in Table V-16. The sample showed that axle-load capacity ranged from 6.7 tons for single trucks to 20-25 tons for combinations. In analyzing costs of transport for alternative urban development strategies, the maintenance costs for highways will depend upon the mix of truck types which will, in turn depend upon trip distances (e.g. the impact of the urban development strategy on trip distance). Payloads will also be important as will average load factors. It is of some interest to note that average payload for truck-trailer combinations (excluding the empty return) are in excess of the average load capacity for that truck type. This suggests (and is confirmed by NEDECO) considerable overloading and, thereby, damage to the highway.

b. Passenger. In terms of the passenger fleet and passenger travel as noted, substantial growth has occurred, especially by intercity taxi and private car. Data for the entire vehicle fleet from 1965-1979 have been developed by NEDECO along with data on their distribution by governorate areas. These have been summarized in Tables V-17 - 19.

TABLE V-17
DISTRIBUTION OF PRIVATE CARS AND TAXIS
BY GOVERNORATE -- 1978
(Thousands)

Governorate	Private Cars	Taxis	Total Pass. Car	% Taxi
Cairo	123,173	21,202	144,375	15
Alexandria	47,330	13,088	60,418	12
Port Said	2,811	1,612	4,423	36
Suez	1,704	1,101	2,805	39
Ismailia	2,667	1,545	4,212	35
Damietta	1,653	1,318	2,971	44
Sharkia	3,044	2,132	5,176	41
Dakahlia	5,855	5,268	11,123	47
Beheira	2,718	2,557	5,275	48
Gharbia	3,801	3,043	6,844	44
Menoufia	1,351	1,263	2,614	48
Kafr El Sheikh	851	1,404	2,255	62
Qalyubia	2,059	1,224	3,283	38
Giza	35,688	10,418	46,106	23
Fayoum	1,126	962	2,088	46
Beni Suef	1,016	672	1,688	40
Minia	2,220	1,460	3,680	40
Assiut	1,885	1,787	3,672	49
Sohag	817	1,723	2,540	68
Qena	1,197	1,530	2,727	56
Aswan	964	1,010	1,974	51
Matruh	537	1,942	2,479	78
Red Sea	267	154	421	37
New Valley	109	42	151	28
Sinai	450	231	681	34
TOTAL	245,293	78,688	323,981	24

SOURCE: NEDECO.

TABLE V-18
REGIONAL DISTRIBUTION OF INTERCITY BUS FLEET
1979

GOVERNORATE	PUBLIC BUSES		PRIVATE BUSES		TOURIST		SCHOOL		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cairo	1,977	33	3,828	56	698	74	459	67	6,961	48
Alexandria	914	15	1,237	18	102	11	96	14	2,349	16
Port Said	103	2	56	1	6	1	1	1/	166	1
Suez	56	1	69	1	5	1	--	--	130	1
Ismailia	76	1	106	2	--	--	20	3	202	1
Damietta	89	1	34	1/	--	--	--	--	123	1
Sharkia	210	4	16	1/	5	1	2	1/	233	2
Dakahlia	329	6	80	1	4	1/	10	1	423	3
Beheira	121	2	48	1	--	--	2	1/	171	1
Gharbia	462	8	95	1	11	1	1	1/	569	4
Menoufia	229	4	21	1/	--	--	--	--	250	2
Kafr El Sheikh	172	3	--	--	--	--	--	--	172	1
Qalyubia	263	4	390	6	--	--	10	1	663	5
Giza	139	2	540	8	23	2	61	9	763	5
Fayoum	125	2	6	1/	--	--	--	--	131	1
Beni Suef	82	1	8	1/	--	--	--	--	94	1
Minia	176	3	36	1	1	1/	3	1/	216	2
Assiut	100	2	25	1/	--	--	16	2	141	2
Sohag	74	1	6	1/	--	--	1	1/	81	1
Qena	108	2	82	1	59	6	2	1/	251	2
Aswan	62	1	89	1	26	3	--	--	177	1
Matruh	--	--	--	--	--	--	--	--	--	--
Red Sea	47	1	31	1/	1	1/	--	--	79	1
New Valley	24	1/	3	1/	--	--	--	--	27	1/
Sinai	2	1/	14	1/	--	--	--	--	16	1/
TOTAL	5,940	100 2/	6,820	100 2/	941	100 2/	688	100 2/	14,388	100 2/

1/ Less than 1%.
2/ Totals may not add due to rounding.
SOURCE: NEDECO, Quarterly Report 7-15-80, Table 3.3.

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Since 1965, the vehicle fleet has increased at an annual average rate of about 10 percent per year — from 125,000 to 488,000. The sharpest increases have been in the taxi population (17.5 percent per annum); the private bus fleet (14.7 percent per annum); and trailers for trucks (16.2 percent per annum). (Table V-19) The taxi population has increased from 15,000 to 86,000 over this period reflecting the rapid growth in intercity shared taxi transportation.

There has also been a sharp increase in the private bus fleet (not including tourism) reflecting the growing practice of private firms to provide work trip transport to their employees. The latter reflects the substantial costs encountered by employers (time losses, etc.) if they permit their staffs to use public transport (generally in poor condition in most Egyptian cities).

The distribution of the motor vehicle fleet by governorate in 1979 indicated that the major cities of Cairo, Giza and Alexandria accounted for about 74 percent of the fleet — not very different than 1974. (Table V-20) The most significant share increases were in the Canal Zone.

The patterns of trip-making by intercity travellers on the highway are reflected in a 1979 trip matrix developed by NEDECO for taxi passengers distributed by the same semi-governorate zones previously discussed. Out of a total of 17.9 thousand trips shown in the O-D matrix, 3.5 thousand were to Cairo; 1.7 to Beheira; 1.5 to Alexandria; and about 1,000 each to Giza, Dakahlia, Menoufia and Gharbia (south). Their trip patterns reflect the concentrations of population and activity in the Delta and the urbanized area of lower Egypt. Most of the trip origins and destinations are between their locations.

In terms of modal split, the most significant finding is the role of shared taxis for intercity travel. Passenger flow matrices development by the NEDECO Study Team based on a nationwide road survey (covering cars, taxis and buses) and a train survey (three months of ticket sales in 1979) provide considerable insight

TABLE V-19
EGYPTIAN MOTOR VEHICLE FLEET — 1965 - 1979
(Excludes Motorcycles and Tractors)
(In Thousands)

YEAR	PASSENGER CARS				BUSES					TRUCKS			PERCENTAGE OF TOTAL			
	PRIVATE	TAXIS	OTHERS 1/	SUBTOTAL 2/	GENERAL (PUBLIC)	SPECIAL (PVT)	TOURISM (PVT)	SCHOOL (PVT)	SUBTOTAL 2/	TRUCKS	TRAILERS	TOTAL	PAX CAR	TAXI	GEN. BUS	TRUCK
1965	82.0	14.6	2.2	98.8	3.7	1.0	0.3	0.5	5.5	20.5	1.7	126.5	66	12	3	16
1970	108.1	21.3	6.3	135.7	4.7	1.4	0.2	0.5	6.9	23.2	3.8	169.5	65	13	3	14
1975	153.7	57.9	3.9	215.5	5.1	3.4	0.6	0.5	9.6	36.8	7.7	269.6	59	22	2	14
1976	175.5	66.1	4.0	245.6	5.3	4.3	0.7	0.5	10.8	46.6	9.9	312.9	58	22	2	15
1977	207.7	68.8	4.9	281.4	4.4 3/	4.5	0.8	0.5	10.2 3/	53.7	11.0	356.3	60	20	1	16
1978	245.3	78.6	6.2	330.1	5.4	5.8	0.9	0.6	12.7	72.7	13.8	428.8	59	19	1	17
1979	280.7	86.0	15.7 3/	382.4	5.9	6.8	0.9	0.7	14.3	90.8	13.9	501.4	58	18	1	19
ANNUAL & GROWTH RATES P.A. (%)																
1965 - 70	5.7	7.9		6.6	4.9	7.0	-7.8	0.0	4.6	2.5	17.5	5.8				
1970 - 75	7.3	22.2		9.7	1.7	19.4	24.6	0.0	6.6	9.7	15.2	9.6				
1975 - 79	16.2	10.4		15.4	3.7	18.9	10.7	8.8	11.0	25.3	15.9	16.8				
1965 - 1979	9.2	13.5	--	10.2	3.4	14.7	8.2	2.4	7.1	11.0	16.2	10.2				

1/ Diplomitive, rental and other vehicles.
2/ May not add due to rounding.
3/ Appears to be a questionable number to NEDECO.

SOURCES: NEDECO, Quarterly Report, 7-25-80, Chapter 3, Table 3.2, page 4.
NEDECO, Quarterly Report, 7-15-80, Table 3.3, page 5.

TABLE V-20
DISTRIBUTION OF MOTOR VEHICLE FLEET BY GOVERNORATE & AREA 1/ 1979
(In Thousands)

GOVERNORATE & AREA 3/	PRIVATE CARS	TAXIS	BUSES (ALL CATEGORIES)	TRUCKS	TOTAL	PERCENT OF TOTAL	PERCENT OF TOTAL IN 1974	PERCENTAGE AREA TOTAL			
								PVT. CARS	TAXIS	BUS	TRUCKS
A. MAJOR CITIES											
Cairo	145.3	23.4	7.0	28.1	203.7	43.2	41.7	71	11	3	15
Giza	41.8	11.2	0.8	8.3	62.1	13.2	10.9	67	18	1	14
Alexandria	48.7	13.3	2.3	17.0	81.4	17.2	20.1	60	16	3	21
Subtotal	235.8	47.9	10.1	53.4	347.2	73.6	72.7	68	14	3	15
B. CANAL ZONE											
Port Said	3.6	2.0	0.2	0.9	6.7	1.4					
Suez	2.0	1.3	0.1	1.4	4.8	1.0					
Ismailia	3.2	1.8	0.2	1.9	7.0	1.5					
Subtotal	8.8	5.1	0.5	4.2	18.5	3.9	2.5	48	27	3	22
C. DELTA	23.6	20.8	2.6	21.1	68.1	14.4	16.2	35	31	4	30
D. UPPER EGYPT	10.7	10.3	1.1	9.2	31.3	6.6	7.5	34	33	4	29
E. OTHER	1.8	2.0	0.1	3.0	6.9	1.5	1.1	26	29	1	44
TOTAL	280.7	86.1	14.4	90.9	472.0 2/	100.0 1/	100.0	58	18	3	19

1/ Totals and subtotals may not add due to rounding.
2/ Excludes category of "Other" of 15,696 in passenger car category.
SOURCE: NEDECO, Quarterly Report, 7-15-80, Table 3.3, page 5.

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into the modal split and character of intercity travel. Some highlights follow and more detail is provided in Table V-21 covering the modal split and other attributes and in Table V-22 providing tariff information for the public buses:

i) In 1979, intercity taxi passenger kilometers were over 10 billion; public bus travel amounted to under 10 billion.

ii) The taxis operate in-city terminals with tickets set at fixed tariffs (set for each route), and the driver leaves when the vehicle is fully occupied.

iii) At peak demand, prices may rise to 2-3 times the fixed rate.

iv) The terminals are operated by the taxi union and taxi operations are registered.

v) There are four public bus companies, some governorate regional bus services, and a range of employer provided services (generally in the urbanized area), and special uses such as tourists and for school.

vi) Much of the traffic movement in the survey was short distance; about 90 percent of the origin trips and 85 percent of the destinations occurred within 11 kilometers from the inter-city terminal.

vii) On the destination side, over 60 percent had a final destination in the immediate surroundings (under 2 km).

viii) The average distance of access/egress transport was (on a straight line basis) about 4.5 km for origins and 5.1 km per destination.

ix) In terms of access and egress by mode, trains/trams accounted for 20 percent of the access and 14 percent of the egress transport; taxis accounted for about 20 percent for both access and egress; and public bus for about 46 percent access and only 19 percent egress.

TABLE V-22
SELECTED PASSENGER TRANSPORT TARIFFS PUBLIC BUS -- 1979

A. Public Bus Companies:

East Delta:	Sharkia Suez, Ismailia, Port Said, Sinai, Dakahlia, Damietta, Part of Qalyubia.
Middle Delta :	Gharbia, Menoufia, Kafr el Sheikh, Part of Qalyubia.
West Delta:	Alexandria, Mersa Matruh, Beheira.
Upper Egypt :	Giza, Fayoum, Beni Suef, Minia, New Valley, Sohag, Qena, Aswan, Red Sea.

B. Inter-Urban Bus Fares:

1. Non Desert Roads

Distance	Fare (Milliemes)
1st 3 km	1.5/km
4 - 15 km	3.0/km
16 - 40 km	2.5/km
Over 40 km	2.0/km

Premiums:

25% extra for Class I Regular or Class II Fast Service.
56% extra for Class I Fast Service.
88% extra for Luxury Service (reserved seat).

2. Desert Roads

Charge is a Constant Fare/km

3 milliemes per km for Class II Regular
4 milliemes per km for Class I Regular
5 milliemes per km for Luxury Service

Premiums:

10% over tax
10% increase (since 1967) for Luxury Service
15% increase for road maintenance (10%) end fleet renewal (5%)

3. Typical Fares (Cairo - Alexandria)

Class III Fast	L.E.	1.10
Flight Pullman		2.25
Extra Luxury Pullman		3.50

SOURCE: NEDECO, Quarterly Progress Report, 7-15-80.

x) In terms of trip purpose, house-to-work accounted for 28 percent of the travel; home-to-business 20 percent; house-to-social or holiday trip 30 percent; and home-to-school about 12 percent, and vice versa.

TABLE V-21
SELECTED TRAVEL CHARACTERISTICS FROM NATIONWIDE SURVEY OF PASSENGER TRANSPORTATIONS 1979
(Sample of 1716 Pax Interviews)

A. Destinations

	Percent of Total Trips
1. Tanta	31.2%
2. Alexandria	26.7%
3. Benha	17.0%
4. Other	25.1%

B. Access & Engress-Distances

RING NO.	STRAIGHT LINE DISTANCE (KM)		ORIGINS %	ORIGINS cum%	DESTINATION %	DESTINATION cum%
1	2		28.7	28.7	61.4	61.4
2	2	4	14.9	43.6	9.0	70.4
3	4	7	31.8	75.4	8.8	79.2
4	7	11	15.1	90.5	5.4	84.6
5	11	15	3.7	94.2	5.5	90.1
6	15	20	0.2	94.4	4.3	94.4
7	20	30	-	-	4.4	98.8
8	30	45	0.4	94.8	1.0	99.8
9	45	60	-	-	0.1	99.9
10	60	80	-	-	0.2	100.0
(10 Upper Egypt)	8		5.1	99.9	-	-
Average Straight Line Distance (Km)			4.5		5.1	

C. Access & Engress-Mode

	Access %	Engress (%)
Train/Tram	20.4	13.7
Taxi	19.4	20.1
PVT Car	1.7	6.4
Public Bus	45.7	19.2
Private Bus	1.5	0.2
Walk	11.3	46.3
TOTAL	100.0	105.9

D. Trip Purposes (and return)

	Percent of Trips
Home to Work	27.6
Home to Business/Market	20.4
Home to Social/Holiday/Recreation	30.7
Home to Shop	0.7
Home to School	12.0
Home to Home	1.2
Non-Home	7.4
TOTAL	100.0

SOURCE: NEDECO, Quarterly Report, 7-25-80.

c. Cairo Related Road Traffic Trips. Major urban traffic studies have been undertaken for both Cairo and Alexandria. Major traffic corridors may be identified between Greater Cairo and Alexandria, Suez, Ismailia, Sadat City and Fayoum. These traffic relationships were developed for 1975, 1985 and the year 2000 in the "Entrances to the Cairo Urban Area" planning study of 1976. (Table V-23)

Traffic volumes in 1975 on major corridors in and around Cairo ranged from about 30,000 ADT (in passenger car equivalents — PCES) to Benha and Tanta to Alexandria. Most of the

TABLE V-23
PROJECTED TRAFFIC VOLUMES IN PASSENGER CAR EQUIVALENTS, GREATER CAIRO AND URBAN AREA BOUNDARIES
1975 - 1985 - 2000

Corridor Boundary	(ADT in 000) 1975	1985	2000	Growth Rates P.A. 1975-1985	1985-2000	1975-2000
GREATER CAIRO:						
North (Benha Direction)	23	62	152	10.4	6.2	7.8
East (Cairo Airport Direction)	7	26	81	14.0	7.9	10.3
South West (Gulf of Suez Direction)	Low	Low	Low	--	--	--
South West (Fayoum Direction)	7	29	82	15.3	7.2	10.3
West (Alexandria)	2.3	14	54	19.8	9.4	13.5
URBAN AREA:						
North (Benha)	45	130	314	11.2	6.1	8.1
East (Cairo Airport)	7	32	100	16.4	7.9	11.2
South East (Gulf of Suez)	Low	Low	Low	--	--	--
South West (Fayoum)	13	55	148	15.5	6.8	10.2
West (Alexandria)	8.5	30	100	13.4	8.4	8.5

SOURCE: Entrance to Cairo Study, Section II, Figures II-12 and II-13, also see Annex Maps 5 and 6.

TABLE V-24
EGYPTIAN RAILWAY TRAFFIC

A. Frieght Volumes (Ton & Ton Km), 1967/68-1978

YEAR	Tons (Million) Including Own Traffic	Excluding Own Traffic	Tons Km (Billion) Including Own Traffic	Excluding Own Traffic
1967/68	11.4	11.0	3.0	--
1968/69	10.6	--	2.7	--
1969/70	11.6	--	3.3	--
1970/71	11.3	10.4	3.3	3.2
1971/72	10.2	9.4	3.0	2.8
1972	9.7	8.9	2.8	2.6
1973	9.1	8.4	2.6	2.5
1974	9.1	8.4	2.5	2.4
1975	8.2	7.8	2.3	2.2
1976	7.4	7.1	2.0	2.0
1977	8.5	8.2	2.4	2.3
1978	6.5	6.1	2.5	2.2

B. Railway Freight Volumes -- Tons, 1973-1979 (000's)

Commodity	1973	1974	1975	1976	1977	1978
TOTAL: All comm/year	8,375	8,404	7,803	7,048	8,197	6,050
Cereals	1,217	1,272	1,059	884	1,446	712
Sugar/Sugar products	1,703	1,610	1,568	1,045	1,752	670
Iron Ore	1,074	1,324	1,267	1,440	1,635	1,449
Coal and Coke	826	974	710	701	653	794
Petroleum	906	935	934	704	640	552
Misc. mfg.	1,159	830	696	644	1,118	727
SUBTOTAL	6,885	6,945	6,234	5,418	7,244	4,904
% of Total	82.2	82.6	79.9	76.9	88.4	81.1

C. Railway Freight Volumes -- Ton Km, 1973-1978 (Millions)

Commodity	1973	1974	1975	1976	1977	1978
TOTAL: All comm/year	2,550.0	2,452.8	2,245.1	2,017.7	2,400.0	2,296.6
Cereals	503.2	401.2	415.5	363.1	427.0	280.7
Fruits/Vegetables	104.7	140.8	85.8	62.7	50.2	35.0
Sugar/Sugar products	338.6	287.2	278.6	320.6	477.9	178.8
Textile Fibers	137.6	32.3	23.6	6.8	8.0	5.3
Iron Ore	285.3	398.5	416.1	407.0	537.4	741.2
Coal and Coke	140.4	171.6	128.7	78.3	88.3	141.6
Petroleum products	282.3	247.7	224.6	205.4	184.8	219.2
Misc. mfg.	326.4	214.2	155.3	204.9	312.2	285.5
SUBTOTAL	2,118.5	1,893.5	1,728.2	1,648.8	2,085.8	1,887.3
% of Total	83.1	77.5	77.0	81.7	86.9	82.2

SOURCE: NEDECO: Quarterly Report 7-15-80, Volume, Chapter 7, Table 7.1; p. 72.

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remaining corridors were substantially lower — roughly from 3,000 to 10,000 PCES. Forecasts prepared by the "Entrances" study indicated that by 1985 and the year 2000 the volumes would increase to well over 10,000 PCES, and in some instances traffic would be at ADT levels of over 100,000 (1985). Boundary corridor estimates for the Greater Cairo Boundary and the Urban Area Boundary Corridors confirm these high volumes by 2000. For the five corridors, Table V-23 summarizes the major traffic volumes for the base year and the projected periods of 1985 and 2000.

3. Rail Transport

The railway network of Egypt is blessed by highly concentrated spatially linear activities on flat terrain, and should, therefore, handle a much larger share of traffic. There has been a general deterioration of the level of service due to under investment and lack of maintenance in both way and rolling stock. The result has been a steady decline in its share of freight traffic as well as passenger traffic. (Table V-24).

The network comprises about 3,900 route kilometers (standard gauge) of which 951 are double track.[1]

a. Freight. Freight trends for the network are also summarized in Table V-24. The table provides data on traffic trends from 1967-1968 to 1978 and shows major commodity volumes (in tons and ton/km) for the period 1973-1978. Highlights include the following:

i) Traffic has decreased from 11.4 million tons and 3.0 billion ton/km in 1967-1968 to 6.5 million tons and 2.5 billion ton/km in 1978 — an annual average decrease of about 5 and 2 percent, respectively.

ii) Cereals, sugar, iron ore, coal/coke, petroleum products and miscellaneous manufactured products account for about 80 percent of the freight tonnage. This proportion has remained relatively constant since 1973.

iii) In terms of ton/kilometers, about the same accounted for almost the same share of traffic.

iv) In terms of specific commodities and growth, no consistent trend (other than down) appears. However, iron ore, sugar products and coal/coke continue to dominate and will probably do so in the future.

Looking at the distribution patterns of rail freight, O-D data were not available. However, detailed description by the NEDECO Phase II Transport Study provides some insight into major commodity movements for unit (dedicated) trains. Table V-25 summarizes the volumes and routes described covering about 4.0 million tons in 1978 (out of 6.0 million for all tonnages). Out of the 4.0 million tons estimated to move by unit trains (about 57 percent of 1978 tonnage):

i) 680,000 was wheat moving from the site at the port of Alexandria to the site at Imbaba.

TABLE V-25
ESTIMATED RAIL TONNAGES, BY UNIT, TRAINS, BY ROUTE: 1978

COMMODITY	1978 TOTAL TONS (000)	UNIT (000) TRAIN TONS SHIPMENTS	ROUTES	
WHEAT	712 1/	680	(Silo) Alexandria Port to Silo @ Imbaba.	
COKE/COAL	794	449	Alexandria Port to Coke work @ Tebbin	400 k
			Tebbin to Alexandria (Export)	49 k
PHOSPHATE	558 2/	134	Sibya to Tebbin	32 k
			Sibya to Kafr El Zayat	102 k
PETROLEUM PRODUCTS	552	346	Suez to Power Plant @ Talkha Suez Minia Qena Cairo to Assiut Aswan Tanta Sohag	
LIMESTONE	--	186	Quarry @ Suez to fertilizer plant	105 k
			Quarry @ Suez to Talkha	21 k
			Quarry Mowasla to Tebbin	44 k
			Quarry near Aswan Gabal El Silsila	16 k
IRON ORE	1,449	1,400	Beheira to steel works @ Tebbin	
WATER	--	87	Alexandria to Western Desert (Marsa Matruh)	
MOLASSES	3/	141	Hawamdiah to Alexandria	125 k
			Minia to Hawamdiah	16 k
FERTILIZER	--	227	Aswan to Upper Egypt (various dest.)	227 k
SUGAR	3/	114	Aswan Qena Minia Alexandria	114 k
SUGAR CANE	3/	300	Aswan Governorate to Mill at Kom Ombo	300 k
TOTAL	6,050	4,064	67% of Total by Specified Routes	

1/ All cereals
2/ Raw Fertilizer
3/ Total sugar and molasses in 1978 was 630 thousand tons; unit train shipments of molasses, sugar and sugar cane equalled 555 thousand tons in 1978 or about 14 percent of the total.

SOURCE: NEDECO, Quarterly Report, 10-15-80; p. 6.13 fd.

ii) 400,000 was coal/coke moving from the port of Alexandria to the coke works at Tebbin and a back hand of 40,000 tons.

iii) 1.4 million tons of iron ore from Beheira deposits to steel works at Tebbin.

iv) 350,000 tons of petroleum products to various points in Suez, Cairo, Tanta and from Suez to the power plant at Talkha.

v) 300,000 tons of sugar cane from the Aswan Governorate to the mill at Kom Ombo.

The remaining traffic is distributed along similarly concentrated movements, and details may be seen in Table V-25.

b. Passengers. In terms of revenues, passenger traffic provides the major share of revenue traffic to the system — in 1979 about 60 percent of system revenues. (Table V-26) That share actually had declined from about two-thirds in 1976. It is quite evident from Table V-27 that revenues are substantially less than expenditures requiring a government subsidy of about L.E. 33 million in 1978 and 1979. Passenger revenues have increased over the three-year period as have freight revenues as the result of tariff increases although the mode remains heavily subsidized (along with the other modes).

More specific data on passenger traffic provides further insight into rail service. Table V-26 provides information on passenger traffic by branch.

i) In 1978, 61 percent of the passenger traffic was on the suburban lines (192,000 passengers out of 315,000 total), and almost 80 percent were using Class III service.

TABLE V-26
RAIL PASSENGER TRANSPORT

	SERVICE	1977	1978	PERCENT		GROWTH RATE 1977-78 (%)	AVERAGE REVENUE PER PAX KM (Milliemes) 1977	1978
1.	Passengers (000)	314,086	314,642	100		0.2	2.4	2.4
	Mainline & Branches	136,470	123,097	39	100	-9.8	2.6	2.6
	I	1,413	1,567		1	10.9	8.9	6.8
	II	16,380	15,271		12	-6.8	4.0	3.7
	III	118,677	106,259		87	-10.5	2.2	2.3
	Suburban Lines	177,616	191,545	61	100		1.6	1.7
	II	37,496	39,529		21		1.9	2.0
	III	140,120	152,016		79		1.5	1.6
2.	Passenger Km (000)	9,300,387	9,290,414	100		-0.1		
	Mainline & Branches	6,975,169	6,583,223	71	100	-5.6		
	I	172,840	253,204		4	46.5		
	II	949,529	962,213		15	1.3		
	III	5,852,800	5,377,806		81	-8.1		
	Suburban Lines	2,325,218	2,707,191	29	100	16.4		
	II	357,324	378,844		14	6.0		
	III	1,967,894	2,328,347		86	18.3		
3.	Average Distance (Km)	30	30			0.0		
	Mainline & Branches	51	53			3.9		
	I	122	162			32.8		
	II	58	63			8.6		
	III	49	51			4.1		
	Suburban Lines	13	14			7.7		
	II	10	10			0.0		
	III	14	15			7.1		

SOURCE: NEDECO, Quarterly Report 7-15-80 Annex Tables 5.1 & 5.2; pp. 5.10 & 5.11.

TABLE V-27
EGYPTIAN RAILWAY SYSTEM,
REVENUES AND EXPENDITURE, 1978 - 1979
(Million L.E.)

REVENUES AND EXPENDITURES

Item	1976	1977	1978	1979
1. Total Revenues	48.0	53.1	54.3	66.6
2. Total Expenditures	57.1	68.5	87.2	99.8
3. Revenues Less Expenditures	(9.1)	(15.4)	(32.9)	(33.2)
4. Gort. Subsidy	--	15.4	32.9	33.2

REVENUES BY SOURCE

Source	1976 L.E.	1976 %	1977 L.E.	1977 %	1978 L.E.	1978 %	1979 L.E.	1979 %
Passengers	30.5	64	31.7	60	33.7	62	39.5	59
Freight	12.2	25	15.4	29	14.7	27	18.9	28
Sleeping/ Dining Cars	1.4	3	1.3	2	1.3	2	1.7	3
Miscel-laneous	3.9	8	4.7	9	4.6	9	6.5	10
TOTAL	48.0	100	53.1	100	54.3	100	66.6	100

SOURCE: NEDECO, Quarterly Report, 7-15-80, Table 8.2, Page 5.3 ff.

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ii) In terms of mainline and branch service, only Class I traffic showed any increase (tourist, etc.) — about 11 percent from 1977 to 1978. More relevant is the fact that almost 90 percent of the users of the mainline and branch services in 1978 were on Class III service which had decreased by 11 percent from 1977. This undoubtedly reflects a shift to intercity taxi, employer-provided transport and other mode use.

iii) The average trip length on the mainline was about 50 kilometers in contrast to 13-14 on the suburban lines. It is fairly evident that as the major urbanized areas have spread, the suburban lines have been used increasingly for regional transport and access to city center.

iv) In the same context, suburban lines in 1978 yielded an average revenue per passenger of 1.7 milliemes. This contrasts to 2-6 milliemes on the mainline, and suggests some pricing and equity problems. If the high (or higher) income groups are in the suburbs, the subsidies may be working adversely for the lower income groups.

Turning to the O-D patterns of passenger trips by rail, the NEDECO Study Team prepared a detailed trip matrix for 1979 average daily volume covering the 29 zones described earlier. The table shows the same concentrations discussed earlier for freight and other aspects of intercity transport. The areas (zones) of Cairo, Gharbia (south), Menoufia, Sharkia (south) and Alexandria account for almost 50 percent of total trip ends, and most of these are concentrated between these zones.

4. Water Transport

In 1979, 4.9 million tons of freight traffic moved on the inland waterway system although that volume is reported to be low because of the volume moving by sail and for which accurate data is unavailable.[2] Best estimates by NEDECO indicate that about 4.2 million tons are interregional (crosses a governorate boundary) and of that 4.2 million, about 3.5 million is by motorized vessel and 0.7 by sailing vessel.[3]

To provide an overall picture of the O-D patterns, the NEDECO trip matrix shows the distribution of the 4.9 million tons for the 29 zones used for all mode O-D analysis. A review of the matrix will show that:

i) Of the 4.9 million tons from all zones, Cairo and Alexandria account for about 50 percent (2.4 million tons). If Beheira (south), Minia, Qena and Aswan were added, the share of these six traffic generations comes to 92 percent (4.5 million tons).

ii) Cairo's main trading partners outbound (aside from within the region) are Beni Suef, Minia, Assiut, Sohag and Qena. For Alexandria, it is Cairo. Cairo is similarly a key destination for Aswan and Giza (including Giza as Cairo-related).

In terms of the traditional sector (sailing), in 1979 over 70 percent was the movement of construction materials and 11 percent minerals. In terms of the modern sector, out of 3.5 million tons of interregional transport, petroleum products (0.9 million), coal/coke (0.7 million) and minerals (0.8 million) accounted for about 70 percent. (Table V-28)

Overall traffic patterns (in the Aswan-Cairo-Alexandria corridor) have been developed by the NEDECO Study Team. It may be summarized as follows:

i) In 1979, about 1 million tons of cargo passed through the Nubaria Canal from Alexandria southwards, and about the same amount is unloaded in the Cairo/Giza/Qalyubia area.

ii) The Cairo/Giza/Qalyubia area is also the main loading point (about 1 million tons) for cargo bound for upper Egypt where it is unloaded at regular intervals along the river.

iii) On the north bound side, major loadings occur at Aswan, Qena and Minia and are then offloaded in the Cairo/Giza/Qalyubia area.

According to the NEDECO findings, the inland waterway capacity is substantially under utilized so that the potential for future utilization is considerable — at least for these products for which water transport is competitive (i.e. bulk commodity movements).

TABLE V-28
TON KM PERFORMANCE
AND VOLUME OF INLAND WATERWAY TRAFFIC
INTER-ZONAL MOVEMENTS ONLY -- 1979
BY SECTOR

Ton-Km Performance and Volume Transport by the Traditional (Sailing) Sector: Interzonal Transport Only (1979)

Code No.	Product Group	1,000 Tons	%	Ton-Km	%	Average Distance
04	Cement	44	5.9	20,034	18.5	455
05	Construction Material	520	70.0	55,141	51.0	106
06	Phosphate	70	9.4	5,070	4.7	72
09	Minerals	80	10.8	18,780	17.4	160
25	Scrap	15	2.0	3,818	3.5	254
--	Other	14	1.9	5,315	4.9	380
	TOTAL	743	100.0	108,158	100.0	140

Ton-Km Performance and Volume Transport by the Modern River Transport Sector (Inter-regional Transport Only, 1979)

Code No.	Product	1,000 Ton	Million Ton-Km	Average Distance
02	Petroleum Products	913	344	377
04	Cement	180	101	561
06	Phosphate	243	120	494
08	Coal/Cokes	705	185	262
09	Minerals	792	288	364
18	Sugar	108	74	685
19	Molasses	275	177	644
--	Other	284	148	521
	TOTAL	3,500	1,437	410

SOURCE: NEDECO, Quarterly Report, 10-15-80, Tables 5.2 and 5.3; p. 5.3 ff.

5. Future Transportation Networks

a. The National Transportation Plan. In 1977, a Phase I National Transportation Plan was completed providing a set of investment programs for the period 1976-1980. A second phase study was commissioned to provide a more detailed plan with an investment plan to 1987 and a more general perspective and overview to the year 2000. In April 1981 the Netherland Engineering Consultants (NEDECO) completed the Draft Final Report of the latter study which proposes a complete investment program suggesting priorities and phasing based on detailed modal analysis and demand/supply estimates.

The NEDECO estimates of aggregate transport demand clearly indicate there will be significant growth in the future — assuming reasonable rates of real economic growth.

Forecasts of interurban passenger traffic (by NEDECO) are summarized in Table V-29 for the period 1978 to 2000 for each mode. Overall passenger km are projected to grow at an annual average rate of 8 percent per year with corresponding rates shown for rail, bus and car (includes taxi). GDP in constant (1977) prices is forecast to grow at an annual average rate of 3.9 percent (low estimate) to 5.4 percent (high estimate) over the 22-year period of 1978-2000.

In terms of their more specific investment horizon to 1987, the corresponding growth rate for GDP (1978-1987) is 5.4 percent — well within the range of feasible growth rates for the Egyptian economy. Corresponding increases in passenger km confirm that there will be significant growth (and investment needs) in passenger transport.

As noted, passenger car/taxi km are projected to grow more rapidly than any other mode: 11.8 percent per year from 1978-1987 and 9.7 percent from 1987-2000. These increases are reflected in corresponding increases on passenger car ownership forecasts expressed in terms of

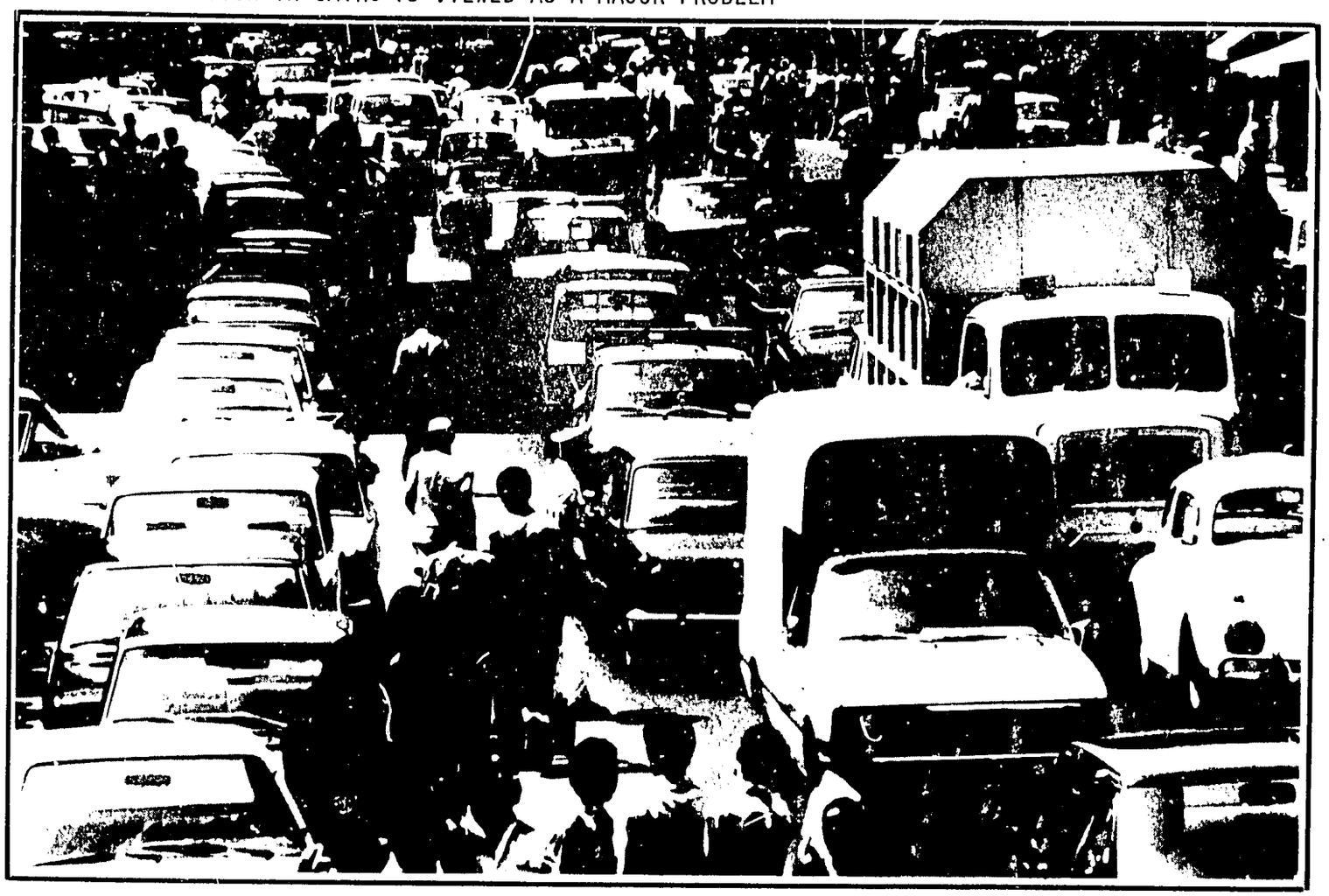
TABLE V-29

FORECASTS OF INTER-URBAN PASSENGER KMS BY MODE, 1978-2000

	PASSENGER KMS PER CAPITA				GDP/ CAPITA	POPULATION	PASSENGER KMS X 10^9				AVERAGE GROWTH PER YEAR			
Year	Rail	Bus	Car	TOTAL	1977 Prices	x 10^6	Rail	Bus	Car	TOTAL	Rail	Bus	Car	(pct) TOTAL
1978	358	296	353	1,007	183	38.5	13.8	11.4	13.6	38.8				
1983	391	394	559	1,344	236	43.5	17.0	17.1	24.3	58.4	4.3	8.5	12.3	8.5
1987	399	498	777	1,674	294	47.6	19.0	23.7	37.0	79.7	2.8	8.5	11.8	8.1
2000/H	419	733	1,270	2,422	425	62.1	26.0	45.5	78.9	150.4	2.4	5.2	6.0	5.0
2000/L	419	1,069	1,978	3,466	613	62.1	26.0	66.4	122.8	215.2	2.4	8.3	9.7	7.9

SOURCE: NEDECO, Quarterly Report, 7/15/80, Vol. 1, Chapter 5, Table 5.5, Page 5.6.

TRAFFIC CONGESTION IN CAIRO IS VIEWED AS A MAJOR PROBLEM



passenger cars per 1,000 inhabitants. (Table V-30) From a level of 8.4 cars per 1,000 in 1978, ownership levels are projected to increase to 18 by 1987 (an annual growth rate of about 9 percent) and 30-46 by the year 2000 (an annual growth rate range of 4 to 8 percent). The pressure on urban and inter-urban transport facilities will be substantial over the next two decades.

Since population is an essential variable in transport demand fare costing, the NEDECO disaggregate population estimates for 1977 to 2000 have been included. (Table V-31) These forecasts include their estimates of GDP and per capita GDP as well. The NEDECO forecast population to increase from 37.6 million in 1977 to 62.1 in the year 2000. The urban/rural mix is expected to shift from 44/56 in 1977 to 60/40 (low estimate)-65/35 in 2000.

TABLE V-30
PASSENGER CAR OWNERSHIP FORECASTS
CARS PER 1,000 INHABITANTS, 1979-2000

YEAR	PAX CARS PER 1,000 INHABITANTS
1978	8.4
1983	13.2
1987	18.4
2000, Low	30.0
2000, High	46.8
GROWTH PER ANNUM	
1978 - 1987	9.1%
1987 - 2000, Low	3.8%
1987 - 2000, High	7 5%

NOTE: Lower estimate for the year 200 implies that present under pricing (subsidies) to transport will be corrected; the high estimate assumes it will continue as at present.

SOURCE: NEDECO, Quarterly Report, 7-15-80, Table 5.11 and 5.13.

TABLE V-31
GDP & POPULATION FORECASTS
1977 - 2000

	POPULATION (1,000)	GDP (Million LE) New	GDP (Million LE) Old	PER CAP. GDP New	PER CAP. GDP Old
1977					
Urban	16,689	4,002	4,696	240	281
Rural	20,875	2,463	1,787	118	86
TOTAL	37,564	6,465	6,483	173	173
1983					
Urban	20,889	7,260	8,091	348	387
Rural	22,630	3,028	2,197	134	97
TOTAL	43,519	10,288	10,288	236	236
1987					
Urban	24,815	10,522	11,475	424	462
Rural	22,807	3,474	2,521	152	111
TOTAL	47,622	13,996	13,996	294	294
2000 LOW GROWTH					
Urban	37,244	21,928	23,131	588	621
Rural	24,830	4,494	3,261	181	131
TOTAL	62,074	26,392	26,392	425	425
2000 HIGH GROWTH					
Urban	40,348	32,631	34,121	809	846
Rural	21,726	5,433	3,943	250	181
TOTAL	62,074	38,064	38,064	613	613

On the Basis of Previous GDP/CAP., Figures Growth Factors Are Calculated as Follows (In L.E.):

(In L.E.)	1977 New	1977 Old	1983 New	1983 Old	1987 New	1987 Old	2000 L New	2000 L Old	2000 H New	2000 H Old
Urban	240	281	348	387	424	462	588	621	809	846
Rural	118	86	134	97	152	111	181	131	250	181
TOTAL	173	173	236	236	294	294	425	425	613	613

(GROWTH PERCENT, ROUNDED)	1977-1983 New	1977-1983 Old	1983-1987 New	1983-1987 Old	1987 - 2000 L New	1987 - 2000 L Old	1987 - 2000 H New	1987 - 2000 H Old
Urban	6.4	5.5	5.1	4.5	2.6	2.3	5.1	4.8
Rural	2.1	2.9	3.2	3.4	1.4	1.3	3.9	3.8
TOTAL	5.3	5.3	5.6	5.6	2.9	2.9	5.8	5.8

SOURCE: NEDECO, Quarterly Report, 10-15-80, Chapter 4, Table 4.1, Page 4.2.

TABLE V-32
TRANSPORT INVESTMENT PROGRAM 1976-1980
(Million L.E.)

MODE & PROGRAM	AMOUNT (L.E. MILLION)
HIGHWAYS:	
1. Construction and Paving of Main Roads in Northern Delta	8.9
2. Paving of Agricultural Roads	4.1
3. Improvement of Suez-Gharkaka Road (incl. to Safaga)	2.6
4. Widening and Strengthening of 869 Km main road	12.3
5. Possible additions needed on the links: El Badrashin/Beni Suef; Benha/El Mansoura Mahalla El Kubra/Sherbin	3.0
Subtotal	30.9
6. Maintenance Budget	17.0
Subtotal	47.9
Total Budget	63.4
RAILWAYS:	
1. Track Renewal	56.[illegible]
2. Signaling and train control	18.8
3. Locomotives	51.6
4. Freight Cars	6.4
5. Passenger coaches	68.8
6. Workshops	8.8
7. Other	45.2
Subtotal	256.0
8. Less Reductions by Berger	16.0
Net Total Budget	240.0
INLAND WATERWAYS:	
1. Nogana and Beheira Canals	16.2
2. Nile River	2.8
3. Other projects	3.5
4. Fleet and workshops	9.5
Total	32.0
PORTS & SHIPPING:	
1. Ports	
a. Ports & high house departments	27.5
b. Alexandria Port Authority, incl. expansion	77.6
c. Other agencies	21.4
Total	126.5
2. Shipping	65.0
AVIATION:	
1. Cairo Airport	
a. Passenger Terminal	5.0
b. Other facilities	10.1
2. Other Airports (7)	15.5
3. Training Facilities	
Total	30.6
Total All Modes	557.5

SOURCE: L. Berger/Dorsch, Consuet, Egypt National Transport Study, Interim Report 1977, Volume III, Chapter XIII.

b. The Phase II Egypt National Transportation Study. The Netherlands Engineering Consultants (NEDECO) of Holland and PACER Consultants of Cairo submitted, in mid-1981, their Draft Final Report of the Phase II Egyptian National Transportation Study. That report presented the results of a complete examination and review of the Egyptian inter-city transportation networks and included, along with a range of institutional and operating recommendations, a proposed investment program to 1987 and in some instances to the year 2000.

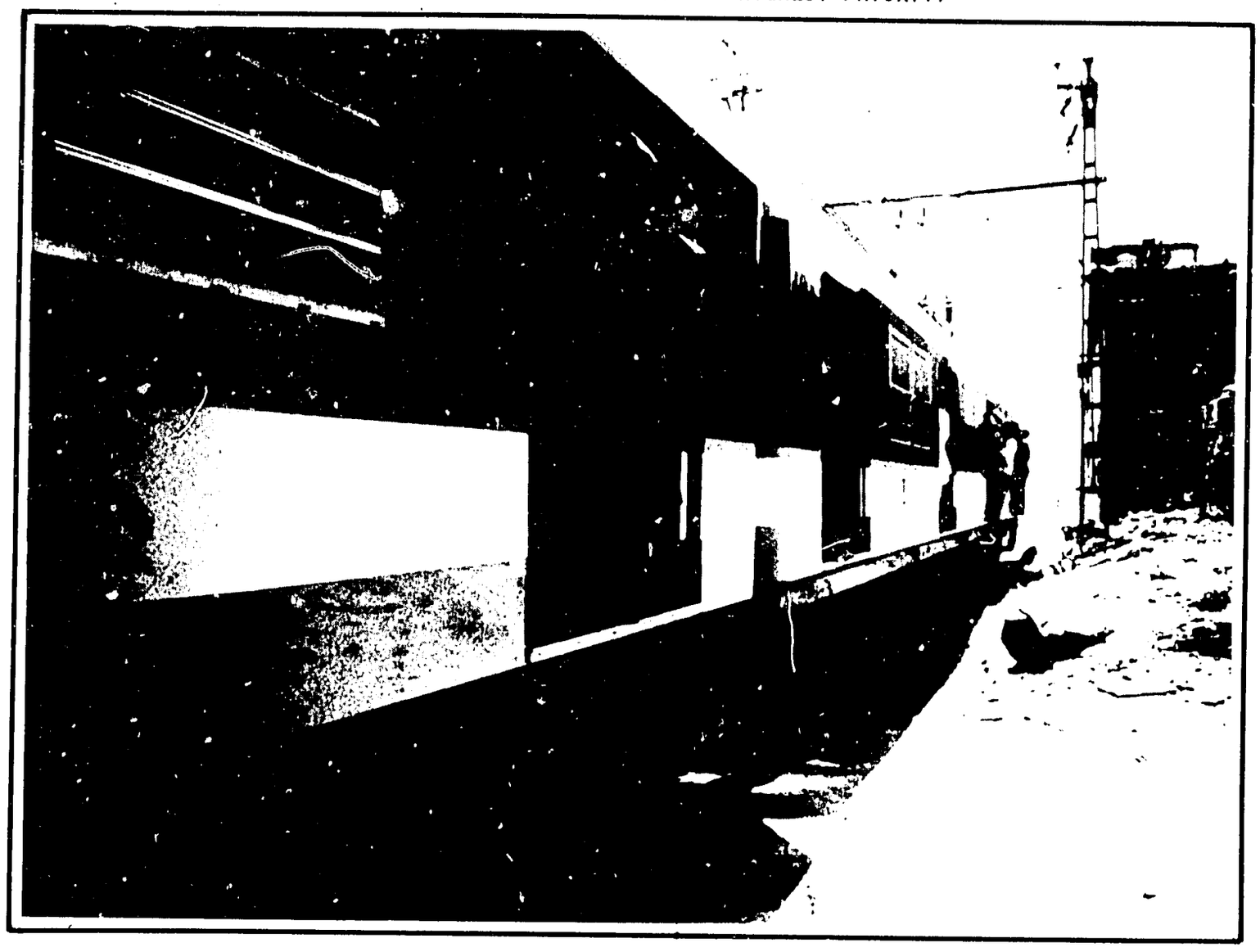
The Louis Berger/Dorsch Consult Phase I Study of the national interurban transportation system covered the period 1976-1980 and also made a wide range of recommendations covering every mode including an investment plan for L.E. 557.5 million for the five-year period (1976-1980), and an additional L.E. 150 million required for the expansion of the truck and bus fleet. The major share of the investment recommendations by the Berger Phase I National Transportation Study were intended to improve and/or rehabilitate the existing networks. Very few major new corridors were recommended. (Table V-32)

The basic strategy of rehabilitation and improvement of the existing networks continues in the NEDECO Phase II investment plan although there are some specific modal priorities that are different. In this context, aside from differences in opinion as to how congestion in the Port of Alexandria might be dealt with and the possibility of a new port at Damietta, recommendations are quite similar. For example, the Berger report proposed that a major effort needed to be expended on the railway system. These recommendations were confirmed by the NEDECO team. In this context of general policy and investment strategy congruence, it is worth highlighting the findings and conclusions of the NEDECO Phase II National Transportation Study.

i) The NEDECO report assigned the rehabilitation of the Egyptian railway network the highest priority in the national transportation planning effort. Major renewals were recommended for the railroad's rolling stock and strong recommendations were made for improved operating efficiency in order to obtain the full benefits of a rehabilitation program. Recommendations were also made for upgrading unit-freight and second/third-class passenger services as top priorities in a strategy designed to restore the Egyptian railroad's viability in the long-term future. It was considered that in no other sub-sector of the Egyptian transportation system had the balance between revenues and costs deteriorated so seriously and that this deterioration had affected seriously the level of operational efficiency of the railway.

ii) Based on their examination of the highway sector, the NEDECO team indicated that neglect of maintenance and the laxness of adherence to construction standards was one of the major problems identified. The primary and secondary roads were found to have deteriorated and fallen away from their original design capacity. In many cases, they were no longer maintainable. In that context, the bulk of the highway investment and other expenditure programs recommended by the consultants included reconstruction and upgrading of these deteriorated highways. This was to

REHABILITATION OF THE EGYPTIAN RAILWAY NETWORK HAS THE HIGHEST PRIORITY



be coupled with improved maintenance procedures and operations.

iii) Only a modest investment program was recommended for the waterways sector with the majority of it to be spent in upgrading the Beheira/Nubaria Canals in order to safeguard navigation between Cairo and Alexandria. The consultants noted that irrigation was of overruling importance, and river transport would continue to be mainly a by-product of the irrigation water requirements. They indicated that the key strategy in this sector would have to concentrate on keeping navigation conditions from deteriorating further rather than expanding.

iv) Only minor recommendations were made with respect to pipelines, aviation and seaport transportation sectors and the investment programs were relatively modest. Detailed analysis of the aviation and airport sector plans of the government with respect to modernizing airport facilities were considered very ambitious and based on optimistic assumptions. The consultants recommended re-evaluation of some of these plans and the re-establishment of new priorities.

v) In terms of the Terms of Reference, the problem of seaports planning was not to be considered by the consultants. However, because of its importance to transport development, a number of the issues were examined. It was their view that foreign trade estimates previously made were over-optimistic and, in some cases, unrealistic. They had reservations about a number of other basic assumptions and conclusions, particularly those which led to the recommendation of building new port facilities in the Damietta area. However, the consultants did not consider Damietta's feasibility in detail.

TABLE V-33
PROPOSED EGYPTIAN TRANSPORT SECTOR INVESTMENT
FOR THE PERIOD 1981-2000
(In 1979 Prices -- Economic)
(L.E. Million)

Year	Rail Investment: Rolling Stock Only	Rail Investment: Total	Highway Investments: Excl. Maint. & Fleet	Highway Investments: Incl. Maint. & Fleet 1/	Waterway Investment: Excl. Maint. & Fleet	Waterway Investment: Incl. Maint. & Fleet	PORTS	PIPE-LINES	AIR	Total Investment: Maint. & Fleet Incl.	Total Investment: Maint. & Fleet Excl.
1981	--	13.8	32.7	282.5	2.6	8.8	NO RECOMMENDATIONS -- Not in Terms of reference.	No details available and not included here. 2/	No recommendation. For 1980-84, see Annex VII, pg. 343.	305.1	49.1
1982	--	15.3	54.4	307.1	2.6	8.8				331.2	72.3
1983	--	21.1	51.7	307.5	2.6	8.8				337.4	75.4
1984	57.0	76.8	55.3	314.6	2.6	8.8				400.2	77.7
1985	9.2	29.0	42.4	305.4	2.6	8.8				343.2	64.8
1986	9.3	31.3	52.1	319.1	2.6	8.8				359.2	76.7
1987	23.2	43.1	52.7	324.6	2.9	9.1				376.8	75.5
1988	15.6	43.5	52.0	326.4	1.1	8.2				378.1	81.0
1989	17.7	37.4	52.0	329.8	1.1	8.2				375.4	72.8
1990	76.2	49.9	55.0	335.4	1.1	8.2				393.4	79.8
1991	27.6	53.0	58.0	342.0	1.2	8.3				403.3	83.6
1992	28.9	46.1	61.0	348.4	1.2	8.3				402.8	79.4
1993	29.4	35.1	64.0	356.6	1.2	8.3				400.0	70.9
1994	32.1	37.8	66.0	362.6	1.2	8.3				408.7	72.9
1995	15.7	51.0	70.0	370.7	1.2	8.3				430.0	76.5
1996	37.2	39.9	74.0	379.9	1.2	8.3				428.1	77.9
1997	38.7	41.4	78.0	388.2	1.2	8.3				439.9	81.9
1998	72.0	75.5	82.0	397.7	1.2	8.3				481.5	85.9
1999	60.7	63.4	86.0	407.3	1.2	8.3				479.0	89.9
2000	93.3	94.5	90.0	417.1	1.2	8.3				519.9	91.8
TOTALS	625.2	898.9	1,229.3	6,923.9	33.8	169.5				7,993.2	1,535.8

1/ Includes maintenance that goes from L.E. 14.0 million in 1981 to L.E. 49.1 million in 2000; bus (intercity) replacement and renewal from L.E. 20.8 million in 1981 to L.E. 63 million in 2000; and L.E. 215 million per year throughout the period for truck renewal and replacement.

2/ Pipeline data indicates no facility expansion 1981-87 (See Main Report). Some expanding thereafter but no amount given. Of L.E. 218.8 million allocated to the transport/distribution component within the petroleum/natural gas sector, about L.E. 109 million is not allocated to specific projects to be specified in the second half of the 1978-82 Five Year Plan. The remainder (also in the Five Year Plan 1978-82 and not in Transport Sector), are presented in Annex VII.

SOURCE: NEDECO, Egypt National Transport Study, Final Draft Report, 1981; p. 69, Annex V, Ch. 13; p. 94 ff, Annex IV, Ch. 9; p. 71ff, Annex VI, Ch. 12; Annex VII, Relevant Chapter.

c. The Phase II National Transportation Plan Investment Program. The NEDECO Phase II study did not review all of the transport sectors with the same degree of detail. This reflected the nature of their Terms of Reference. Detailed studies were not required for ports, pipelines and air transportation as they were for the highway, waterways, road and rail sectors. Using the investment data that was developed and presented in the NEDECO Draft Final Report, total investments were aggregated. They have been summarized in Table V-33 showing estimated total investment from 1981 through 2000 expressed in 1979 (economic) prices. Before commenting on the tables, a number of important points need to be noted:

i) As noted previously, investment data for ports, pipelines and air transport have not been included because of a lack of detail in the NEDECO Phase II report. Some details are available from other studies, and data sources from the NEDECO report have been cited in Table V-33. However, details were not sufficient to provide a basis for estimating phased investments in these sectors.

ii) Investment has been shown with and without fleet and maintenance costs. It was not possible to separately identify rail maintenance costs in the NEDECO study. However, it has been assumed that the rail system is in such poor condition that

NEDECO attributed all investment to rehabilitation over the next 20 years.

iii) For water infrastructure investments, only aggregate investment for the entire period 1982-1987 (L.E. 14.7 million) and 1988-2000 (L.E. 14.0 million) were presented by the NEDECO Phase II National Transport Study. These values were phased on an equalized annual basis. For the waterways, this is probably a reasonable allocation. The fleet investment phasing for the waterways sector is based on NEDECO's estimate to 1987 and replacement thereafter (L.E. 35 million). Inland port investments are based on NEDECO totals for the period 1982-1987 and 1988-2000 phased on an equalized annual basis. The same basis has been used for locks and other components, and look-up tables for the waterways sector may be found in Table V-33.

iv) Presentation of the phased highway investments was difficult because the NEDECO study only provided detailed annualized investments for major programs up to 1987 (L.E. 258.8 million). The additional investment components beyond 1987 were cited as an aggregate only including L.E. 100 million for the Cairo Distribution System; L.E. 10 million for technical assistance and study; and L.E. 51 million for the tertiary and feeder roads (feeders into primary and secondary road systems). For the purpose of developing the investment program shown in Table V-33, these investments were phased annually following the overall budget constraints of 8 percent per annum identified by the NEDECO study for the period 1981-1987 and 5 percent for the period 1987-2000. Maintenance has been projected at 6 percent per annum following NEDECO's estimates and fleet expansions have been similarly projected. Some discrepancies exist between the investment flows in Table II-33 and the NEDECO Phase II report. However, it was felt to be more important to conform to the NEDECO overall budget constraints, and "slippage" of some investment into the post-1987 period (where that was not the case in the NEDECO study) was considered to be not serious. The NEDECO study itself noted that some of their 1981-1987 investment in the highway sector would probably "slip."

Turning to Table V-33, the investment pattern shown reflects a reasonable representation of the NEDECO recommendations, particularly for the period 1981-1987. It also reflects their intent to the year 2000 though they did not, in some instances, make annualized presentations. The aggregate investment totals in the table, however, appear to follow closely to their recommendations. To provide the basis for an overall comparison, Table V-34 summarizes the aggregate investment for the entire period including totals for each of the respective modes.

v) A review of the total annual investment for all of the modes (excluding ports, pipeline and air transportation) shown in Table V-33 indicates an annual investment level of L.E. 305 million in 1981 for all investments (including maintenance and fleet) increasing to L.E. 520 million by 2000. Obviously, the largest proportion of this investment is for basic maintenance and fleet renewals. As may be seen in Table V-33, the investment in infrastructure (excluding maintenance and fleets) varies from about 16-22 percent of the annual investment program shown for the period 1981-2000.

TABLE V-34
AGGREGATE INVESTMENT IN INTERCITY TRANSPORTATION
1981-2000 (L.E. Million)

Investment Category	MODE			
	Rail	Highway	Waterway	Total
1. Total	898.9	6,923.9	169.5	7,992.3
2. Infrastructure (ex. maintenance and fleet)	273.1	1,229.3	33.8	1,536.8
Percentage Distributions				
3. Infrastructure as % of total	30.4	17.8	17.9	19.2
4. Distribution -- by mode:				
a. Total	11.3	86.6	2.1	100.0
b. Infrastructure	17.8	80.0	2.2	100.0

SOURCE: Derived from Table V-33.

In terms of specific modal shares and emphasis, Table V-34 shows that highways account for about 90 percent of the total investment and 80 percent of infrastructure investment (investment excluding fleets and maintenance).

In terms of total investment or infrastructure, rail investment accounts for the second largest share — 11 percent of the total investment and 17.8 percent of infrastructure. The waterway sector accounts for only 2 percent of investment — total or infrastructure.

Finally, in terms of the relationship between infrastructure investment (excluding fleet and maintenance) and total investment (including maintenance and fleet), Table V-34 shows that in aggregate terms for the period 1981-2000, approximately 19 percent of the total is for infrastructure. In terms of each of the respective modes, the importance of the rehabilitation strategy for the rail sector is reflected in the fact that close to one-third of the rail sector investment is for infrastructure in contrast to only 18-20 percent for the highways and waterway sectors respectively.

Specific recommendations for new port developments were made by the Frederic R. Harris Team in its "Development Policy Ports of Egypt Strategy for 1980 through 2000."[4] A review of that study raises questions of method and feasibility of some of the conclusions but the broad scope of its recommendations do suggest likely directions. Their analysis evaluated seven ports and projected demand including the ports of Marsa Matruh, Alexandria/Dakahlia, Damietta,

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Port Said, Ismailia, Suez/Adakiya and Safaga. They recommended that no port development occur at Ismailia. The main points of their recommendations follow:

i) Develop a new port near Damietta.

ii) Increase the capacity of Port Said.

iii) Develop an international container transshipment terminal at the new port of Damietta.

iv) Additional development at Alexandria-Dakahlia, Suez-Adakiya and Safaga.

In July 1979, the Frederic R. Harris Co. and its associates published their Master Plan for the new Port of Damietta. Based on their estimates of normal traffic growth and traffic generated by the proposed new port, a number of regional transport infrastructure investments were identified. The only new requirements (over and above recommendations being made for expansion with or without the new port) were widening the highway between Damietta and Talkha to a four-lane divided highway (1985), and increase the capacity of the single railway Damietta-Sherbin-Talkha line.

6. Transportation Costs

As a base for evaluating the different infrastructure implications of alternative urban development strategies, unit infrastructure costs are required for capital, operations and maintenance.

The NEDECO study team provided a series of unit transportation costs expressed in economic terms and covering all modes. These costs, expressed in 1979 prices, are related to operating, maintenance and capital costs and are for typical or standard requirements. Tables V-35 through 42 summarize the cost data and a general review of highlights follows. Where relevant, reference will be made to specific tables where more detail is provided.

a. Operative Costs. Table V-35 shows the long-run marginal costs for intercity passenger and freight transportation (long-run costs here include capital plus variable maintenance costs). The table shows freight costs by specific mode.

Distance units are shown as well as varying modes of carriage and handling. These costs (and most of the others) reflect what the NEDECO staff call "future" costs reflecting a somewhat more typical (better) standard than at present. From the table, the relatively competitive position of rail for bulk goods is quite evident as is the truck combination for shorter trips. However, these are only roughly indicative since there are many other reasons why a specific shipper may select truck or rail. Tables V-36 - 38 provides some additional data for average costs for taxi, bus and trucks (for passenger and freight).

Table V-39 summarizes the operating costs per ton for inland waterways for the major route segments. These are easily converted to ton kilometers by applying the appropriate link distances available from the NEDECO Quarterly Report for July 15, 1980.

b. Capital Costs. Table V-40 presents capital costs for highways and covers new roads, conversions or upgrading of existing roads, ringroads, grade separated intersections, bridges and modernization of a typical two-lane highway.

TABLE V-35
UNIT TRANSPORTATION ECONOMIC COSTS BY MODE, 1980
Inter-city Passenger Transport (Long-Run Marginal Costs)1/

	MODE	COST PER KM (MILLION)
1.	Rail (Non-Air)	5
2.	Bus	8
3.	Taxi	14
4.	Car	22

Inter-city Freight Transport -- Rail & Road Cost Per Ton Km
In Milliemes
Long-Run Marginal Cost 1/

MODE	0-100	100-200	200-300	300-400	400-500	500-600	600-700	700-800
A. RAIL								
Mixed Freight	45-50*	43-45*	40.8	39.5	38.6	38.0	37.8	37.6
Unit Trains	50*	33	26.5	23.8	22.0	21.0	20.0	19.4
Baggaged Cargo	25*	19.6	17.0	15.2	14.2	13.4	13.0	12.7
Bulk Minerals	21*	17.6	15.6	14.4	13.6	13.0	12.8	12.6
B. ROAD								
Single Truck	60*	57*	56*	57*	60*	61*	62*	65*
Truck Combination	45*	37*	36*	36*	35*	35*	35*	35*

1/ Economic long-run marginal costs, include capital plus the variable maintenance costs.

*Estimated by interpretation from NEDECO data. Typically, unit trains do not operate over short distances, although volumes will affect economic viability.

SOURCE: NEDECO.

TABLE V-36
AVERAGE TRANSPORTATION OPERATING COSTS BY MODE

MODE	UNIT	COST	&	TYPE
Taxi	: per passenger km	11.2 13.9	milliemes "	economic financial
Bus	: per passenger km	8.6 7.4	" "	economic financial
Single Truck	: per ton km 1/	59.3 47.6	" "	economic financial
Truck Combination	: per ton km 1/	36.6 26.1	" "	economic financial

1/ Including loading and unloading

SOURCE: NEDECO

Table V-41, Parts A and B, provide economic capital costs for rail and inland waterways. No waterway capital costs appear to have been developed since no major canals are to be recommended. Primary emphasis has been put on maintenance and conservancy.

c. **Maintenance Costs.** Part C of Table V-41 provides unit cost data for maintenance on the highways, railways and the waterways. Table V-42 gives additional costs for waterway maintenance and infrastructure.

TABLE V-37
TRUCK FREIGHT TRANSPORT COSTS
OF FREIGHT TRANSPORT -- SINGLE TRUCK

RELATION	DISTANCE (Km)	PER TON (L.E.) Economic	PER TON (L.E.) Financial	PER TON KM (Millieme) Economic	PER TON KM (Millieme) Financial
Cairo - Tanta	97	5.94	4.73	61.3	48.8
Tanta - Alex.	129	7.41	5.89	57.4	45.6
Cairo - Alex. (agr.)	222	12.55	9.90	56.5	44.6
Cairo - Alex. (des.)	210	12.12	9.75	57.7	46.4
Cairo - Assiut	395	23.32	18.71	59.2	47.5
Assiut - Aswan	549	35.04	28.72	60.8	52.3
Cairo - Aswan	943	57.86	46.93	61.4	49.8
Alex. - Assiut 1/	590	33.87	27.19	57.4	46.1
Alex. - Aswan 1/	1,139	68.41	55.41	60.1	48.6
Cairo - Port Said	200	11.32	8.89	56.6	44.5
Cairo - Suez	138	7.97	6.29	57.7	45.6
Qena - Safaga	161	10.02	8.21	62.2	51.0

COST OF FREIGHT TRANSPORT -- TRUCK COMBINATION

RELATION	DISTANCE (Km)	PER TON (L.E.) Economic	PER TON (L.E.) Financial	PER TON KM (Millieme) Economic	PER TON KM (Millieme) Financial
Cairo - Tanta	97	3.91	2.87	40.3	29.6
Tanta - Alex.	129	4.83	3.47	37.4	26.9
Cairo - Alex. (agr.)	222	8.02	5.67	36.1	25.5
Cairo - Alex. (des.)	210	7.50	5.39	35.7	25.7
Cairo - Assiut	394	14.13	10.05	35.9	25.5
Assiut - Aswan	549	20.10	14.13	36.6	25.7
Cairo - Aswan	943	33.73	23.68	35.8	25.1
Alex. - Assiut 1/	590	20.36	14.34	34.5	24.3
Alex. - Aswan 1/	1,139	39.96	27.98	35.1	24.6
Cairo - Port Said	200	7.34	5.22	36.7	26.1
Cairo - Suez	138	5.22	3.76	37.8	27.2
Qena - Safaga	161	5.97	4.27	37.1	26.5

1/ Via desert road.

SOURCE: NEDECO.

TABLE V-38
ECONOMIC TRUCK FREIGHT COSTS
(L.E. Per Ton Kilometer)

DISTANCE (Km)	ECONOMIC COST/TKM Truck Comb.	ECONOMIC COST/TKM Single Truck	AVERAGE OF VALUES IN DISTANCE BLOCK AS SHOWN Truck Comb.	AVERAGE OF VALUES IN DISTANCE BLOCK AS SHOWN Single Truck
97	40.3	61.3	40	61
129	37.4	57.4		
138	37.8	57.7	37	59
161	37.1	62.2		
200	36.7	56.6		
210	35.7	57.7	36	57
222	36.1	56.5		
394	35.9	59.2	36	59
549	36.6	63.8	35	61
590	34.5	57.4		
943	35.8	61.4	36	61
1,139	35.1	60.1	35	60

SOURCE: NEDECO.

TABLE V-39
WATERWAY ECONOMIC COSTS
(Cost per Ton in L.E.)
(Upstream)

From/To	Code	18	16	1.1	1.2	22	23	24	26	27	28
Alexandria	18	--	2.8	4.2	4.5	6.2	7.8	9.5	10.9	12.8	16.0
S. Beheira	16	2.8	--	2.3	2.9	4.6	5.8	7.5	9.0	1.9	14.1
Cairo	1.1	3.9	2.3	--	1.5	3.2	4.4	6.2	7.3	9.5	12.7
Helwan	1.2	4.5	2.6	1.5	--	2.6	4.1	5.9	7.0	9.2	12.1
Beni Suef	22	5.9	4.3	2.9	2.6	--	2.5	4.2	5.3	7.5	10.4
Minia	23	7.5	5.5	4.1	3.8	2.2	--	2.6	4.1	5.9	9.1
Assiut	24	8.9	6.6	5.9	5.3	3.9	2.6	--	2.3	4.2	7.4
Sohag	26	10.0	8.4	7.0	6.7	5.0	3.8	2.0	--	2.8	6.0
Qena	27	11.9	10.3	8.9	8.3	6.9	5.6	3.9	2.8	--	4.1
Aswan	28	14.8	12.9	11.8	11.2	9.8	8.2	6.8	5.7	3.8	--

SOURCE: NEDECO.

TABLE V-40
HIGHWAY CAPITAL COSTS, FINANCIAL 1/
(Financial to Economic - 1.35 Factor)
(In Thousands L.E.)

Highway Type or Construction Category		AREA Desert Fin.	AREA Desert Eco.	AREA Non-Desert Fin.	AREA Non-Desert Eco.	Total Reserve Width (m)
A. New Roads						
No. of Carriage Ways	No. of Lanes					
1	2(1x2)	275	371	360	486	25
2	2(2x2)	500	675	610	824	40
2	3(2x3)	625	844	760	1,026	50
2	4(2x4)	750	1,012	910	1,228	60
B. Conversions of Existing Roads						
2 Lane to 2x2		250	338	275	371	--
2x2 to 2x3		125	169	150	202	--
2x2 to 3x4		375	506	450	608	--
C. Ringroads						
2x2		--	--	1,500	2,025	N.A.
2x3		--	--	2,000	2,700	N.A.
2x4		--	--	2,500	3,375	N.A.
D. Grade-Separated Intersections						
Major		--	--	30,000	40,500	--
Minor		--	--	7,500	10,125	--
E. Modernized 2-Lane Highway						
(Type 2.1.2 to 2.1.1) 2/		70	95	100	135	10

F. Bridges (Bridges x Section Width) 3/

Lanes	Width (m) (Incl. 1 or 2 Service Roads	Total Area (m^2)	Total Construction Cost (L.E. Thousand)
2 Lanes	16 (1 service rd.)	8,000	10,000
4 Lanes	30 (1 service rd.)	15,000	18,500
6 Lanes	41 (2 service rd.)	20,000	25,000
8 Lanes	48 (2 service rd.)	24,000	30,000

1/ Land acquisition costs assumed to be L.E. 1.4 per square meter.
2/ Upgrade 6.0 m carriageway to 7.5 m.
3/ Average length of Nile Bridge = 500 m
Unit Construction Cost = L.E. 1,250/sq m

SOURCE: NEDECO.

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TABLE V-41
ECONOMIC CAPITAL COSTS FOR RAILWAYS AND MAINTENANCE COSTS · FOR RAIL, HIGHWAY, WATER
(1979 Prices)

A. Economic Capital Costs Per Km -- Railway

Item	Cost Per Km (Thousands L.E.)
Doubling Truck	160
Mechanical	20
Electric	200

B. Waterways Capital Costs

NO NEW CANALS NEEDED OR RECOMMENDED -- NO COSTS PREPARED

C. Economic Maintenance Costs Per Kilometer

1. HIGHWAY	0-50 ADT	50-100 ADT	100-200 ADT	200-300 ADT	300-400 ADT	400-500 ADT	500-600 ADT	600-800 ADT	800-1,000 ADT	1,000- ADT
a. Paved 1/	1,140	1,150	1,180	1,220	1,250	1,300	1,350	1,410	1,470	1,540
b. Gravel	360	550	780	1,080	1,400	1,700	1,750	--	--	--
c. Clay	500	1,150	2,200	--	--	--	--	--	--	--

2. RAILWAY	NORMAL MAINTENANCE	REHABILITATION
a. Total Network	L.E. 2,528	L.E. 1,516
b. Class I and II 2/	3,090	--

WATERWAYS	UNIT	FINANCIAL	ACCTRY FACTOR	ECONOMIC
a. Dredging	L.E./m^3	0.35	1.77	0.12
b. Slope Protection (Simple)				
-- Placing	L.E./m	145.50	1.07	156.30
-- Maintenance	L.E./m	1,000.00	1.00	1,000.00
c. Gauge Repair Demand Bridges	L.E./Bridge	20,000.00	1.00	20,000.00
d. Yearly Lock Maintenance	L.E./Lock	20,000.00	1.00	20,000.00
e. Yearly/Bridge Maintenance	L.E./Bridge	2,000.00	1.00	2,000.00
f. Fenders	L.E./Bridge	6,400.00	1.00	6,400.00

1/ Paved road is Type 2.1.2, 6.5 meters wide, 2 lanes.

2/ Class I permits speeds of 100 kph or has daily tonnage of more than 40,000 gross tons; Class II permits speeds of 60-100 kph or daily tonnage of 15,000 - 40,000 gross tons.

SOURCE: Highway data from Figure 1.35 supplied by NEDECO, railway based on NEDECO data.

It might be noted, in connection with the railway maintenance costs, that normal maintenance costs refer to relatively standard procedures. The rehabilitation costs are those required to bring the line back to some standard level and are typically over and above normal maintenance costs.[5]

In terms of highway maintenance, sand and gravel roads are almost identical and costs for gravel have been shown for both.

TABLE V-42
ECONOMIC COSTS OF WATERWAY CONSERVING AND INFRASTRUCTURE

Dredging

ITEM	FINANCIAL %	FINANCIAL LE/m^3	ACCOUNTING FACTOR	ECONOMIC %	ECONOMIC LE/m^3
Labor-unskilled	11	0.040	0.50	3	0.02
-skilled	11	0.040	1.00	6	0.04
Materials	--	--	--	--	--
Equipment-capital	29	0.100	1.39	23	0.14
-maintenance/repair	23	0.080	1.00	13	0.08
-fuel	10	0.035	8.00	45	0.28
Overhead/miscellaneous	16	0.055	1.00	10	0.06
TOTAL	100	0.350	1.77	100	0.62

Slope Protection

Materials

ITEM	FINANCIAL %	FINANCIAL LE/m^3	ACCOUNTING FACTOR	ECONOMIC %	ECONOMIC LE/m^3
Labor-unskilled	9	0.40	0.50	4	0.20
-skilled	2	0.10	1.00	2	0.10
Materials	22	1.00	1.00	21	1.00
-transport	44	2.00	1.15	51	2.30
-misc.	17	0.75	1.00	16	0.75
Equipment	--	--	--	--	--
Overhead/miscellaneous	6	0.25	1.00	6	0.25
TOTAL	100	4.50	1.02	100	4.60
Placing Slope Protection	135.00		1.02	137.70	
Dredging Total	10.50		1.77	18.60	
TOTAL	145.50		1.07	156.30	

SOURCE: NEDECO.

TABLE V-43
ORIGIN-DESTINATION MATRIX
DOMESTIC AIR TRAVEL PASSENGER MOVEMENTS, 1978

ORIGIN \ DESTINATION	CAIRO	LUXOR	ASWAN	ABU SIMBEL	NEW VALLEY	HURGADA	TOTAL
CAIRO		65,711	36,355	13,929	822	5,023	121,840
LUXOR	68,796		15,403	36	--	--	84,235
ASWAN	36,953	16,525		70,928	--	--	124,406
ABU SIMBEL	11,172	35	73,142		--	--	84,349
NEW VALLEY	938	--	82	--		--	1,020
HURGADA	5,333	82	--	--	--		5,415
TOTAL	123,192	82,353	124,982	84,893	822	5,023	421,265

SOURCE: NEDECO, Quarterly Report, 1-15-80, Page 9.4, Table 9.3.

TABLE V-44
ESTIMATED ORIGIN-DESTINATION MATRIX — DOMESTIC PASSENGER MOVEMENTS, 1979
Based on Figures from 1978 & Jan. thru June, 1979

ORIGIN \ DESTINATION	CAIRO	LUXOR	ASWAN	ABU SIMBEL	NEW VALLEY	HURGADA	TOTAL
CAIRO		83,900	46,600	16,200	1,500	5,500	132,700
LUXOR	84,100		18,200	--	--	--	102,300
ASWAN	57,000	18,100		98,000	100	--	173,200
ABU SIMBEL	12,200	--	99,000		--	--	111,200
NEW VALLEY	1,800	--	100	--		--	1,900
HURGADA	5,800	--	--	--	--		5,800
TOTAL	160,900	102,000	163,900	114,200	1,600	5,500	548,100

SOURCE: NEDECO, Quarterly Report, 1-15-80, Page 9.6, Table 9.8.

B. Telecommunications

Telecommunications is one of the essential requirements for national development. The availability and quality of facilities and service influences the desirability of economic locations and the quality of life enjoyed by the population.

The following section summarizes the main characteristics of the present telecommunications system in Egypt, its expected growth and the actions proposed to upgrade that system and improve its organization and performance.[6]

Responsibility for telecommunications is in the A.R.E. Telecommunications Organization (ARETO), which reports to the Minister of Transport, Communications and Marine Transport.

1. The Present System

The present telecommunications network in Egypt consists of a basic network of automatic switching equipment, an associated network of inter-office junctions within the multi-exchange areas of Cairo and Alexandria and a national trunk network between manual and automatic switchboards.

As shown in Table V-46, the capacity of automatic exchanges is about 393,260 lines; of which 306,745 lines are working lines. To this capacity should be added another 30 percent for manual exchange lines in the Delta and Upper Egypt. Of these, 92 percent are working lines.

The exchanges vary in size from small manual switchboards of a 10-line capacity to multi-office installations consisting of up to 35,000 lines of X-bar automatic switching equipment. Small remote villages are served by manual switchboards located in the police stations or agricultural centers, and operated only during daylight hours. All units regardless of size or location are connected to the outside world by an extensive network of long distance circuits and to all facilities, many of which are open wire. These circuits converge on the zone centers which are linked to each other by VF cable, coaxial cables and microwave.

Maps V-1a and V-1b show the existing exchanges in Lower and Upper Egypt. Figure V-1 shows the distribution of existing and proposed trunk switches, and Map V-2 shows the configuration of existing and proposed Trunk Network Transmission facilities.

A major project is currently underway to expand the Coaxial system, particularly in Upper Egypt, and the Micro-wave system from Cairo to the Libyan border through Alexandria. Contracts

have been signed for 25 new automatic trunk exchanges bringing the total to 28 districts, zones and group centers.

Presently, most access to the national toll network is through seven national centers in Cairo, Alexandria, Mahalla, Damanhour, Mansoura and Tanta. All international connections to and from Egypt are physically routed and manually handled through Cairo; with coaxial cable connections to Alexandria. The principal outlets are two submarine cables, one to Italy (at Catanzaro) with a capacity of 480 channels, and the other to Lebanon (at Beirut) with a capacity of 140 channels. Additionally, a non-standard earth station is currently being replaced. It provides connection to the U.S.A. and Paris on a limited basis. To the south of Egypt, the Sudan is connected via a tropospheric scatter system.

TABLE V-46
EXISTING TELEPHONE CAPACITY BY REGION
1978

REGION	Automatic Exchanges	
	Capacity	Working Lines
Cairo	224,600	194,226
Alexandria	63,000	58,444
Delta	55,200*	30,995
Canal Zone	18,000*	7,019
Upper Egypt	31,600*	15,889
Red Sea	860*	372
TOTAL	393,260	306,905

*Additional capacity to be operational in 1980; Delta (21,700), Canal Zone (9,400), Upper Egypt (13,800), Red Sea (300).

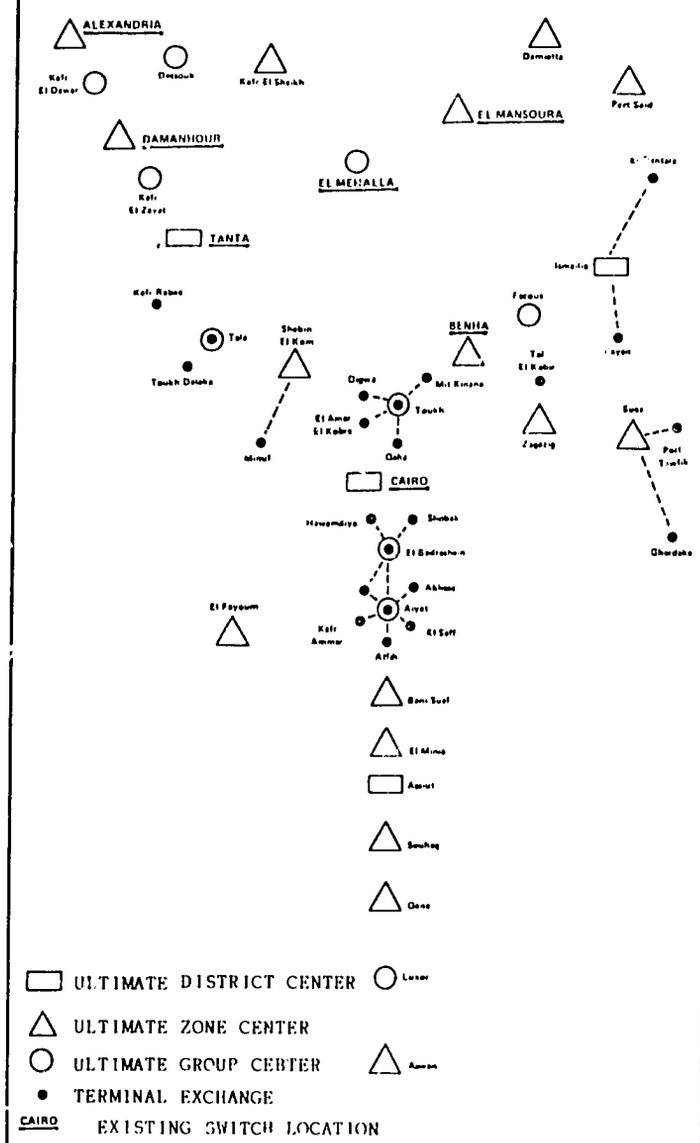
SOURCE: Telecommunications Sector Study, A.R.E., Continental Telephone Holding Company, April 1978.

TABLE V-45
ORIGIN-DESTINATION MATRIX
AIR FREIGHT (TONS) DOMESTIC 1978

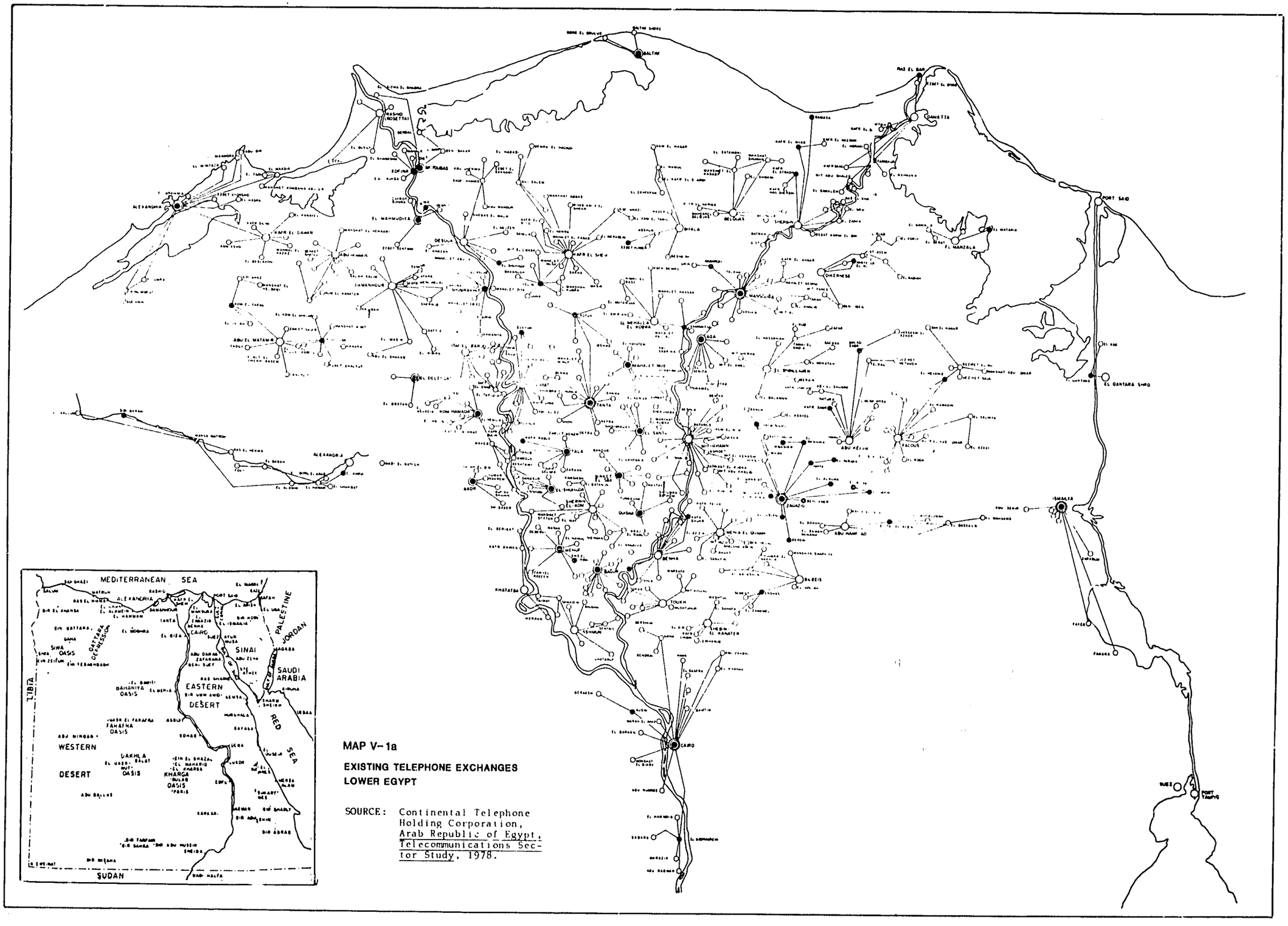
ORIGIN \ DESTINATION	CAIRO	LUXOR	ASWAN	ABU SIMBEL	NEW VALLEY	HURGADA	TOTAL
CAIRO		453	536	3.9	27.5	0.7	1,021.1
LUXOR	1.1		0.1	--	--	--	1.2
ASWAN	1.9	0.3		31.7	--	--	33.9
ABU SIMBEL	--	--	--		--	--	--
NEW VALLEY	--	--	--	--		--	--
HURGADA	--	--	--	--	--		--
TOTAL	3.0	453.3	536.1	35.6	27.5	0.7	1,056.2

SOURCE: NEDECO, Quarterly Report, 1-15-80, p. 9.7; Table 9.11.

FIGURE V-1
EXISTING AND PROPOSED ARETO TRUNK SWITCHES



SOURCE: Telecommunications Sector Study, A.R.E., Continental Telephone Holding Company, April 1978.



MAP V-1a

EXISTING TELEPHONE EXCHANGES LOWER EGYPT

SOURCE: Continental Telephone Holding Corporation, Arab Republic of Egypt, Telecommunications Sector Study, 1978.

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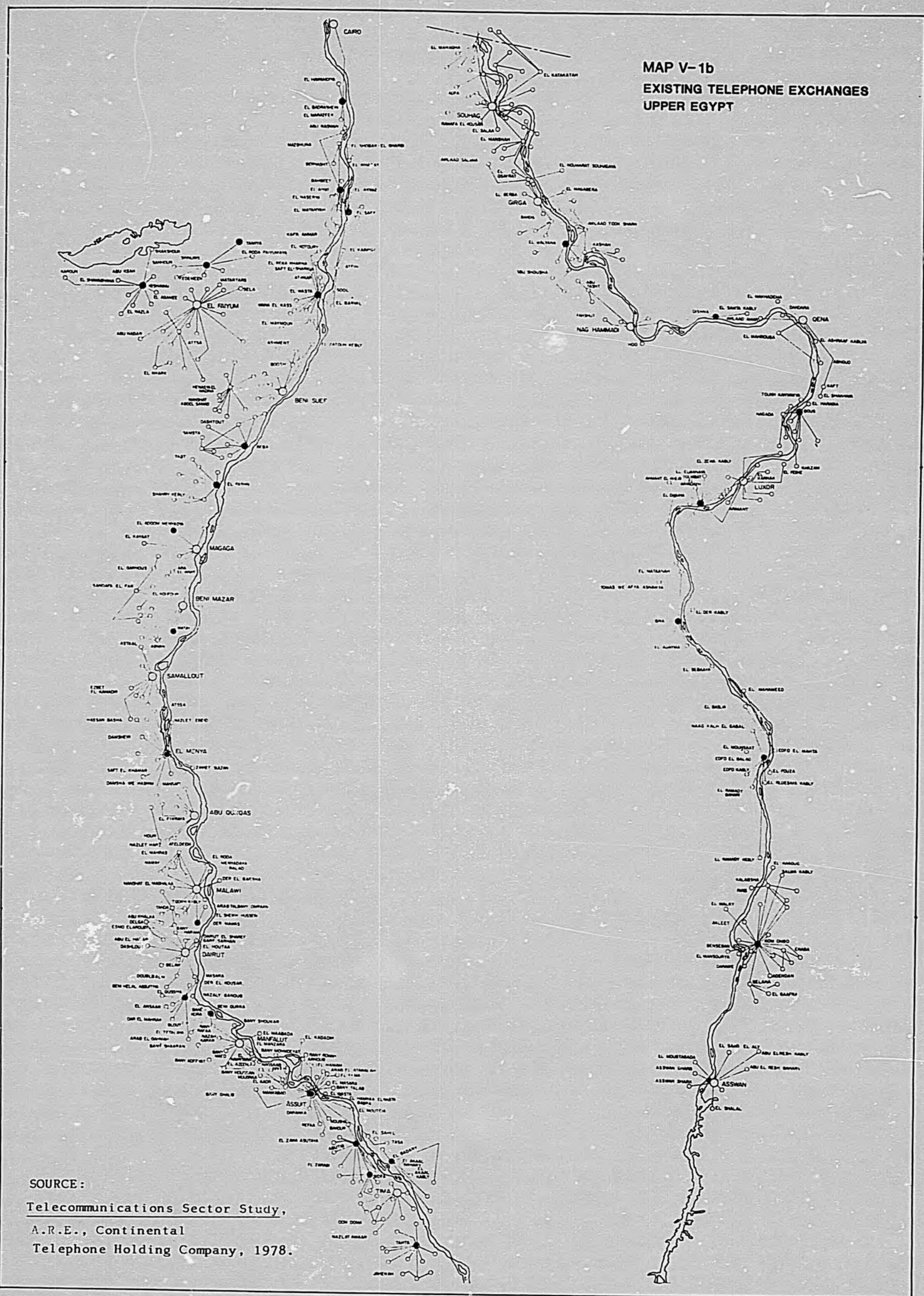
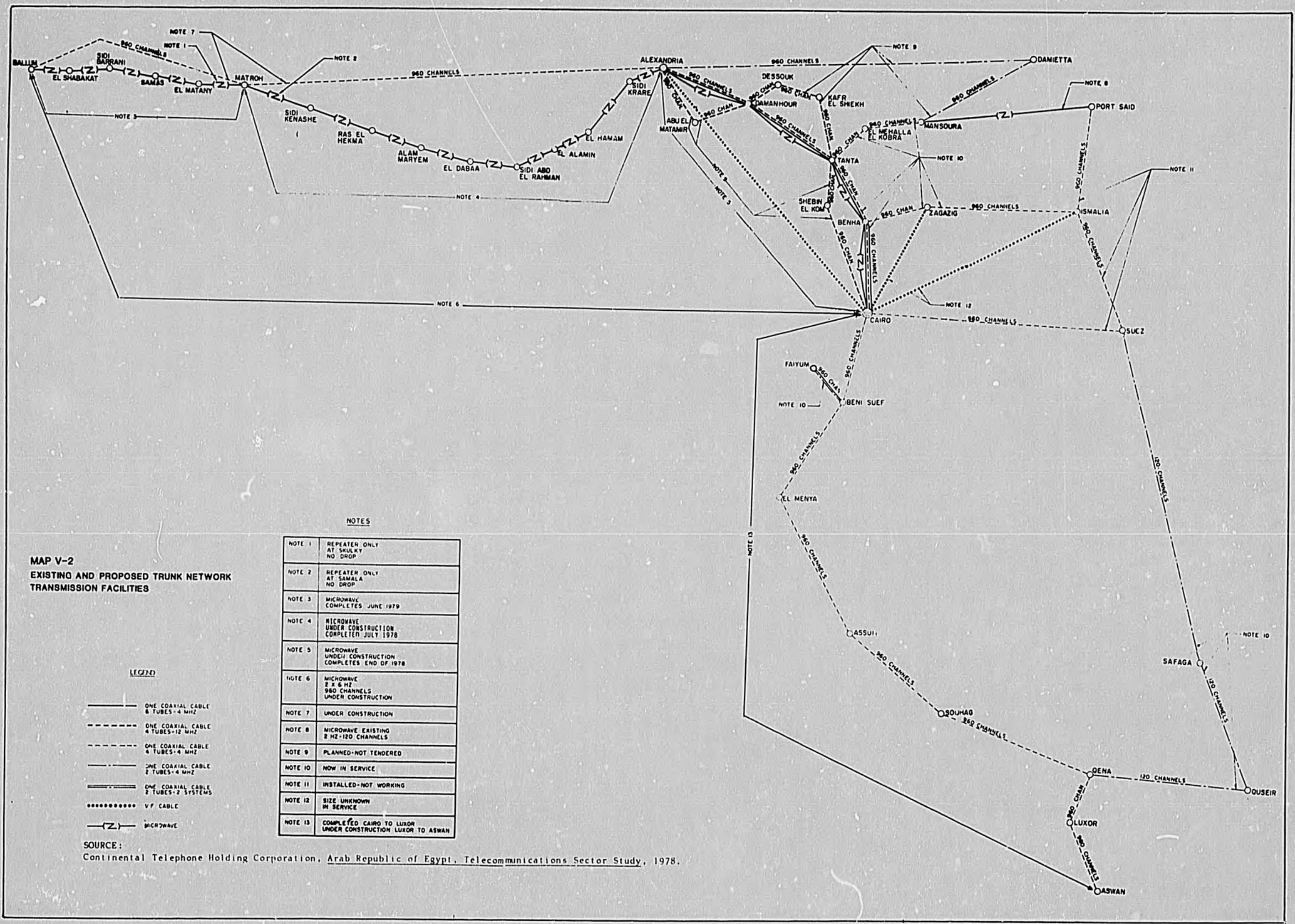


MAP V-1b
EXISTING TELEPHONE EXCHANGES
UPPER EGYPT

SOURCE:
Telecommunications Sector Study,
A.R.E., Continental
Telephone Holding Company, 1978.



MAP V-2

EXISTING AND PROPOSED TRUNK NETWORK TRANSMISSION FACILITIES

LEGEND

- ONE COAXIAL CABLE 6 TUBES-4 MHZ
- ONE COAXIAL CABLE 4 TUBES-12 MHZ
- ONE COAXIAL CABLE 4 TUBES-4 MHZ
- ONE COAXIAL CABLE 2 TUBES-4 MHZ
- ONE COAXIAL CABLE 2 TUBES-2 SYSTEMS
- VF CABLE
- MICROWAVE

NOTES

NOTE 1	REPEATER ONLY AT SKULKY NO DROP
NOTE 2	REPEATER ONLY AT SAMALA NO DROP
NOTE 3	MICROWAVE COMPLETES JUNE 1979
NOTE 4	MICROWAVE UNDER CONSTRUCTION COMPLETEN JULY 1978
NOTE 5	MICROWAVE UNDER CONSTRUCTION COMPLETES END OF 1978
NOTE 6	MICROWAVE 2 X 6 HZ 960 CHANNELS UNDER CONSTRUCTION
NOTE 7	UNDER CONSTRUCTION
NOTE 8	MICROWAVE EXISTING 2 HZ-120 CHANNELS
NOTE 9	PLANNED-NOT TENDERED
NOTE 10	NOW IN SERVICE
NOTE 11	INSTALLED-NOT WORKING
NOTE 12	SIZE UNKNOWN IN SERVICE
NOTE 13	COMPLETED CAIRO TO LUXOR UNDER CONSTRUCTION LUXOR TO ASWAN

SOURCE:
Continental Telephone Holding Corporation, Arab Republic of Egypt, Telecommunications Sector Study, 1978.

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Small international switchboards with very limited capacity have recently been placed in Alexandria and Port Said, and a third unit planned for Suez. Also since 1978 a new Automatic International Exchange has been in service allowing for up to 720 selected business customers to have international subscriber dialing (ISD) facilities.

There are two Telex exchanges with a capacity of 120 international telex circuits. The exchanges are in Cairo and Alexandria; however, all telex messages are routed through Cairo. From this exchange about 70,000 calls are completed every month on IBM magnetic tape units. There are automatic direct international trunk groups to Rome, London, Geneva, Frankfurt, Paris, Vienna, Tokyo, Athens, Saudi Arabia, Western Union, ITT and RCA. The Rome, Vienna and Western Union groups also serve as Tadem Traffic to other destinations.

2. Future Service Proposed

Based on 1978 data presented in Table V-47, demand for domestic telephone lines was estimated at 1,060,000 for 1980, increasing to 4,480,814 in 1999. The 1980 figure is approximately three times the number of lines currently in service in Egypt. The potential demand for domestic telegraph service is forecast to be 175 million words in 1980, increasing to 270 million words in 1999. The potential demand for domestic Telex was forecast to be 6.5 million telex minutes in 1980 increasing to 31.0 million minutes in 1999.

The projected demand for international telephone traffic was estimated at 27 million minutes in 1980, increasing to 116 million minutes in 1999. International telegraph traffic demand is forecast to be 265 million words in 1980, increasing to 592 million words in 1999. International Telex demand is forecast to be 121 million minutes in 1980, increasing to almost 475 million minutes in 1999.

To meet these needs, a development master plan was proposed (see Volume 5 of the ARETO report) to improve and augment the

TABLE V-47
EGYPT SUMMARY OF TELECOMMUNICATIONS DEMAND FORECAST

	1978 Existing	1980	1981	1982	1983	1984	1989	1994	1999
Domestic:									
Telephone Lines (Thousands)	393	1,060	1,167	1,271	1,400	1,548	2,141	3,099	4,481
Total Outgoing Telegraph Words (Thousands)	N.A.	174,760	183,702	192,508	201,348	212,585	232,237	250,495	270,385
Total Outgoing Telex Minutes (Thousands)	N.A.	6,497	7,220	7,965	8,771	9,619	13,862	20,421	31,013
International:									
Total Telephone Minutes (Thousands)	N.A.	27,327	29,372	31,569	33,559	37,358	53,583	78,381	115,671
Total Telegraph Words (Thousands)	N.A.	264,726	275,616	283,635	298,716	315,183	385,440	477,774	592,185
Total Telex Minutes (Thousands)	N.A.	121,152	129,713	138,881	148,698	162,878	229,176	330,731	474,857

SOURCE: Telecommunications Sector Study, A.R.E., Continental Telephone Holding Company, April 1978.

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existing facilities, organization, and management in the areas of numbering, national switching, transmission, microwave systems, and for the introduction of new and improved telecommunications services. (Table V-48) Map V-2 shows the delineation of the existing and proposed trunk networks. The plan takes into account and builds upon the contracts and projects which have been undertaken by ARETO since 1977 to improve and update its telecommunications system.

C. Electrical Power System

1. Background

The nationwide electrical power system is composed of two major hydroelectrical power plants located at Aswan and 26 petroleum or natural gas fired thermal plants located mainly in Cairo, Alexandria, the Delta and Canal regions. As of 1979, the system had a total installed capacity of 4,229 megawatts (MW) of which 58 percent was from hydroelectrical power generating plants. During 1979, the sector's total gross generation was 16,359 million kilowatt hours (KWh) and gross sales were 14, 675 kWh. Losses due to transmission and distribution and station use accounted for the remaining 10.3 percent.

During the period 1969-1979, the electrical power sector achieved an annual average growth rate in gross generation of 9.8 percent, while installed capacity increased at a rate of 1.2 percent largely due to commission of new thermal stations as hydroelectric capacity (largely located at the Aswan High Dam). (Table V-49)

Due to the major power generating facilities at Aswan, which were away from major load centers, Egypt's hydroelectric and thermal power facilities were interlinked through development of the Unified Power Grid which is composed of two 500 KV bulk transmission lines extending from Cairo and a 220 KV network which serves loads in the Delta, Alexandria and the Suez Canal Regions. The Unified Power Grid is also composed of sub-bulk transmission networks having lower voltages of 132 KV, 66 KV and 33 KV. The entire Unified Power Grid and its transmission zones are shown in Map V-3.

TABLE V-48
PROJECTED CAPITAL INVESTMENT AND YEAR 2000 DISTRIBUTION OF TELEPHONE LINES
1978

Communications Zone and Major Settlement Exchanges	Projected Capital Investment Program 1980 -- 2000 (L.E. '000)	Existing No. of Lines (1978)	Projected Total Number of Lines1/ (2000)	Cost Per New Line (L.E.)	Cost Per Capita (L.E.)2/
Cairo Zone	5,705,053	196,629	2,209,168	2,583	516.49
Districts	4,782,726	196,629	2,209,168		
Misc.	874,750				
Others	47,577				
Alexandria Zone	1,950,833	58,573	691,256	2,822	564.43
Districts	1,674,315	57,966	684,343		
Kafr El Dawar	18,479	607	6,913		
Misc.	249,022				
Others	9,007				
Canal Zone	1,333,152	7,019	481,790	2,764	553.42
Ismailia	341,518	575	132,040		
Port Said	495,489	4,625	196,750		
Suez	361,610	1,819	138,990		
Other Canal Settlements	38,830	--	14,010		
Misc.	95,705				
Delta	2,124,178	31,928	778,330	2,729	545.83
Benha	86,392	1,929	36,230		
Damanhour	117,770	2,722	51,110		460.85
Damietta	83,687	1,991	37,400		
Dessouk	52,174	1,199	22,520		
Kafr El Shiekh	48,681	1,198	22,490		
Mansoura	154,005	5,967	75,920		405.70
Mahalla El Kobra	122,804	2,904	54,540		
Mit Ghamr	62,827	1,972	30,140		
Tanta	241,266	5,980	112,340		429.53
Zagazig	100,672	2,395	44,990		
Other Exchanges	736,641	3,671			
Misc.	317,259				
Upper Egypt Zone	1,046,834	15,891	346,799	3,019	603.74
Assiut	75,767	3,943	31,770		476.97
Aswan	73,702	1,704	28,940		
Beni Suef	41,519	1,576	16,540		
Fayoum	129,283	1,965	49,570		
Minya	83,120	2,406	32,630		
Mallawi	19,142	896	9,410		406.84
Sohag	35,574	1,600	16,780		
Gerga	11,341	395	5,020		
Qena	100,689	789	34,700		
Luxor	75,403	597	28,090		
Other Exchanges	253,188				
Misc	148,106				
Others					
TOTALS 3/	12,160,050	310,040	4,597,150	2,645.13	529.03

Total Percapita Cost/Urban Population = 328.65

1/ Investment program includes replacement of existing telephone lines.

2/ Per capita costs were estimates by multiplying the projected number of lines by five persons per line and dividing that amount into the zone's projected capital investment.

3/ Totals are those of the telecommunications sector study.

SOURCE: Telecommunications Sector Study, A.R.E., Continental Telephone Holding Company, April 1978.

Although the system had a total installed capacity of 4,229 MW in 1979, its total available generating capacity is only 3,404 MW due to the dual use of hydro facilities for irrigation and power, derating of existing thermal plants due to age and deterioration and system stability limitations resulting from power transmission over the 550 KV network. Thus, when reserve requirements of approximately 21 percent (1979) are subtracted from total available capacity, total peak loading to accommodate maximum or peak demand is 2,829 MW.[7]

2. Access to Electricity

About 65 percent of Egypt's urban population and 23 percent of its rural population had access to electricity by 1980 as the result of GOE's rural electrification program and assistance provided by various international multilateral and bilateral agencies.[8] Although standards of consumption are low by international standards, nevertheless Egypt does have annual per capita consumption rates which are higher than several other countries in the region, as shown in Table V-50.

3. Rural Electrification

A National Rural Electrification Plan under the jurisdiction of the Rural Electricity Authority (REA) has been initiated with the principal objective of extending electrical service to rural populations not served and rehabilitating networks around urban areas. Upon completion, electricity would be extended to about 28 million rural and urban Egyptians of which about 60 percent are not currently served. The program has the following targets:

i) Completing electrification of 5,000 villages which have populations greater than 1,000 by 1983.

ii) Electrification of 30,000 rural attachments (small settlements not classified by the REA as villages) with populations between 100 and 1,000 after 1983.

Financing for the Rural Electrification Plan has come from both the Government of Egypt and international lenders. Priorities for development of the plan targets were determined through ranking regions according to socio-economic criteria (i.e., existing access to electricity, the need for rehabilitation of existing access to electricity, the need for rehabilitation of existing facilities and the availability of existing power resources in the region to support additional loads).[9]

4. Sector Organization

Egypt's energy sector is managed by the Ministry of Electricity and the Ministry of Petroleum. The power sub-sector is further controlled by four entities under the Ministry of Electricity:

i) The Egyptian Electrical Authority (EEA), a publicly-owned enterprise responsible for all electricity generated and transmitted in Egypt.

TABLE V-49
COMBINED INSTALLED CAPACITY, GENERATED POWER AND MAXIMUM LOAD OF EGYPT'S ELECTRICAL POWER SYSTEM

Year	Combined Capacity M.W.			Generated Power (Million KWH)			Maximum Load in M.W.
	Thermal	Hydro	Total	Thermal	Hydro	Total	
1952	154	--	154	423.0	--	423.0	125
1953	205	--	205	567.0	--	567.0	137
1954	251	--	251	759.0	--	759.0	160
1955	321	--	321	881.0	--	881.0	173
1956	331	--	331	984.0	--	984.0	186
1957	466	--	466	1,109.0	--	1,109.0	210
1958	511	--	511	1,264.0	--	1,264.0	250
1959	511	--	511	1,422.0	--	1,422.0	282
1960	541	256	797	1,648.0	--	1,898.0	372
1961	593	345	938	1,948.0	1,003.0	2,951.0	522
1962	593	345	938	2,001.0	1,162.0	3,163.0	548
1963	593	345	938	2,132.0	1,269.0	3,401.0	590
1964	593	345	938	2,405.0	1,662.0	4,067.0	659
1965	672	345	1,017	2,897.0	1,737.7	4,634.7	750
1966	1,062	381	1,443	3,275.4	1,828.4	5,103.8	824
1967	1,207	1,221	2,428	3,469.0	1,962.8	5,431.8	872
1968	1,350	1,730	3,080	3,041.8	3,002.4	6,044.2	930
1969	1,410	2,333	3,743	2,456.7	3,988.3	6,445.0	987
1970	1,330	2,445	3,775	2,225.5	4,689.9	6,915.4	1,109
1971	1,330	2,445	3,775	2,282.6	5,040.7	7,323.3	1,160
1972	1,330	2,445	3,775	2,224.8	5,159.4	7,384.2	1,176
1973	1,330	2,445	3,775	2,279.2	5,155.6	7,434.8	1,248
1974	1,330	2,445	3,775	2,397.3	6,121.8	8,519.0	1,433
1975	1,330	2,445	3,775	3,009.3	6,790.3	9,790.6	1,733
1976	1,344	2,445	3,789	3,642.7	8,002.8	11,645.5	1,909
1977	1,415	2,445	3,860	4,479.1	9,037.5	13,516.6	2,284
1978	1,460	2,445	3,905	5,077.6	9,935.1	15,012.7	2,564
1979	1,784	2,445	4,229	6,750.7	9,608.3	16,359.0	2,829

SOURCE: Annual Report: Electricity Statistics. Egyptian Electricity Authority. (1981).

TABLE V-50
ACCESS TO ELECTRICITY IN EGYPT AND OTHER MIDDLE EASTERN COUNTRIES (1977)

Country	Percent of Population with Access to Electricity			Annual Per Capita Consumption (KWh)
	Rural	Urban	Total	
Algeria	33	100	60	272
Egypt	19	62	38	380
Jordan	23	71	43	292
Morocco	6	60	28	216
Syria	20	80	61	281
Tunisia	10	78	44	289
Turkey	45	95	72	502

SOURCE: Unpublished Statistics of the World Bank (1981).

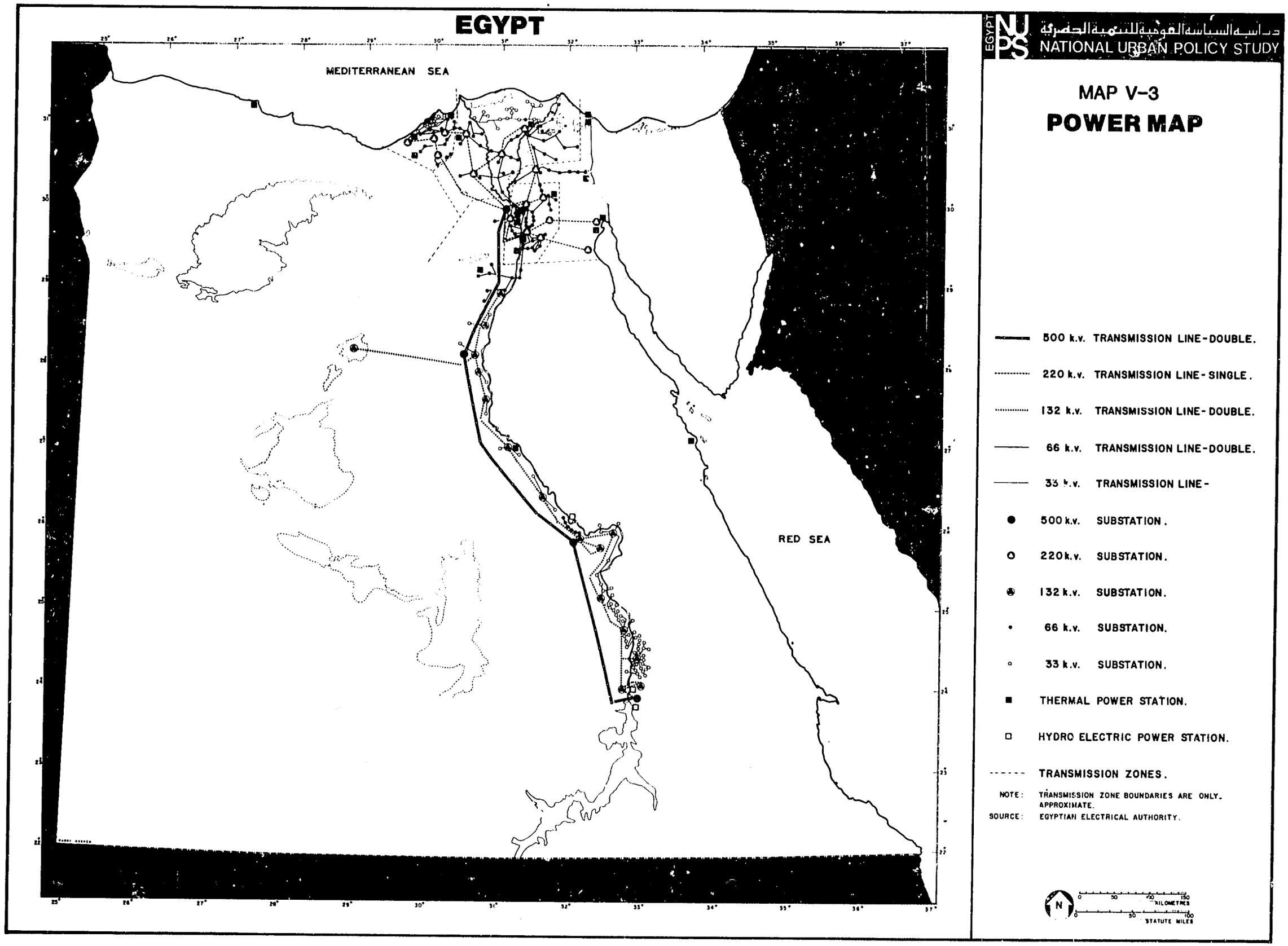
EGYPT
MEDITERRANEAN SEA
RED SEA
EGYPT
NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY
MAP V-3
POWER MAP
500 k.v. TRANSMISSION LINE-DOUBLE.
220 k.v. TRANSMISSION LINE-SINGLE.
132 k.v. TRANSMISSION LINE-DOUBLE.
66 k.v. TRANSMISSION LINE-DOUBLE.
33 k.v. TRANSMISSION LINE-
500 k.v. SUBSTATION.
220 k.v. SUBSTATION.
132 k.v. SUBSTATION.
66 k.v. SUBSTATION.
33 k.v. SUBSTATION.
THERMAL POWER STATION.
HYDRO ELECTRIC POWER STATION.
TRANSMISSION ZONES.
NOTE: TRANSMISSION ZONE BOUNDARIES ARE ONLY APPROXIMATE.
SOURCE: EGYPTIAN ELECTRICAL AUTHORITY.
N
KILOMETRES
STATUTE MILES

TABLE V-51
ELECTRICAL POWER -- DISTRIBUTION COMPANIES -- 1979

Distribution Companies	Main Power Sources	Distribution of Electrical Energy and Gas K.V.	Governorates Within Service Areas	Energy Sold And Value	Sold Gas and Value	No. of Consumers	No. of Energy Meters	Value of New Installations
Cairo Electricity Distribution Company	High Dam West Cairo - South Cairo North Cairo - East Cairo El Tebin Thermal - El Tebin Gaz Shoubra El Khema	66,11,0.4 KV	Cairo, Giza & southern part of Qalyubia Government	4.414 GWh L.E. 54.2 million	4.9 million cubic meters of town gas L.E. 89 thousand	1.577 million	142,000	L.E. 18 million
Beheria Electricity Distribution Company	Damanhaur Kafr El Dawar	11,0.4 KV	Beheira & Marsa Matrouh	386.3 GWh L.E. 4.58 million	--	--	17,000	--
Canal Electricity Distribution Company	Suez Thermal Suez Gaz Ismailia (Cairo Transmission Zone)	11,0.4 KV	Port Said, Ismailia, Suez, Sharkia, Northern Sinai, Southern Sinai & Red Sea	556.2 GWh L.E. 6.8 million	--	--	44,500	--
Alexandria Electricity Distribution Company	El Seouif -- Karmouz El Masc Gaz -- Ahan El Matamir High Dam	66,11,0.4 KV	Alexandria	7.136 GWh L.E. 14.5 million	--	501,000	37,300	--
Northern Upper Egypt Electricity Distribution Company	Assiut (Upper Egypt Transmission Zone)	11,0.4 KV	Beni Suef, Minia Fayoum, Asycent & New Valley	509 GWh L.E. 6.96 million	--	--	81,700	--
South Upper Egypt Electricity Distribution Company	Naga Hamadi Aswan Dam High Dam	11,0.4 KV	Sohag, Qena & Aswan	490.16 GWh L.E. 6.55 million	--	--	73,700	--
Delta Electricity Distribution Company	Talkha Thermal Talkha Gaz High Dam (Canal Transmission Zone)	11,0.4 KV	Gharbia, DaKahlia, Damietta, Kah El Sheikh, northern part of Qalaobia, and Manufia	1.37 GWh L.E. 18.1 million	--	--	251,800	--

SOURCE: Annual Report: Electricity Statistics. Egyptian Electricity Authority (1981).

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ii) The Qattara Hydro Power and Renewable Energy Resources Project Authority (QPA), responsible for construction of hydro projects in conjunction with the Ministry of Irrigation.

iii) The Rural Electrification Authority (REA), responsible for construction of the subdistribution networks (voltages less than 33 KV) in rural and urban areas.

iv) The Nuclear Power Plants Authority (NPPA), responsible for planning and construction of nuclear power plants.

Once constructed, the distribution networks having voltages less than 33 KV and other medium and low voltage power facilities in urban and rural areas are turned over to seven publicly-owned power distribution companies established in 1979 for final distribution of electrical power. These distribution companies purchase their power requirements from the EEA as do large industrial consumers with high voltage requirements. The seven distribution companies, their major sources of power and data about their service areas are shown in Table V-51.*

5. Regional Distribution of Electrical Power

The development of major power sources located away from regional power loads necessitated the development of the Unified Power Grid so that surplus electrical power could be transmitted from one zone to another on a temporary basis to meet unusually high demands for power in one zone by reducing the power supplied to other zones. This inter-regional transfer of power and end consumption of electrical power in 1979 is shown in Table V-52 by EEA transmission zone and by electrical distribution companies.* As the table shows, the largest producers of power (i.e. the Upper Egypt and Cairo Zones) are also the largest users of electrical power. However, only the Upper Egypt Zone is a net "exporter" of electrical power, as all other zones rely on either the hydroelectric power from the Upper Egypt Zone or thermal power from other zones to meet their end consumption requirements.

Roughly 41 percent of the total power generated in 1979 was available for transmission to other zones for end consumption. The remaining 59 percent was consumed in the zone where it was produced. Furthermore, as the table indicates, about 4,799 GWh or 71 percent of the

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* The service areas of the seven distribution companies differ from the five transmission zones in that the transmission zones relate to the location of major power facilities, while the service areas of the distribution companies follow governorate boundaries.

* The total shown in the table varies from total power generated shown in Table V-49 because the thermal generating power stations which are not connected to the Unified Power Grid are not included.

TABLE V-52
REGIONAL GENERATION OF THERMAL AND HYDRO POWER
BY TRANSMISSION ZONE AND DISTRIBUTION COMPANY -- 1979

Transmission Zone	Electrical Distribution Company	Generator Station	Type of Generation Plant	Power Generated (GWh)	Total Power Generated in Zone	Power Distributed to Other Zones: Zone	Power Distributed to Other Zones: (GWh)	Power Received from Other Zones: Zone	Power Received from Other Zones: (GWh)	Total End Consumption in Zone (GWh)	Percent of End Consumption Which is Hydro Power
Cairo	Cairo	West Cairo	Thermal	1,314.6							
		South Cairo	"	1,201.1							
		North Cairo	"	529.0							
		East Cairo	"	59.4							
		El Tebin I	"	208.5							
		El Tebin	"	73.0				Upper Egypt	2,993.2		
		Shoubra el Kheima 4/	"	--	3,385.6		(881.6)	Lower Egypt	174.5	5,617.7	52.8
Alexandria	Alexandria	El Siouf	"	325.0							
		Karmouz	"	197.1							
		El Maz	"	91.3							
		Abou el Matomir	"	28.7				High Dam	820.0		
		Kafr el Dawar	"	55.8	697.9	--	--	Lower Egypt	425.5	1,943.3	42.2
Lower Egypt 1/	Beheira Delta	Damanhour	"	1,083.7							
		Talkha Thermal	"	728.4			(425.5)	Upper Egypt	985.9		
		Talkha Gaz	"	21.6	1,833.7	Cairo	(174.5)	Canal	445.7	2,665.3	37.0
Canal 2/	Canal	Suez Thermal	"	357.1							
		Suez Gas	"	32.2							
		Ismailia	"	77.1	466.4	Lower Egypt	(445.7)	Cairo	881.6	902.3	--
Upper Egypt 3/	Northern Upper Egypt	Assiut	"	367.2	367.2						
	Southern Upper Egypt	Naga Hamdi	Hydro	--							
		Aswan Dam	"	1,639.0		Cairo	(2,993.2)				
		High Dam	"	7,969.3	9,608.3	Alexandria	(820.0)				
						Lower Egypt	(985.9)			5,176.4 5/	92.9
TOTAL					16,359.1		(6,726.4)		6,526.4	16,359.1	58.7

1/ Power stations in Mersa Matruh not connected to the Grid are excluded.
2/ Power stations in Port Said, the Sinai and Red Sea not connected to the Grid are excluded.
3/ Power stations in Fayoum and the Western Desert are not included.
4/ Shoubra el Kheima power station will not be commissioned until 1982.
5/ This total consumption includes major industrial consumers who purchase power directly from the EEA in addition to the distribution companies.

SOURCE: Annual Report: Electricity Statistics. Egyptian Electrical Authority. (1981).

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power available for transmission to other zones was derived from hydroelectric power plants.

Among the governorates there is a considerable variation in per capita consumption of electrical power as is illustrated in Table V-53. The highest consumer of electrical power in 1978, the latest year for which governorate disaggregated data is available, was Suez (having a consumption of 1,113.5 Wh/capita) while the lowest were the remote area governorates of the New Valley and the Red Sea. When major industrial consumers (i.e. the Naga Hamadi Aluminum Factory and the Kima Fertilizer Factory) are included in governorate consumption figures as the table shows, Qena and Aswan also have very high consumption rates. However, as these are single consumers, their large consumption in comparison to the rest of their governorates distorts per capita consumption. For example, Qena's consumption drops from 4,827 to 562 kWh/capita while Aswan's consumption drops from 7,156 to 1,018 kWh/capita. There is also considerable variation in power consumption among governorates within transmission zones. For example, in the Lower Egypt Zone, Damietta has a consumption of 1,099 kWh/capita while Gharbia, which has a higher population and more industrialization, has a consumption of only 483 kWh/capita. Similarly in the Canal Transmission Zone, Suez, which is a major source of power generation, had a consumption of 1,114 kWh/capita, while Ismailia had only 354 kWh/capita. Port Said, which is not connected to the Unified Power Grid, had a consumption of 208 kWh/capita, which is lower than either of the other two canal cities and is largely due to its relative isolation and its lack of land area for power generation facilities.

TABLE V-53
END CONSUMPTION OF ELECTRICAL POWER, BY GOVERNORATE -- 1978

Governorate	Quantity Consumed GWh 1/	1978 Population (000's) 2/	Consumption Per Capita (KWh)
Cairo	2,409.2	5,355.0	464.9
Alexandria	1,440.1	2,445.1	588.9
Port Said	62.7	301.2	208.2
Ismailia	70.6	199.4	354.0
Suez	205.1	224.6	1,113.5
Giza	1,134.9	1,599.8	709.4
Kafr El Sheikh	141.0	313.3	450.1
Gharbia	392.6	811.4	483.9
Menoufia	193.0	363.5	531.0
Damietta	145.0	132.0	1,098.8
Dakahlia	621.3	704.7	881.7
Sharkia	273.6	570.4	479.7
Qalyubia	557.3	776.8	608.3
Beheria	436.6	718.0	608.3
Beni Suef	63.6	289.1	220.0
Fayoum	95.7	295.5	323.8
Sohag	117.9	423.3	278.5
Qena	2,073.2	429.5	4,826.5 3/
Aswan	1,829.5	255.7	7,155.9 4/
New Valley	4.1	36.0	113.9
Red Sea	9.3	51.8	179.5
Sinai	3.2	N.A.	N.A.
Matruh	N.A.	N.A.	N.A.
Minia	N.A.	N.A.	N.A.
Assiut	177.8	499.6	355.9

1/ SOURCE: "Annual Report: Electricity Statistics." Egyptian Electricity Authority (1981).

2/ SOURCE: "Urban Growth and Urban Data Report. Volume III." Governorate Profiles.

3/ This consumption includes the Naga Hamadi Aluminum Plant electricity consumption. When this consumption is subtracted from the total governorate consumption, the net per capita consumption is 562.0 KWh/capita.

4/ Total governorate consumption includes Kima Fertilizer Factory consumption. When this is subtracted from governorate consumption, Aswan's net per capita consumption is 1,018.4 KWh/capita.

6. Electrical Power Sector Financing

Unlike other infrastructure, the electrical power sector is largely self-financing in that the bulk of its financial requirements for both

TABLE V-54
ELECTRICAL POWER DISTRIBUTION IN 1979 BY EEA

Consumer	Total Power Consumed (GWh)	Power Consumed as a Proportion of Total Power Distributed (%)	Total EEA Revenues from Power Sales (Thousands LE)	Power Sales as a Proportion EEA Revenues (%)	Price Paid Per Kilowatt Hour (Milliemes)
I. Power Distribution Companies					
Cairo	4,981.7	34.2	44,835	41.6	9.00
Delta	1,479.8	10.2	13,319	12.4	9.00
Alexandria	1,407.0	9.7	12,661	11.8	8.99
Canal	668.9	4.6	2,020	1.9	3.02
South Upper Egypt	645.0	4.4	5,805	5.4	9.00
North Upper Egypt	541.7	3.7	4,875	4.5	8.99
Beheira	466.3	3.2	4,197	3.9	9.00
Subtotal	10,190.4	70.0	91,712	85.2	9.00*
II. Large Industrial Consumers					
Aluminum Plant	1,831.8	12.6	4,735	4.4	2.58
Somid Fertilizer Plant	280.6	1.9	1,475	1.4	5.26
Kima Fertilizer Plant	1,534.3	10.5	5,147	4.8	3.35
Talkha Fertilizer Plant	233.1	1.6	1,508	1.4	6.47
Bulk Irrigation	213.1	1.5	1,479	1.4	6.94
Others	265.7	1.8	1,614	1.5	6.07
Subtotal	4,358.6	30.0	15,958	14.8	3.66*
III. TOTAL CONSUMPTION	14,549.0	100.0	107.670	100.0	7.40*

*Weighted average of "Price Paid Per Kilowatt Hour (Milliemes)".

SOURCE: Egyptian Electrical Authority Statistical Yearbook: February 1981.

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current and capital costs are largely met by revenues generated through the sale of electrical power. Nevertheless, subsidies exist in the overall structure of the sector as the government subsidizes petroleum products which are major inputs for generation of electrical power. However, with the exception of subsidies extended to a few large industrial consumers, the sector's subsidies are economic and result from the very low prices which are charged for domestic consumption of petroleum in comparison to the international prices for those products. For example, the EEA pays roughly L.E. 7.50 per ton for fuel with which it generates thermal power, but the international price for fuel oil is roughly L.E. 120 per ton (1980 prices). This subsidy is then passed on to electrical power consumers in the form of reduced tariffs.

As mentioned, financing of the sector's development programs is largely accomplished through long-term loans to sector entities from the treasury and/or international lenders. Debt servicing for these loans is generally paid through provisions made in the current budgets of the sector's operational agencies (EEA and the distribution companies). However, since the EEA is required to provide power to large industrial users at subsidized prices, these subsidies are met through grants from the treasury. Thus, due to Law 60/1971, none of the public entities like EEA are able to directly finance their development programs through their own funds. All profits from their operations must be turned over to the central treasury at the end of the financial year.

The other non-operation entities in the sector (EEA and others) which are charged with developing power facilities generally finance their development programs through domestic and international loans. Once the facilities which they have planned and constructed are complete, they are turned over to either the EEA or distribution companies for operations, who in turn assume the debt servicing requirements for those facilities.

TABLE V-55
FINANCIAL OPERATIONS OF THE SEVEN ELECTRICAL POWER DISTRIBUTION COMPANIES
(1980/81 BUDGET YEAR)

Item	Electrical Power Distribution Companies (L.E. 1,000.00)						
	Greater Cairo	Alexandria	Northern Upper Egypt	Southern Upper Egypt	Canal	Delta	Beheira
Service Area Population (000's)	7,721.8	2,613.0	6,934.0	4,803.0	4,440.0	11,356.3	2,966.0
Current Revenues 1/	75,370	22,720	9,340	9,110	12,900	22,950	9,000
Current Expenses 1/ (BAB 1 & 2)	75,370	22,720	8,400	8,750	12,900	22,950	9,000
(Depreciation) 1/	2,771	1,200	300	200	300	320	110
Current Income	--	--	940	360	--	--	--
Deficit from EEA 2/	5,845	1,978	5,249	3,636	3,631	8,597	2,245
Net Operating Income	(5,845)	(1,978)	(4,309)	(3,276)	(3,361)	(8,597)	(2,245)
Debt Service 3/	1,240	247	137	68.5	342 5	68.5	68.5
Net Income	(7,085)	(2,225)	(6,326)	(4,064.5)	(3,703.5)	(8,665.5)	(2,313.5)
Investment 4/	18,100	4,000	2,000	1,000	5,000	1,000	1,000
Per Capita Financing of Electrical Power Distribution Companies: 5/							
Current Revenues	9.76	8.69	1.35	1.90	2.91	2.02	3.03
Current Expenses	9.76	8.69	1.21	1.82	2.91	2.02	3.03
(Depreciation)	(0.359)	0.459	0.043	0.042	0.067	0.028	0.037
Current Income	--	--	0.14	0.08	--	--	--
Net Operating Income	(0.757)	(0.757)	(0.62)	(0.68)	(0.757)	(0.757)	(0.757)
Debt Service	(0.16)	(0.094)	(0.019)	(0.014)	(0.077)	(0.006)	(0.023)
Net Income	(0.917)	(0.852)	(0.639)	(0.82)	(0.834)	(0.763)	(0.780)
Percent Increase in Revenue Required to Finance Deficits	10.2%	11.5%	74.1%	52.6%	34.4%	49.5%	33.0%

1/ SOURCE: 1980/81 Budgets of Distribution Companies.

2/ SOURCE: 1980/81 Budget of EEA. This deficit is distributed among the seven distribution companies on a per capita basis.

3/ These are the indicative debt servicing requirements if the investment figures shown below are ammortized at six percent over 30 years.

4/ SOURCE: 1980/81 Budget of Distribution Companies.

5/ SOURCE: NUPS analysis.

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7. Operations of EEA and Distribution Companies

The EEA is responsible for generation, transmission and sale of bulk electrical power. Thus, it manages overall power distribution under, of course, the jurisdiction of the Ministry of Electricity, and is responsible for long-term development of power facilities. EEA's primary customers are the seven power distribution companies and several large industrial firms shown in Table V-54.

In addition to the sector's economic subsidies already discussed, the sector's two largest industrial consumers, the Kima Fertilizer Factory in Aswan and the Naga Hamadi Aluminum Factory, which consumed about 23 percent of EEA's 1979 total sales, enjoy financial subsidies through tariff agreements in which they receive power from the EEA at prices which are 55 and 66 percent of EEA's cost of supply (1979 prices). These subsidies are the result of agreements between the two industrial concerns and the EEA which date from the 1960's when there was a surplus of hydroelectric power. However, even though there is no longer a surplus of hydroelectric power and the structure of power generation and transmission costs has been changed, these agreements have not been changed.

The degree to which the sector is self-financing is illustrated by the analysis of the 1980-1981 budgets of the seven distribution companies shown in Table V-55. For the purposes of this analysis, the 1980-1981 budget year was chosen because the distribution companies were only established in 1979 and the budget year was changed in 1980. Furthermore, this period reflects the changes in electrical tariffs which occurred at the beginning of 1980.

As the table illustrates, all of the seven distribution companies have projected revenues from sales of electrical power which are adequate to meet their current expenses. (Salaries, operations and equipment). Two of the distribution companies project small surpluses in their current income (current expenses subtracted from current revenues). However, if the sector's financial deficit resulting from EEA's sales of power to major industrial consumers at subsidized prices were distributed on a consumption basis over all other consumers, along with debt servicing requirements which are also not shown in the budget, total revenues from small and medium consumers would have to increase between 12 and 74 percent. Although these subsidies are not passed directly on to these small consumers, even the new rate structures implemented in 1980 still charge small consumers a much higher rate per kilowatt hour than large consumers (base tariffs for minimum consumption of 80 kWh of 15 milliemes/kWh as opposed to those charged to the Kima fertilizer plant and aluminum complex of 3.33 and 2.58 milliemes/kWh).

8. Tariff Structure for Medium and Low Voltage Consumers

The new tariff structure for domestic and small consumers which was introduced in early 1980 is aimed at increasing revenues of the sector to meet increased operating costs and to provide a more equitable distribution of costs among different types of users (particularly low income groups). The structure has an increasing block rate which charges higher tariffs for higher consumption. However, it provides subsidized rates for low income consumers requiring a basic amount of electricity for lighting, about 80 kWh/month. This subsidy is recovered from larger domestic and small commercial customers. This new tariff structure is shown in Table V-56.

TABLE V-56
NEW TARIFF STRUCTURE
FOR DOMESTIC AND SMALL CONSUMERS

Estimated Consumption Per Month	Old Tariff (16.5 milliemes/KWh for the first 45 KWh and then 10 milliemes/KWh).	New Tariff (15 milliemes for the first 80 KWh; 20 milliemes for the next 70 KWh; 25 milliemes thereafter).
80 KWh	L.E. 1.06	L.E. 1.20
100 KWh	L.E. 1.26	L.E. 1.60
200 KWh	L.E. 2.26	L.E. 3.65
300 KWh	L.E. 3.23	L.E. 6.35

At the same time that the new tariff structure was introduced for small consumers, the government began to charge international prices for bulk sales of petroleum products to firms with equity in foreign currency. Therefore, EEA also began to charge the same firms tariffs which reflect those increased petroleum prices. Nevertheless, the subsidies for EEA's two largest industrial consumers remain.

9. Regional Variations in the Cost of Electrical Power Generation

There are significant variations in the costs of supplying electrical power to different transmission zones due to the difference in the composition of the zones sources of power supply. These variations in terms of financial costs can vary as much as 56 percent from the Upper Egypt Transmission Zone whose power source is largely hydroelectric to the Canal Zone which relies entirely on the thermal generation of electrical power. The difference in economic costs (defined as the difference between the international price for petroleum products and the price which EEA pays) are even more dramatic. If the full economic costs of power generation were charged, a kilowatt hour of electrical power would cost roughly 46 milliemes in the Canal Transmission Zone as compared to roughly 7 milliemes in the Upper Egypt Transmission Zone. These variations in financial and economic costs of power generation for 1979 are shown in Tables V-57 and 58.

The additional costs of thermal generation of power shown in Table V-57 were calculated by multiplying the EEA 1979 fuel requirements for its thermal generating plants times L.E. 7.50 per ton of fuel (the average financial cost EEA paid for fuel) or L.E. 122 per ton of fuel (the average 1979 international price for fuel) and adding those costs to the costs of generating hydroelectric power. The regional variations in the costs resulted from the composition of the end supply of electrical power consumed in a transmission zone. Thus, the Canal Zone which relies entirely on thermal power, has higher costs than the other zones which derive portions of their power supply from less costly hydroelectric sources.

Since Egypt's hydroelectric potential is largely tapped, these regional variations in costs are likely to become even more significant since future power generation will increasingly be reliant on thermal and nuclear plants.

10. Future Electrical Power Requirements

Since Egypt's hydroelectric potential has been largely tapped and only small increases in hydroelectric power production are possible, Egypt's future electrical power needs will have to be met through thermal plants fired by petroleum products (as is currently the case), coal fired plants and, as a longer term option, nuclear plants. In addition, the introduction of small-scale solar power plants may also become increasingly feasible as the technology develops. In the latter case, Egypt has a vast solar energy potential averaging about 5.73 kWh/day/square meter. This potential makes installation of solar energy pumps, heating and cooling plants and other solar applications feasible, particularly as the technology develops and the relative prices of installing solar facilities decrease. While the technology may not be well enough developed for large scale applications, it could be used to reduce the demands on the national unified grid by the small user.

There have been several proposals for developing nuclear power in Egypt. Although uranium and thorium occur in several places in Egypt, the quantities of their supply are unknown, and their extraction is presently uneconomical.

The Qattara Depression Project may also increase Egypt's hydroelectric power supplies. Very preliminary projections of the project's hydroelectric potential indicate that it could ultimately have a capacity of 2,400 MW during its last stage of development, sometime after 2000. However, initial estimates of first stage feasibility indicate that development costs may be much greater than those of other types of power facilities. Thus, the EEA has not included the project's capacity in its projections.

Although all of Egypt's thermal power is generated from plants using petroleum fuels and natural gas, coal could also be used to generate power. The most promising coal deposits have been found at Maghara in the Sinai, although discoveries have been made west of the Gulf of Suez.[10] If the Maghara deposit were developed, it could yield enough coal of sufficient quality to fuel a 600 MW plant for about 20 years.

As mentioned, Egypt's hydroelectric potential has largely been tapped with the construction of the High Dam at Aswan (9,000 GWh/a). A remaining 3,000 GWh/a could be tapped along the Nile consisting of an additional 1,100 GWh/a at Aswan (under construction) and 1,900 GWh/a could be developed through installing smaller generating plants at Naga Hammadi, Esna and Assiut.[11] Several canals along the Nile Valley also have the potential for installation of small hydroelectric plants aimed at generating power for irrigation.

As indicated above, the development of new electrical power generation capacity over the near term is likely to rely on petroleum fueled thermal plants. In 1978, Egypt's proven recoverable oil resources were roughly 300 million tons.[12] By 1979, oil production had achieved 25 million tons and the government projects production levels of 35 million tons by 1982 and 47 million tons by 1983. The latter is a production level it hopes to maintain. In 1979, a

TABLE V-57
REGIONAL ANALYSIS VARIATIONS IN FINANCIAL AND ECONOMIC COSTS OF ELECTRICAL POWER GENERATION -- 1979

Transmission Zone	End Power Consumption (GWh)			Costs of Power Generation (LE Millions)						Average Costs (Milliemes)	
				Hydro		Thermal		Total			
	Hydro	Thermal	Total	Financial	Economic	Financial	Economic	Financial	Economic	Financial	Economic
Cairo	2,993.2	2,678.5	5,671.7	12.0	12.0	17.6	121.0	29.6	133.0	5.22	24.49
Alexandria	820.0	1,123.4	1,943.4	3.3	3.3	7.4	51.1	10.7	54.4	5.50	28.01
Lower Egypt	985.9	1,679.4	2,665.3	4.0	4.0	11.0	76.5	15.0	80.5	5.63	30.20
Canal	--	902.3	902.3	--	--	5.9	41.1	5.9	41.1	6.54	45.55
Upper Egypt	4,809.2	367.2	5,176.4	19.3	19.3	2.4	16.7	21.7	36.0	4.19	6.95
TOTAL	9,608.3	6,750.8	16,359.1	38.6	38.6	44.3	306.4	82.9	345.0	5.07	21.15

SOURCE: Fuel consumption from Annual Report: Electricity Statistics, Egyptian Electrical Authority (1981). Other cost data from unpublished data of the World Bank and NUPS analysis.

TABLE V-58
ANALYSIS OF REGIONAL VARIATION IN FINANCIAL AND ECONOMIC COSTS OF POWER GENERATION 1979

Transmission Zone	Per Capita Consumption of Power (KWh/Capita)	Average Costs Per Capita	
		Financial (LE/Capita)	Economic (LE/Capita)
Cairo	734.5	3.83	17.99
Alexandria	743.7	4.09	20.84
Lower Egypt	186.1	1.05	5.62
Canal	220.3	1.44	10.03
Upper Egypt	441.3	1.85	3.06
TOTALS	400.6	2.03	8.47

SOURCE: NUPS analysis.

review of Egypt's oil and gas potential sponsored by the U.S. Department of Energy indicated that Egypt's known reserves could be increased through an intensive program of exploration and drilling.[13]

11. Power Development Program

Projections of Egypt's total energy demand were made by a joint team of Egyptian and American energy experts in 1979.[14] In preparing these projections, the study made the following observations:

i) Energy demand for commercial energy over the 20-year planning period is likely to have a growth rate of 6 percent per year. (See Figure V-2 and Table V-59)

ii) The projected growth in demand for electrical energy at 9.9 percent per annum is likely to be greater than overall energy demand.

TABLE V-59
GROWTH RATES AND RATIOS OF PROJECTED ENERGY USE IN EGYPT

Variable		1975-2000	1975-1985	1985-2000
		Growth Rates Per Annum (%)		
Growth in Availability of Energy Resource	1	5.917	12.021	2.033
Total End Use	2	4.663	4.830	4.552
Growth in Commercial Energy Use	3	5.973	6.677	5.506
Growth in Commercial Fuel Resources Consumed	4	6.645	7.444	6.116
Growth in Noncommercial Resources	5	1.357	1.377	1.344
Growth in Electric End Use	6	9.908	12.742	8.058
Growth in Commercial Fuels End Use	7	5.314	5.887	4.934
Inputs to Electric Energy Production	8	9.001	11.093	7.628
Inputs to Direct Commercial Fuels	9	5.524	7.251	4.388
Total Energy Inputs-Commercial/Noncommercial	10	4.286	5.228	3.663
		Per Capita Growth Rates (%)		
Growth in Availability of Energy Resource	1	3.644	9.474	0.001
Total End Use	2	2.417	2.446	2.398
Growth in Commercial Energy Use	3	3.699	4.251	3.332
Growth in Resources Consumed	4	4.357	5.001	3.930
Growth in Noncommercial Resources	5	-.818	-.928	-.744
Growth in Electric End Use	6	7.549	10.718	5.832
Growth in Commercial Fuels End Use	7	3.054	3.479	2.772
Inputs to Electric Energy Production	8	6.662	8.567	5.411
Inputs to Direct Commercial Fuels	9	3.259	4.812	2.237
Total Energy Inputs-Commercial/Noncommercial	10	2.048	2.835	1.527
		Ratios		
		1975	1985	2000
Electric/Total End Use	1	.053	.110	.181
Electric/Commercial End Use	2	.088	.154	.220
Fuels End Use/Total End Use	3	.549	.607	.641
Fuels End Use/Commercial End Use	4	.912	.846	.780
Inputs to Electricity/Inputs to Direct Commercial Fuels	5	.397	.564	.892
Direct/Electric	6	10.308	5.505	3.545

The above calculations are based on the following population estimates (in millions):

Population	1975	1985	2000
	38	48	65

SOURCE: Joint Egypt/United States Report on Egypt/United States Cooperation Energy Assessment. Volume 1. Executive Summary, Main Report and Appendices. U.S. Department of Energy. April 1979. P.42.

iii) Consumption of energy for industrial and service sectors is projected to increase from 37 percent of total energy consumption in 1975 to 53 percent by 2000. Since energy costs are projected to increase at rates higher than other economic costs, future expansion of the industrial and service sectors should be cognizant of their energy implications and likely energy resources.

iv) Future demands of commercial energy will largely be met through using conventional fuels and existing technologies. However, since the hydroelectric potential is largely exploited and is projected to reduce to 17 percent of total commercial energy demands by 2000, much greater demands will be placed on other energy sources (i.e., coal, oil, natural gas, and possibly nuclear energy).

The study concluded that if petroleum production reaches targets of one million barrels per day (roughly 53 million tons per annum), projected electrical energy requirements to the year 2000 could be met without nuclear power. However, beyond 2000, without significant increases in oil and gas production, increased technological efficiencies, and/or improved conservation efforts, a rapid expansion of nuclear energy may be necessary.

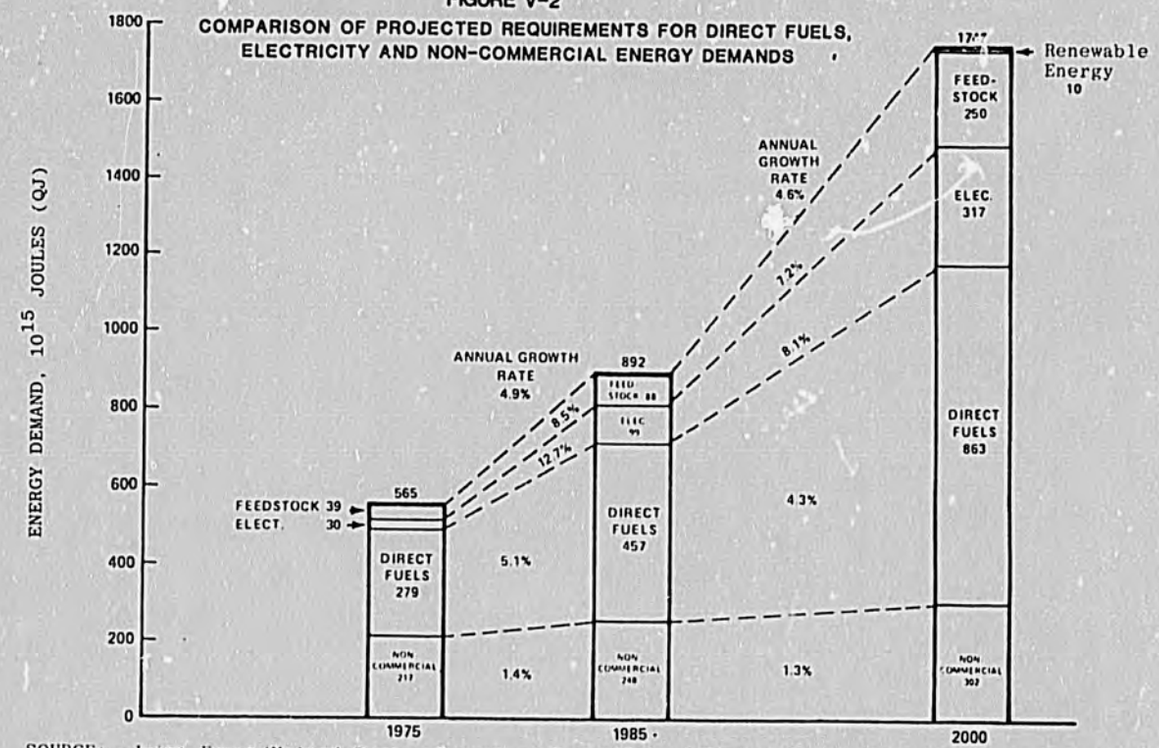
The study indicated that the projected rate of consumption of electrical energy in comparison to total energy consumption would account for 20 percent of total energy consumption by 2000. If the current projected growth in demand for electrical energy at 9.9 percent per annum quoted earlier were achieved, this ratio of consumption of electrical energy to total energy consumption is about twice the current ratio of industrialized nations such as France and the United States. It is also considerably higher than most other countries which are at a similar stage of development. (Figure V-3)

12. Electrical Power Development Program

The EEA, under the policy guidance of the Ministry of Energy and Electricity, has developed electrical power forecasts which project increas-

FIGURE V-2

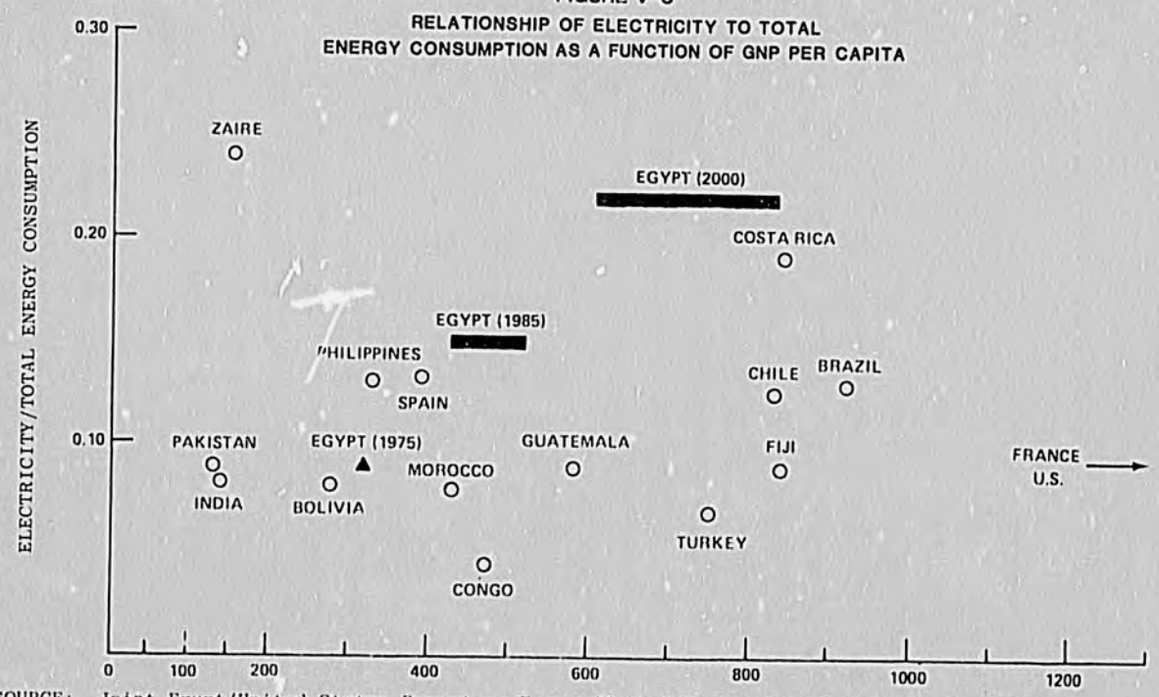
COMPARISON OF PROJECTED REQUIREMENTS FOR DIRECT FUELS, ELECTRICITY AND NON-COMMERCIAL ENERGY DEMANDS



SOURCE: Joint Egypt/United States Report on Egypt/United States Cooperation Energy Assessment. Volume 1. Executive Summary, Main Report and Appendices. U.S. Department of Energy. April 1979. P. 13.

FIGURE V-3

RELATIONSHIP OF ELECTRICITY TO TOTAL ENERGY CONSUMPTION AS A FUNCTION OF GNP PER CAPITA



SOURCE: Joint Egypt/United States Report on Energy/United States Energy Assessment, Volume 1. Executive Summary, Main Report and Appendices. U.S. Department of Energy. April 1979.

es in net generation from 445.2 kWh/capita in 1980 to 1,555 kWh/capita in 2000. These projections require development of electrical power generation facilities with a maximum capacity of 18,518 MW by the year 2000, an increase over 1980 maximum capacities of 5.7 times. These projections have been based on usage of the Wien Automatic System Planning (WASP) model which is designed to select the mix of new power plants which minimize the sum of the present value of the capital cost of all new plants and the operating costs of the entire power system. Both costs are expressed in terms of their opportunity cost to the economy. Two such forecasts are shown in Tables V-60 and 61. The first projects future power require-ments by consumer group, while the second illustrates how these projections are interpreted into construction requirements for adding new capacity to the system.

The forecasts shown in the two tables are revised periodically to reflect updated planning information. However, they generally assume real GDP growth in the medium to high range (6.5 to 7.5 percent). They also assume a ratio of commercial energy consumption and economic growth using income elasticities of energy demand in the range of 1.0 to 1.3, the upper end of the range having been experienced in Egypt between 1970 and 1975.[15]

The EEA immediate and long-term development program envisions adding roughly 530 MW per year of peak load capacity between 1980 and 1987 and roughly 900 MW per annum of capacity between 1988 and 2000. These forecasts indicate the following rates of increase in sales of electrical power by consumer group.

A summary of EEA's investment program between 1980 and 1987 is shown in Table V-62. This program envisions spending L.E. 4,656 million over the period to increase the total system capacity from 3,404 MW in 1979 to 8,128 MW by 1987. It averages a total unit cost of roughly L.E. 986 thousand per additional megawatt of system capacity. Roughly 69 percent of the program is aimed at increasing capacity to relieve current system deficits and at peak loading provide a reserve capacity of 17 percent.

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TABLE V-60

ACTUAL AND FORECAST SALES OF ELECTRICAL POWER BY CONSUMER CATEGORIES, 1978-2000

	Actual (GWh)					Forecast (GWh)									
	1974	1975	1976	1977	Yearly Growth Rate 73-77 (%)	1978	1979	1980	1981	1982	1983	1984	1985	1966	1987
Industrial -- General	2,161	2,331	2,301	2,991	10.8	3,272	3,611	3,936	4,332	4,727	5,208	5,747	6,249	6,712	7,221
Industrial -- Large Consumer	1,646	2,491	3,331	4,170	29.2	4,796	5,947	6,662	7,629	8,832	10,298	11,697	12,794	13,803	14,946
Total Industrial	3,807	4,822	5,632	7,161	20.2	8,068	9,558	10,598	11,961	13,559	15,506	17,444	19,043	20,515	22,167
% Total Sales	55.0	59.2	60.3	62.7		64.0	65.1	65.8	65.7	65.4	65.0	64.6	64.0	63.3	62.7
Residential/Commerical 1/	1,681	1,976	2,305	2,796	16.0	3,051	3,937	3,900	4,551	5,328	6,322	7,399	8,391	9,463	10,641
% Total Sales	24.0	23.6	24.7	24.4		24.2	26.1	24.2	25.0	25.7	26.5	27.4	28.2	29.2	30.1
Irrigation/Agriculture	686	606	620	660	0.4	699	700	700	710	767	835	891	952	1,005	1,025
% Total Sales	9.9	8.6	6.6	5.8		5.3	4.7	4.3	3.9	3.7	3.5	3.3	3.2	3.1	2.9
General Purposes 2/	504	586	542	534	2.1	529	558	564	601	643	692	729	774	776	778
% Total Sales	7.3	7.1	5.8	4.7		4.2	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.4	2.3
Government Buildings	231	244	238	278	6.8	290	322	355	382	435	501	540	595	648	708
% Total Sales	3.4	2.9	2.6	2.4		2.3	2.2	2.2	2.1	2.1	2.1	2.0	2.0	2.0	2.0
Total Sales	6,909	8,294	9,337	11,429	16.2	12,607	14,675	16,117	18,205	20,732	23,856	27,003	29,755	32,407	35,354
Losses 3/	1,219	982	1,749	1,261		2,405	2,133	2,624	2,841	3,098	3,408	3,682	4,057	4,424	4,821
Required Net Generation	8,128	9,276	11,086	12,690	15.6	15,012	16,808	18,741	21,046	23,830	27,264	30,685	33,812	36,831	40,175
Losses, %	15.0	10.6	15.8	9.9		16.0	12.7	14.0	13.5	13.0	12.5	12.0	12.0	12.0	12.0
Load Factor, %	69.9	62.6	68.9	64.7		67.1	68.2	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
Maximum Demand, MW	1,328	1,691	1,837	2,238	16.2	2,555	2,814	3,237	3,635	4,116	4,709	5,300	5,840	6,365	6,939

	Forecast (GWh)												
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Industrial -- General	7,763	8,351	8,972	9,605	10,271	10,995	11,763	12,588	13,470	14,408	15,413	16,498	17,668
Industrial -- Large Consumer	16,088	17,354	18,100	19,534	21,149	22,924	14,835	26,596	28,386	30,228	32,266	34,245	36,746
Total Industrial	23,851	25,705	27,072	29,139	31,420	33,919	36,598	39,184	41,856	44,636	47,679	50,843	54,414
% Total Sales	61.9	61.2	60.4	60.2	60.1	59.9	59.7	59.5	59.4	59.2	59.1	58.9	58.9
Residential/Commercial 1/	11,945	13,440	14,791	16,119	17,513	18,983	20,538	22,654	24,451	26,389	28,389	30,558	32,698
% Total Sales	31.0	32.0	33.0	33.3	33.5	33.8	34.2	34.4	34.7	35.0	35.2	35.4	35.4
Irrigation/Agriculture	1,117	1,134	1,165	1,258	1,307	1,412	1,511	1,580	1,622	1,734	1,775	1,899	2,032
% Total Sales	2.9	2.7	2.6	2.5	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.2
General Purposes 2/	848	883	898	980	993	1,016	1,071	1,120	1,127	1,131	1,210	1,295	1,306
% Total Sales	2.2	2.1	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.5	1.5	1.5	1.5
Government Buildings	771	840	896	968	1,046	1,129	1,260	1,318	1,409	1,508	1,614	1,726	1,847
% Total Sales	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Total Sales	38,532	42,002	44,822	48,464	52,279	56,459	60,978	65,856	70,465	75,338	80,676	86,321	92,597
Losses 3/	5,254	5,728	6,112	6,600	7,129	7,699	8,315	8,980	9,609	10,202	11,001	11,771	12,567
Required Net Generation	43,786	47,730	50,934	55,064	59,408	64,158	69,293	74,836	80,074	85,680	91,677	98,062	104,961
Losses, %	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Load Factor, %	66.1	66.1	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7	64.7
Maximum Demand, MW	7,563	8,244	8,986	9,704	10,481	11,319	12,225	13,203	14,127	15,116	16,174	17,308	18,518

1/ Includes sales to municipalities.

2/ Includes street lighting, transportation and sewage treatment.

3/ Losses in transmission and distribution.

SOURCE: Projections of the Egyptian Electrical Authority, April 1980.

FOOTNOTES
(Section A)

1 Egypt National Transport Study, Interim Report, 1977, Summary Page IX, Par. 2.2.2.

2 Friesz, T.L. and Tourreilles, F.A., Transport Regulatory Policy in Egypt, prepared for Local Goverment and Regional Development in Egypt, Fayoum, January 5-10, 1980.

3 NEDECO, Quarterly Progress Report, 10-15-80, Chapter 8.5, p. 5.3.

4 Harris, F.R., Hassan Ismail Associates and Engineer Marshall, Morsi A. Morsi, January 1978, proposed for the Ministry of Housing and Reconstruction.

5 Op. Cit., NEDECO Quarterly Progress Report, p. 5.1.

(Section B)

6 Continental Telephone Holding Corporation, Arab Republic of Egypt, Telecommunications Sector Study, prepared for the Ministry of Transport, Communication and Marine Transport, ARETO (Arabl Republic of Egypt Telecommunications Organization), Volumes 1-10, April 1978.

(Section C)

7 Power Sector Statistical Data, 1969-1979, from the Egyptian Electricity Authority, April 1980.

8 Unpublished statistics of the World Bank, 1981.

9 Discussions of the National Rural Electrification Plan with the Chairman of the Rural Electricity Authority, 1981.

[10] More detailed information about Egypt's mining and petroleum sectors are represented in Part II, Section I of this report.

[11] Sanderson and Porter, Inc., "Power Sector Survey Phase I. Diagnostic: Report and System Planning," prepared for the Arab Republic of Egypt (Ministry of Electricity) and International Bank for Reconstruction and Development, 1977.

[12] Estimates of the Egyptian Petroleum Corporation, 1978.

[13] Maher, J.C., Fouda, A.A., and Garrison, R.E., "The Petroleum Potential of Egypt," U.S. Department of Energy, 1979.

[14] U.S. Department of Energy, "Joint Egypt/United States Report on Egypt/United States Cooperative Energy Assessment," Volume 1, Executive Summary, Main Report and Appendices, April 1979.

[15] Ibid.

TABLE V-61

EGYPTIAN ELECTRICAL AUTHORITY'S PROJECTED AVAILABLE GENERATING CAPACITY, 1979-1987

Name of Station	Number and Nominal Capacity of Units	Maximum Net Capability in MW (Assuming All Units in Service) 1979	1980	1981	1982	1983	1984	1985	1986	1987
Steam:										
Cairo West	3 x 87	165	197	239	240	261	261	261	261	150
Cairo South	4 x 60	170	200	220	220	240	240	240	240	200
Cairo North	2 x 30 + 1 x 20 + 2 x 10	64	64	64	50	36	36	--	--	--
El Tebbin	3 x 15	30	30	30	30	45	45	45	45	36
Talkha	3 x 12.5 + 3 x 30	100	100	100	100	117	117	117	36	36
Damanhour	2 x 15 + 3 x 65	200	200	200	200	225	225	225	225	180
El Seyouf	2 x 26.5 + 2 x 30	45	45	45	70	113	113	113	113	80
Karmouz	4 x 16	22	22	--	--	--	--	--	--	--
Assiut	3 x 30	78	78	78	78	90	90	90	90	50
Suez (Old)	4 x 25	80	80	80	80	100	100	100	100	40
Kafr El Dawar	3 x 110	110	220	220	330	330	330	330	330	330
Cairo West #4	1 x 87	87	87	87	87	87	87	87	87	87
Abu Qir	4 x 150	--	300	600	600	600	600	600	600	600
Ismailia	2 x 150	--	--	--	--	300	300	300	300	300
Suez (New)	2 x 150	--	--	--	300	300	300	300	300	300
Shoubra El-Kheima	3 x 300	--	--	--	--	--	--	300	900	900
600 MW Thermal (1985)		--	--	--	--	--	--	600	600	600
600 MW Thermal (1986)		--	--	--	--	--	--	--	600	600
600 MW Thermal (1987)		--	--	--	--	--	--	--	--	600
TOTAL STEAM		1,151	1,623	1,953	2,385	2,844	2,844	3,708	4,827	5,089
Combustion Turbines:										
El Max	2 x 14	22	22	22	22	22	22	22	22	22
Suez	1 x 17	17	17	17	17	17	17	17	17	17
Ismailia	1 x 22	22	22	22	22	22	22	22	22	22
Cairo North	1 x 22	22	22	22	22	22	22	22	22	22
Port Said	2 x 23	46	46	46	46	46	46	46	46	46
Fayum	1 x 22	22	22	22	22	22	22	22	22	22
Helwan	Total of 120 MW	120	120	120	120	120	120	120	120	100
Talkha	Total of 192 MW	192	192	192	192	192	192	192	192	160
Tahrir Mataman	1 x 23	22	22	22	22	22	22	22	22	20
Heliopolis	3 x 12.5	37	37	37	37	37	37	37	37	36
Karmouz	2 x 12.5	25	25	25	25	25	25	25	25	24
El Tebbin	2 x 25	50	50	50	50	50	50	50	50	38
Cairo East	2 x 25	50	50	50	50	50	50	50	50	38
El Mahmodia	4 x 50	--	--	200	200	200	200	200	200	200
Alexandria	2 x 50	--	--	100	100	100	100	100	100	100
TOTAL COMBUSTION TURBINES		647	647	947	947	947	947	947	947	869
Hydro										
High Dam		1,423	1,462	1,502	1,541	1,581	1,626	1,676	1,726	1,750
Aswan		183	183	183	183	183	183	183	183	200
Aswan II		--	--	--	--	--	220	220	220	220
TOTAL HYDRO		1,606	1,645	1,685	1,724	1,764	2,029	2,079	2,129	2,170
TOTAL SYSTEM CAPABILITY		3,404	3,915	4,585	5,056	5,555	5,820	6,734	7,903	8,128
PEAK LOAD		2,814	3,234	3,635	1,116	4,709	5,300	5,840	6,365	6,939
Reserve:										
MW		590	681	950	940	846	520	894	1,538	1,189
Percent of Load		21.0	21.1	26.1	22.8	18.0	9.8	15.3	24.2	17.1

SOURCE: Projections of the Egyptian Electrical Authority, April 1980.

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TABLE V-62

SUMMARY OF EGYPTIAN ELECTRICITY AUTHORITY INVESTMENT PROGRAM (1980-1987)

Item	(L.E. Millions)								Total
	1980	1981	1982	1983	1984	1985	1986	1987	1980-1987
1. Generation	139.4	286.9	399.3	484.6	495.0	413.5	438.1	522.1	3,209.2
Cost/Additional MW	0.273	0.428	0.848	1.172	1.868	0.452	0.375	2.322	0.762
2. Transmission	30.7	44.9	47.0	52.5	55.3	59.8	61.1	75.2	432.6
Cost/Additional MW	0.068	0.067	0.100	0.105	0.209	0.065	0.552	0.334	0.092
3. Distribution	71.5	81.1	95.2	108.0	123.1	134.4	144.4	156.5	914.2
Cost/Additional MW	0.140	0.121	0.202	0.216	0.465	0.147	0.124	0.696	0.194
4. Others	12.6	13.5	14.4	15.9	16.9	27.7	24.9	20.5	100.3
5. Total Program	254.2	426.4	555.9	661.0	690.3	635.4	668.5	774.3	4,656.3
Cost/Additional MW	0.497	0.636	1.180	2.494	2.605	0.695	0.572	3.443	0.986

SOURCE: Egyptian Electricity Authority Investment Program Projections (April 1980), and NUPS analysis.

PROJECTED DEMAND FOR POWER WILL FAR EXCEED THE CAPACITY OF THE HIGH DAM AT ASWAN

VI. INTER-COUNTRY COMPARISONS

A. Introduction

This section presents selected sets of data intended to facilitate inter-country comparisons. It is important that two strong cautions be noted:

1. Comparison with other countries has limited value for policy-makers in a particular country. Such data provide perspective and may help convey a gross sense of accomplishment or of the scale of problems yet to be addressed. However, conditions in one country are likely to be quite different in character of magnitude from those in another country. Solutions chosen to improve conditions in one country may be inappropriate in another. Indeed, the nature of competition in international trade suggests that the success of one country in a particular market or activity may limit the opportunity of other countries wishing to enter the same market or perform the same activity.

2. The data available for international comparisons are highly aggregate, normally not available for sub-national areas, and in every case subject to major limitations. The data in Tables VI-2 through 4 are the best data available for purposes of inter-country comparisons, but there are for each data item serious theoretical and technical problems which restrict their meaningfulness. While the general nature of these limitations is discussed below, the reader is strongly advised to read carefully the introductory material and the technical comments and notes that are included in the indicated source for each data item.

B. Data Limitations

All statistical data have limitations. They may be untimely, unreliable, or invalid; they may be irrelevant or inaccessible. More often than not, data are not absolutely useless, but have limitations to varying degrees. The data problems above as well as others are produced by biased or unrepresentive data collection efforts, by inaccurate or untimely processing of data collected, or by failure to publish data in timely

fashion in a usable format. These problems in turn are normally the result of inadequate technical control or inadequate funding or both. However, in countries which are both able and willing to devote more resources to statistical information, the data still have limitations. Efforts to achieve unbiased sampling or complete coverage in order to increase reliability and validity are sure to affect timeliness even where there are sufficient funds.

In fact, there are limits to what efforts should be made to improve data. Data collection, processing, storage and reporting should be cost-effective. Statistical information should not cost more than the benefit that can be achieved from their use, and it is the nature of the task that the last degree or two of accuracy are the most costly. It can be assumed then that data will not be perfect, but it is still important to ask if they are good enough, or if they are the right data for the kinds of policy choices that have to be made.

The following are some of the problems associated with data quality everywhere, but are especially likely to limit decision-making in developing countries:

i) Inadequately trained census and survey personnel;

ii) Technically faulty sample frames and survey instruments;

iii) Reliance on administrative records produced by officials with incentives which bias the data;

iv) Unclear definitions and unstated units of measure;

v) Inadequate or irrelevant analysis of data;

vi) Failure to process collected data in timely fashion — often due to excessively bureaucratic administrative processes or to premature or inappropriate reliance on computers for processing;

vii) Failure to publish data in a timely fashion — sometimes not at all;

viii) Collection and publication of data irrelevant to the requirements of data users.

The resulting data are often inadequate for decision-making in the individual country, but when inter-country comparisons are made, two classes of problems are especially constraining:

i) Timeframes do not match. Many data are old, especially those that rely on the decennial censuses. A user must choose between comparing data across different time periods or finding a least common denominator — which may make data more useful for historical perspective than for making current policy choices.

ii) Definitions do not match. Definitions chosen for specific data items may or may not be appropriate for decision-making in individual countries, but they invariably limit comparison of data between countries. Table VI-1 illustrates the nature of the definition problem by listing selected definitions of "urban" compiled by the United Nations. Explicit and implicit differences in definitions exist for virtually every data item, but they tend to be less important in highly aggregate data (such as per capita GNP) than for detailed information on specific sectors.

C. Data Availability

Third world (and other countries) have taken major steps to improve their internal data and also to standardize at least a selected set of indicators to facilitate international comparison. However, progress in this area is uneven, and is constrained by various political and socio-economic conditions. The two major sources of data compiled for purposes of international comparison are the various agencies of the United Nations and of the World Bank. The bibliograghy at the end of this section contains a listing of the more widely used publications available in English.

TABLE VI-1
SELECTED DEFINITIONS OF URBAN

ALGERIA: Fifty-five of the most important communes having local self-government.

DOMINICAN REPUBLIC: Administrative centers of municipios and municipal districts, some of which include suburban zones of rural character.

EGYPT - 1975: Governorates, capital towns and chief towns of provinces and districts. 1960: Governorates of Cairo, Alexandria, Port Said, Ismilia, Suez, frontier governorates and capitals of other governorate as well as district capitals (markez).

FRANCE: Communes containing an agglomeration of more than 2,000 inhabitants living in contigous houses or with not more than 200 meters between houses, also communes of which the major portion of the population is part of the multicommunal agglomeration of this nature.

KENYA: Towns of 2,000 or more inhabitants.

LIBERIA: Localities having more than 2,000 inhabitants.

LIBYAN ARABIC REPUBLIC: Total population of Tripoli and Benghazi, plus the urban parts of Beida and Derna.

PAPUA NEW GUINEA: Centers with population of 500 or more but excluding separately located schools, hospitals, missions, plantations, rural settlements and rural villages regardless of population size.

SENÉGAL: Cap-Vert region and the cities of Saint-Louis, Theis, Kaolack, Diourbel and Zigiunchoz.

SWEDEN - 1950: Administrative towns, not including market towns and municipalities. Beginning 1960: Built-up areas with at least 200 inhabitants and usually not more than 200 meters between houses.

TOGO - 1958/1960: Seven urban communes. 1961: Localities having been given the status of communes.

UNITED KINGDOM:

ENGLAND and WALES: Area classified as urban for local government purposes, i.e., county boroughs, municipal boroughs and urban districts.

NORTHERN IRELAND: Administrative county boroughs, municipal boroughs, municipal boroughs and urban districts.

SCOTLAND: Cities and all burghs.

UNITED STATES: Places of 2,500 inhabitants or more incorporated as cities, boroughs (except Alaska), villages and towns (except towns in New England, New York and Wisconsin) but excluding persons living in rural portions of extended cities, the densely settled urban fringe whether incorporated or unincorporated places of 2,500 inhabitants or more.

ZAMBIA - 1950: The nine main European towns, neighboring mines, locations and compounds. Beginning 1961: Main towns and as many small townships as could be separately identified.

SOURCE: United Nations, Centre for Housing, Building and Planning. Oxford, U.K.: Pergamon Press, 1976. pp. 157-163.

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Most countries take a national population census at least once every ten years, usually in the first year or two of the decade. It is these major censuses that provide the bulk of demographic and social indicators as well as a benchmark by which other surveys, estimates and projections can be made. Normally, these decennial censuses are the only source of most sub-national level data as well as the only source of longitudinal data.

Many countries publish an annual statistical compilation which contains at least major economic indicators and frequently contains up-to-date demographic estimates. CAPMAS, for example, publishes Egypt's Statistical Yearbook. Also, many countries publish economic indicators annually, quarterly, or even monthly. These are often compiled by central statistical agencies or by central banks. In most cases, information published annually or more frequently is the product of administrative processes and is designed to reflect the activity of various agencies more than to serve as an integrated presentation of overall economic conditions. Social data are frequently absent from such publications. Social data are subject to sampling and other biases as well as definitional problems, but more importantly, social surveys of the necessary scale are an expensive luxury in developing countries unless their purpose is to better identify and define potential target groups for immediate action programs and projects.

Some of the data most essential for policy-making are almost always unavailable. This is especially a problem with data on specific "target groups" within populations. Data on income and wealth distributions, so useful for directing programs at the poor, are normally unavailable or inadequate. This is in part due to theoretical problems in defining income anywhere, but especially in countries with large "informal" or non-money components of the economy. However, frequently there are also political constraints on the collection and dissemination of such data.

D. Country Comparisons (Tables VI-2 - 4)

As long as the general limitations indicated above and the specific limitations in the individual sources themselves are carefully noted, it can be meaningful to compare basic aggregate statistics such as those in Tables VI-2 through 4. More specific data on individual sectors has been omitted due to the weaknesses in the data discussed above. These data can be found in the official publications of specific countries and in several of the sources listed in the bibliography at the end of the section.

One potential value of comparing Egypt with other countries is to find out if there are sufficient grounds for pursuing policies that appear to have been successful for other countries. The introduction to this section reflects NUPS' conclusion that such an attempt has limited value and can be dangerous. On the other hand, that which is learned from the experience of others can be useful if it is fully understood and if the approach is completely modified and integrated into the social and cultural fabric of the adopting country. An attempt was made to determine to what extent this might be possible with the available data.

There is little association between geography and economic performance except that the poorer nations generally are in hotter climates and that countries which have oil to export are at this point in time, better off than those that do not. It is of little value to cluster Egypt with other African countries or with other Middle Eastern countries since the local incidence of oil, minerals, arable land and water are more determinative of economic conditions than geographic proximity alone. Such factors as language, religion or common political experience might be relevant in some cases, but are only marginally important in choosing overall national urban policies.

More likely to be fruitful are comparisons of like economic performers. The World Bank and other compilers of comparative data normally group countries by their per capita Gross National Product (GNP). The World Bank's classification scheme for the 1979 per capita GNP follows:

i) low income countries: $80 - $370

ii) middle income countries: $380 - $4,380

iii) industrialized countries: $4,210 - $13,380

iv) capital-surplus oil exporters: $2,410 - $17,100

v) centrally planned economies (in 1981 became non-market industrial economies): $3,690 - 6,430

Egypt falls near the bottom of the middle income countries:

i) 38th from the bottom of 125 countries in 1977 ($320)

ii) 40th from the bottom of 125 countries in 1978 ($390)

iii) 43rd from the bottom of 124 countries in 1979 ($480)

Per capita GNP is a highly aggregate measure of production and says little about the distribution of the wealth or the uses to which it is put (see the discussion in Morris, 1979). In addition, it is normally measured in US dollars and does not reflect fluctuations in the relative values of that currency. It does not reflect the impact of differences in terms of trade.

With due consideration for the limitations of data, an effort was made to determine if countries with a per capita GNP close to Egypt had other indicators with values close to those of Egypt. Table VI-2, derived from the World Bank's World Tables for 1980, shows that no such cluster can be derived from a single year's data. Values for six widely used indicators of economic health are included for Egypt and for the four countries above and below Egypt in the per capita GNP rankings. No country is near Egypt's ranking for more than 2 of the 6 indicators, and a total of 43 countries are represented. Some of the countries are not developing nations (in the usual sense of the word) and they are geographically distributed throughout the world.

TABLE VI-2
SELECTED ECONOMIC INDICATORS:
RANKING AND VALUES FOR EGYPT AND FOR COUNTRIES CLOSE TO EGYPT IN THE RANKINGS

INDICATOR	COUNTRY	RANK OF/ NO. RANKED 1/	VALUE
1. Per capita GNP 1977	Solomon Islands	88 of 126	$ 410
	Senegal	89	385
	Ghana	90	377
	Yemen (PDR)	91	351
	EGYPT	92	342
	Sudan	93	334
	Indonesia	94	319
	Kenya	95	294
	Angola	96	280
2. Per capita GNP growth per annum 1970-1977	Indonesia	15 of 121	5.7%
	Swaziland	16	5.6
	Taiwan	17	5.5
	The Gambia	18	5.3
	EGYPT	19	5.2
	Yugoslavia	20	5.1
	Malaysia	21	4.9
	Belize	22	4.7
	Dominican Repuhlic	23	4.7
3. Average marginal national saving rate 1972-1977	Algeria	6 of 121	38.3%
	Malaysia	7	38.0
	Papua, New Guinea	8	37.7
	Yemen (A.R.E.)	9	37.0
	EGYPT	10	35.5
	Venezuela	11	35.3
	Luxembourg	12	34.8
	Nigeria	13	31.3
	Singapore	14	31.0
4. Gross domestic investment, growth rate per annum 1970-1977	Saudi Arabia	1 of 111	52.6%
	Oman	2	38.7
	Lesotho	3	29.3
	Rwanda	4	25.8
	EGYPT	5	25.4
	Nigeria	6	23.3
	Iran	7	22.0
	Paraguay	8	20.7
	Morocco	9	17.9
5. Current account balance as a % of exports of goods and non-factor services 1977 (- indicates deficit)	Australia	66 of 108	-16.1%
	Barbados	67	-16.9
	New Zealand	68	-16.9
	Yugoslavia	69	-17.6
	EGYPT	70	-17.9
	Chile	71	-18.7
	Austria	72	-19.1
	Ethiopia	73	-19.2
	Mauritius	74	-19.3
6. Deficit (surplus) on current account as a % of GDP 1977 (- indicates deficit)	Dominican Republic	85 of 116	-5.9%
	Portugal	86	-5.9
	Sierre Leone	87	-5.9
	Austria	88	-6.2
	EGYPT	89	-6.4
	Bolivia	90	-6.9
	The Gambia	91	-6.9
	Panama	92	-7.2
	Singapore	93	-7.2
	Turkey	94	-7.2

1/ Countries with "centrally planned economies" and countries for which there are no data are not ranked.

SOURCE: World Bank. World Tables, Second Edition 1980, Washington, D.C., 1980.

Since there are no obvious clusters of countries with which to compare Egypt, NUPS resorted to providing comparisons for a number of basic indicators for 16 countries and Egypt: the 8 countries above and 8 below Egypt in the World Bank's ranking of 1979 GNP per capita. Also, Table VI-3 provides aggregate figures for all "lower income" and "middle income" developing countries. Table VI-4 contains material for the sample group of countries, taken directly from the US Central Intelligence Agency's World Factbook - 1981. Table VI-3 arrays in tabular form basic indicators taken for the most part from the World Bank's World Development Report, 1981. Each of these sources provides data (where possible) for the majority of the world's countries should there be a need to compare with a different set than the 16 countries in Tables VI-3 and 4.

The basic question that can be answered, at least in part, with these data is "how well is Egypt doing with the resources it has compared to other countries?" Clearly, the choice of GNP or GDP as an indicator implies certain values, as does any answer to a question "how well..." In terms of economic choices, the set of values implied may not be universally accepted, but it is at least generally understood.

Egypt's per capita growth in current prices during the period 1960-1979 was a moderate 3.4 percent annual average, but was a vigorous 14.4 percent annual average between 1977 and 1979. Inflation during the period 1970-1979 was a rather low 8 percent per year. Gross domestic investment as a percent of the GDP in 1979 was high (31 percent), while gross domestic saving was low (16 percent). Egypt is in the fortunate position of having to import very little energy despite its moderately high consumption of energy per capita (565 kg. of coal equivalent in 1979).

Egypt's position in international trade is not good, but better than many countries in its per capita GNP range. Exports declined 2.1 percent per year in the period 1970-1979, while imports rose 3.3 percent per year in the same period. Terms of trade for Egypt were poorer in 1978 than in 1975, and got markedly worse in 1979 (almost the worst in the group of countries with which it is being compared). Debt service as a percentage of GNP in 1979 was high (8.8 percent). Furthermore, as a percent of exports (22.8 percent), the debt service ratio was also quite high.

Interpretation of demographic data depends on certain value assumptions, just as for economic indicators. Egypt's population, though not dense if total land is divided by total population, is in practical terms quite dense since most live in the Nile Valley or near the Mediterranean or Red Seas. The average annual population growth in the period 1960-1979 was 2.2 percent. This is about the same as for lower income countries in the aggregate (2.2 percent), less than for middle income countries (2.5 percent) and for the unweighted average of the 16 countries in the sample group (also 2.5 percent). The crude birth rate and crude death rate are both lower than for most of this group of countries, though markedly worse than for Thailand and the Philippines.

Egypt is clearly more urban than any of the countries in the group in 1980 (45 percent), but the urban population is not growing as fast as in most of these countries. The rate in the period 1960-1979 was 3.3 percent per year, while in the period 1970-1980 it dropped to 2.8 percent. Thirty-nine percent of Egypt's urban population live in Cairo. The percentage living in the largest city varies in the group of 16 countries, from 21 percent in Yaounde, Cameroon to 65 percent in Dakar, Senegal.

Egypt enjoys better health than most of the countries in the sample but is appreciably less well-off in this respect than either Thailand or the Philippines and apparently at a much higher cost. Life expectancy at birth is higher than most of the group (57 years in 1979 — an increase of 11 years over 1960). However, this is the same as for the weighted average of the low income countries and four years less than for the weighted average of middle income countries. Thailand and the Philippines had life expectancies at birth of 62 years. Population per physician and population with access to safe water reflect Egypt's willingness to pay a particularly high cost for health compared either to the

TABLE VI-3a

SELECTED INDICATORS FOR INTERNATIONAL COMPARISON

INDICATOR AND SOURCE	MIDDLE INCOME DEVELOPING COUNTRIES	LOWER INCOME DEVELOPING COUNTRIES	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
GNP per capita 1979, current U.S. Dollars [WDR 1981] 1/	1,420 (weighted)	230 (weighted)	480	370	370	380	400	420	430	440	470
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				480	500	500	530	550	560	590	600
GNP per capita 1978/ /1977 current U.S. Dollars [WDR 1980 2/ World Tables 3/	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	1,250/ / -- (weighted)	200/ / -- (weighted)	390/ /342	360/ /319	320/ /334	330/ /294	390/ /370	520/ /510	340/ /377	300/ /280	480/ /458
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				420/ /351	460/ /410	480/ /458	480/ /425	510/ /476	460/ /416	490/ /426	510/ /458
GNP growth per capita, annual rate 1960-1979 (percent) [WDR 1981]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	3.8 (weighted)	1.6 (weighted)	3.4	4.1	0.6	2.7	-0.8	10.9	-0.2	-2.1	0.8
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				11.8	1.6	.08	1.1	2.2	2.5	4.6	2.6
GNP growth per capita, annual rate 1977-1979 (percent) [calculated from WDR 80, WDR 81, World Tables]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	6.0 (1978-79) (weighted)	6.5 (1978-79) (weighted)	14.4	6.9	4.9	11.3	3.8	-8.8	6.2	18.2	1.3
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				13.4	9.0	4.2	9.8	6.7	12.9	13.9	11.8
Average annual rate of inflation 1970-1979 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	13.3 (median)	10.8 (median)	8.0	20.1	6.8	11.1	32.4	17.8	7.6	21.6	8.4
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	9.4	6.8	8.4	32.4	10.3	9.5	13.3
Composition of GDP, 1979 (percent) Agriculture/Services Industry (Manuf.3/)	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	14/48 38(24) (all weighted)	34/30 37(13) (all weighted)	23/42 35(28)	30/37 33(9)	38/49 13(6)	34/45 21(13)	66/13 21(-)	--	29/47 24(19)	48/29 23(3)	12/49 39(25)
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				13/61 26(11)	35/39 26(6)	15/44 41(16)	32/42 26(17)	17/54 29(13)	32/52 16(9)	26/46 28(19)	24/41 35(24)

(Continued)

TABLE VI-3b

SELECTED INDICATORS FOR INTERNATIONAL COMPARISON

INDICATOR AND SOURCE	MIDDLE INCOME DEVELOPING COUNTRIES	LOWER INCOME DEVELOPING COUNTRIES	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
Consumption, annual growth rate 1970-79 (percent) Public/ /Private [WDR 81]	7.4/ /5.2	4.5/ /3.7	5.0/ /7.0	11.4/ /7.9	-3.2/ /7.3	9.0/ /6.9	-0.2/ /0.3	--	--	3.0/ /-7.9	9.7/ /0.4 (78)
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	2.3/ /4.3	1.8/ /-2.2	7.4/ /3.8	8.0/ /5.2	5.4/ /5.3	9.1/ /6.9	8.4/ /4.7
Gross domestic investment/ /savings (as a percent of GDP, 1979) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	26/ /25 (median)	25/ /23 (median)	31/ /16	23/ /30	14/ /5	22/ /15	5/ /5	--	21/ /2	9/ /18	15/ /24 (78)
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	27/ /23	21/ /28	28/ /24	20/ /14	25/ /10	28/ /21	29/ /24
Energy consumption per capita, kg of coal equivalent 1979 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	1,225 (weighted)	463 (weighted)	565	237	141	180	265	73	266	208	791
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				545	448	858	248	470	148	376	356
Energy imports as a percentage of merchandise exports/year [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	20 (weighted)	--	6/78	5/78	24/77	30/78	19/77	--	15/76	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	17/78	11/77	14/77	1/77	9/78	28/78	32/78
Average anrual growth rate Exports/ /Imports 1970-79 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	4.3/ /5.0 (weighted)	-1.0/ /3.3 (weighted)	-2.1/ /11.1	6.5/ /12.8	-4.4/ /4.5	-0.5/ /-1.0	-7.2/ /0.1	--	-0.8/ /4.5	-7.9/ /4.2	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	2.3/ /2.3	-0.7/ /-8.1	4.3/ /1.0	-1.6/ /11.8	0.5/ /7.0	12.0/ /5.8	6.2/ /3.7
Terms of trade index 1978/ /1979 (1975 = 100) [WDR 80/ /81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	90/ /98 (median)	98/ /97 (median)	92/ /75	225/ /119	92/ /78	104/ /110	80/ /144	--	100/ /76	92/ /113	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	85/ /83	56/ /100	77/ /89	130/ /139	97/ /144	82/ /73	69/ /107

(Continued)

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TABLE VI-3c

SELECTED INDICATORS FOR INTERNATIONAL COMPARISON

INDICATOR AND SOURCE	MIDDLE INCOME DEVELOPING COUNTRIES	LOWER INCOME DEVELOPING COUNTRIES	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
Debt service as a percentage of GNP/ /Exports of Goods, Services 1979 [WDR 81]	3.2/ /14.2 (weighted)	1.8/ /10.8 (weighted)	8.8/ /22.8	4.5/ /13.4	4.5/ /33.0	1.8/ /7.5	0.5/ /4.2	1.2/ /1.8	5.0/ /13.7	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				1.3/ /2.8	8.1/ /13.8	9.7/ /19.7	5.3/ /12.7	5.4/ /29.6	2.5/ /9.5	1.0/ /4.2	2.7/ /12.6
Gross international reserves in months of import coverage 1979 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	5.2 (weighted)	4.2 (weighted)	2.6	3.4	0.7	3.7	4.8	10.3	--	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				5.7	--	1.8	2.4	4.5	0.5 (1978)	4.2	4.6
Projected population, millions 1980/ /2000 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	1,008/ /1,569 (totals)	2,300/ /3,275 (totals)	40/ /60	146/ /220	18/ /31	16/ /34	12/ /21	6/ /9	6/ /10	7/ /12	7/ /15
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				2/ /3	2/ /4	6/ /11	4/ /7	6/ /9	8/ /14	46/ /68	48/ /75
Average annual population growth 1960-70/ /1970-79 (percent) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	2.5/ /2.4 (weighted)	2.2/ /2.1 (weighted)	2.2/ /2.0	2.0/ /2.3	2.2/ /2.6	3.2/ /3.4	2.4/ /3.0	1.8/ /1.8	2.4/ /2.6	1.5/ /2.3	3.9/ /3.3
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				1.9/ /2.3	3.1/ /3.3	2.8/ /3.0	3.1/ /3.3	2.3/ /2.5	1.8/ /2.2	2.9/ /2.4	3.0/ /2.6
Crude rate of Birth/ /Death per 1,000 population, 1979 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	34/ /10 (weighted)	29/ /11 (weighted)	37/ /12	36/ /13	46/ /18	51/ /13	48/ /17	47/ /23	48/ /21	48/ /22	47/ /13
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				46/ /20	48/ /14	49/ /17	46/ /11	43/ /16	42/ /19	31/ /8	34/ /8
Percentage change in crude Birth/ /Death rate 1960-79 (minus unless marked) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	16.9/ /32.7 (weighted)	27.5/ /38.2 (weighted)	14.7/ /35.1	22.5/ /46.4	+0.9/ /26.2	1.3/ /42.7	1.4/ /30.0	5.0/ /19.5	+0.2/ /18.0	4.0/ /27.5	+0.6/ /30.9
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				7.9/ /30.1	4.2/ /33.0	2.8/ /31.4	10.6/ /39.5	6.7/ /25.5	1.2/ /30.2	29.8/ /50.0	24.7/ /47.4

(Continued)

TABLE VI-3d

SELECTED INDICATORS FOR INTERNATIONAL COMPARISON

INDICATOR AND SOURCE	MIDDLE INCOME DEVELOPING COUNTRIES	LOWER INCOME DEVELOPING COUNTRIES	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
Urban population as a percentage of total population, 1980 [WDR 81]	50 (weighted)	17 (weighted)	45	20	25	14	36	10	25	21	23
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				37	33	38	36	33	35	14	36
Urban population average annual growth rate, 1960-70/ /1970-80 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	4.1/ /3.8 (weighted)	3.8/ /3.7 (weighted)	3.3/ /2.8	3.6/ /4.0	6.9/ /6.8	6.4/ /6.8	4.6/ /5.1	7.5/ /7.2	2.9/ /3.3	5.1/ /5.7	6.8/ /6.4
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				3.2/ /3.7	5.6/ /5.6	5.4/ /5.5	5.4/ /5.5	3.9/ /4.1	5.6/ /7.5	3.5/ /3.3	3.8/ /3.6
Percent of urban population in largest city, 1980 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	29 (weighted)	13 (weighted)	39	23	31	57	35	25	65	64	50
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				49	--	35	33	44	21	69	30
Life expectancy at birth 1960/ /1979 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	53/ /61 (weighted)	42/ /57 (weighted)	46/ /57	39/ /53	39/ /47	41/ /55	40/ /49	36/ /42	37/ /43	33/ /42	45/ /55
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				36/ /45	44/ /54	40/ /49	46/ /58	43/ /50	37/ /47	51/ /62	51/ /62
Population per physician, 1977 (data in parenthesis are for 1975 or 1976) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	4,380 (weighted)	6,150 (weighted)	1,050	(13,640)	8,690	(11,630)	9,920	(12,460)	15,710	--	(7,030)
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				(7,760)	(9,260)	(10,190)	3,290	(1,850)	16,500	(18,150)	2,760
Population with access to safe water, 1975 (percent) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	59 (weighted)	29 (weighted)	66	12	46	17	35	4	37	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				24	20	42	46	38	26	22	43

(Continued)

TABLE VI-3e

SELECTED INDICATORS FOR INTERNAL COMPARISON

INDICATOR AND SOURCE	MIDDLE INCOME DEVELOPING COUNTRIES	LOWER INCOME DEVELOPING COUNTRIES	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
Daily calorie supply as a percentage of requirement, 1977 [WDR 81]	109 (weighted)	98 (weighted)	109	105	93	88	86	91	95	91	108
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				81	104	87	89	83	89	105	108
Adult literacy rate (percent) 1976 (parenthesis indicates 1974 of 1975 data) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	72 (weighted)	51 (weighted)	44	62	(20)	(45)	--	(13)	(10)	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				(27)	30	(39)	(60)	(63)	--	84	(88)
Number enrolled in primary school as a percentage of age group, 1978 male/female/total (data in parenthesis for 1976 or 1977) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	103/94/95 (weighted)	92/63/83 (weighted)	88/58/74	100/89/94	58/42/50	105/94/99	(80/61/71)	(50/7/29)	(50/32/41)	--	(105/90/97)
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				(92/51/77)	80/48/84	(106/89/98)	(85/84/85)	(96/76/86)	(101/42/91)	(85/78/82)	(102/107/105)
Number enrolled in secondary school as a percentage of age group, 1978 (Data in parenthesis for 1976 or 1977) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	41 (weighted)	36 (weighted)	47	22	16	18	(32)	(40)	(10)	--	(9)
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				(28)	20	(16)	(13)	(29)	(16)	(28)	(56)
Number enrolled in higher education as a percentage of population aged 20-24, 1977 (Data in parenthesis for 1975 or 1976) [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	11 (weighted)	3 (weighted)	(14)	(2)	2	(1)	(1)	1	2	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				2	(2)	2	7	13	1	5	24
Defense expenditure as a percent of GNP, 1978 [WDR 81]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	2.8 (weighted)	4.0 (weighted)	3.7	--	1.5	4.0	0.8	4.1	--	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	1.2	--	--	2.0	1.4 (1977)	3.1	2.8 (1977)

(Continued)

sample or to low or middle income countries. Egypt has approximately 6 times more physicians for a given population than do lower income countries, about 4 times more than do middle income countries, 2.5 times more than for the Philippines, and about 8 times more than for Thailand. Similarly, Egypt has a high proportion of people (66 percent) with reasonable access to safe water supplies, defined to include treated surface water or untreated but uncontaminated water such as that obtained from boreholes, springs and sanitary wells. This is far more than for lower income countries (29 percent) or for the sample countries (29 unweighted average) and moderately higher than for middle income countries (58 percent). Egypt consumed in 1977 109 percent of its caloric requirement per person — the best in the sample group and the same as for middle income countries as a whole.

In terms of education, Egypt has a low literacy rate (44 percent in 1976) but several of the African countries in the sample were much worse. Adult literacy for the middle income countries as a whole was 72 percent. Generally speaking, low national literacy rates occur in countries that do not educate women to the same extent they do men. Primary school enrollment as a percentage of the age group was 88 percent of males and 58 percent of females in Egypt, while for other middle income countries it was 103 percent for males and 94 percent for females.

On the other hand, a larger percentage of the population of secondary school age are enrolled (47 percent in 1978) than for any other country in the group except the Philippines (56 percent in 1977). Also, 14 percent of the population aged 20-24 was enrolled in higher education in 1976. This is again higher than for any other country in the sample group except the Philippines (24 percent in 1977).

The Overseas Development Council has developed a composite indicator to measure the physical well-being, the Physical Quality of Life Index (PQLI). This is composed of measures of infant mortality, life expectancy and literacy. Again, it would be more meaningful if the technical notes surrounding the data used for the index and the compilation process were read by the user (see Morris, 1979). Egypt's PQLI for the period 1970-1975 was 43, slightly better than the lower income countries (40), markedly worse than the middle income countries (67) and somewhat better than the average of the 16 countries in the sample group (39).[1]

TABLE VI-3f

SELECTED INDICATORS FOR INTERNATIONAL COMPARISON

INDICATOR AND SOURCE	MIDDLE INCOME DEVELOPING COUNTRIES	LOWER INCOME DEVELOPING COUNTRIES	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
Central government expenditure per capita, 1975 U.S. dollars in 1978 Defense/Education/Health (data in parenthesis for 1977) [WDR 81]	29/33/15 (weighted)	7/4/2 (weighted)	17/24/7	--	10/4/1	10/12/5	4/11/5	15/5/2	--	--	--
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				--	5/20/10	--/23/1	--	10/18/5	(5/11/3)	13/15/3	(11/7/3)
PQLI (Physical Quality of Life Index) 1970-75 [Morris, 1979][4/]	MIDDLE	LOWER	EGYPT	INDONESIA	SUDAN	KENYA	GHANA	YEMEN A.R.	SENEGAL	ANGOLA	ZIMBABWE
	(weighted average age, 38 countries with per capita GNP $300-699) 67	(weighted average, 42 countries with per capita GNP under $300) 40	43	48	36	39	35	27	25	16	46
				YEMEN PDR	LIBERIA	ZAMBIA	HONDURAS	BOLIVIA	CAMEROON	THAILAND	PHILIPPINES
				33	26	28	51	43	27	68	71

SOURCES: World Bank. World Development Report,[1/] 1981. New York: Oxford University Press, 1981.

World Bank. World Development Report,[2/] 1980. New York: Oxford University Press, 1980.

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E. City Comparisons (Table VI-5)

With respect to city comparisons, Table VI-5 presents comparisons between Alexandria and three cities of similar population levels and between Cairo and three similar-sized cities. The indicators selected are less than ideal as the data base which supports such comparisons is even less standardized than that for nations. The data comes from Statistics of World Large Cities, 1980, compiled by the Tokyo Metropolitan Government, 1980. Per capita figures have been omitted due to inconsistencies in the years for which data were available. However, Alexandria, Istanbul, Paris and Singapore are roughly the same size as are Cairo, Delhi, Jakarta and Rio de Janeiro.

Alexandria has a noticeably higher rate of natural increase than the other cities of its size in the sample, and in fact, much higher than Cairo, Delhi, Jakarta and Rio de Janeiro as well. This is due primarily to the very high birth rate, since the death rate is moderate. Cairo's rate is on a par with the other cities.

Statistics for infant mortality rates are too few and have too wide a range to draw conclusions. However, the contrast between Alexandria (20.9) and Cairo (11.1) is startling.

Useful data on education is very limited. Alexandria has many more primary and secondary schools than Singapore, but far fewer teachers. The primary school student-teacher ratio is 36 for Alexandria and 25 for Singapore; the secondary school ratio is 32 for Alexandria and 22 for Singapore. However, not too much should be made of this as the evidence of correlation between lower ratios and improved performance is not conclusive, and the cost of lower ratios is high. Cairo has far fewer schools than Delhi, Jakarta or Rio de Janeiro, but about the same number of students (primary plus secondary, excluding technical and teacher training schools). The student-teacher ratio is higher than for the other cities at both primary and secondary levels. Cairo has an impressive number of libraries and a moderate number of books. There is a certain inefficiency in scattering 2-1/4 million volumes across 61 libraries. Note for example, Singapore which divides 1.1 million volumes across 4 libraries.

TABLE VI-4a
SELECTED INTER-COUNTRY INDICATORS

INDICATOR	ANGOLA	BOLIVIA	CAMEROON	EGYPT	GHANA	HONDURAS
Land Area	1,245,790 km^2	1,098,160 km^2	475,400 km^2	1,000,258 km^2	238,280 km^2	112,150 km^2
Density (persons per km^2)	.18	.20	.05	.02	.02	.03
% Land (Arable/Cultivated)	1% (cult.)	2% (arable)	4% (cult.)	2.8% (cult.)	19% (cult.)	7% (cult.)
	INDONESIA	KENYA	LIBERIA	PHILIPPINES	SENEGAL	SUDAN
Land Area	1,906,240 km^2	582,750 km^2	111,370 km^2	300,440	196,840 km^2	2,504,530 km^2
Density (persons per km^2)	.01	.03	.06	.01	.03	.13
% Land (Arable/Cultivated)	12% (arable)	13% (arable)	20% (arable)	30% (arable)	40% (cult.)	37% (cult.)
	THAILAND	TOGO	YEMEN (ADEN)	YEMEN (SANAA)	ZAMBIA	ZIMBABWE
Land Area	512,820 km^2	56,980 km^2	287,490 km^2	194,250 km^2	745,920 km^2	391,090 km^2
Density (persons per km^2)	.01	.02	.15	.04	.13	.05
% Land (Arable/Cultivated)	24% (cult.)	50% (arable)	1% (arable)	20% (cult.)	5% (cult.) 5% (arable)	40% (cult.)

INDICATOR	ANGOLA	BOLIVIA	CAMEROON	EGYPT	GHANA	HONDURAS
Labor Force, Total	2.6 million	2.8 million	--	13.4 million	3.4 million	816,000
% of Total Population	38%	52%	--	31%	28%	12%
Electric Power: Capacity, Kw	525,000	367,000	358,000	5,225,000	1,157,000	172,500
Produced, Kwh	1.3 billion	1.1 billion	1.276 million	17.0 billion	4.0 billion	450 million
Year	1977	1977	1978	1979	1977	1977
	INDONESIA	KENYA	LIBERIA	PHILIPPINES	SENEGAL	SUDAN
Labor Force, Total	55 million	2.5 million	510,000	17.6 million	1,732,000	8.6 million
% of Total Population	36%	15%	27%	36%	30%	45%
Electric Power: Capacity, KW	4,500,000	420,000	327,000	4,727,000	183,850	231,800
Produced, Kwh	13.5 billion	1.3 billion	980 million	17,775 million	603 million	672 million
Year	1977	1977	1978	1979	1977	1977
	THAILAND	TOGO	YEMEN (ADEN)	YEMEN (SANAA)	ZAMBIA	ZIMBABWE
Labor Force, Total	--	--	--	--	402,000	778,000
% of Total Population	--	--	--	--	7%	10%
Electric Power: Capacity, Kw	3,160,900	16,900	140,000	77,000	1,563,400	1,453,000
Produced Kwh	13,845 million	41 million	310 million	265 million	7.2 billion	7.5 billion
Year	1979	1979	1979	1979	1977	1977

(Continued)

The Egyptian cities provide fewer points of access to health care than some of the other cities, but more than others. However, interpretation of the health impact of these data have to take into account the duration of the journey to the facility. These data are unfortunately not available. The Egyptian cities have more health professionals per unit of population than any of the other cities for which there are data except Singapore.

Consumption of electricity is low for Alexandria and Cairo, both in terms of domestic and industrial consumption, and markedly so compared to Paris or Rio de Janeiro.

The only data for communications available for most of the cities were for domestic telegrams and telephone subscriptions. The range of these data is very wide, with Alexandria sending 704,000 in 1978 while Paris sent twice that number almost 10 years earlier. Singapore and Jakarta sent approximately the same number as Alexandria. Alexandria has far fewer telephones than Istanbul (in 1970), Paris (in 1969) or Singapore. Cairo had about as many as Delhi, far more than Jakarta, but far fewer than Rio de Janeiro.

Transportation data useful for comparison was also sparse. No useful conclusions can be drawn from the passenger journey data. Alexandria has many more cars than Istanbul (but fewer trucks, both in 1970 and far fewer such vehicles than Paris or Singapore. Cairo has rather more than Delhi, about the same as Jakarta, but far fewer than Rio de Janeiro. Little can be said about the civil aviation passenger data since much such data varies with the number of important cities in a country and its role as a link in regional flight patterns.

FOOTNOTES
(Section D)

1 For this indicator only, definition of lower income is 42 countries with per capita GNP under $300 in 1970-1975; middle income is 38 countries with per capita GNP of $300 to $699.

TABLE VI-4b
SELECTED INTER-COUNTRY INDICATORS

INDICATOR	ANGOLA	BOLIVIA	CAMEROON	EGYPT	GHANA	HONDURAS
Railroads, Km	3,189	3,572	1,173	4,857	953	574
Highways, Km Total	73,828	37,300	28,940	47,025	32,200	7,300
Paved, Km	8,577	1,150	2,127	12,300	6,084	1,450
Inland Waterways, Km	3,220	10,000	2,090	3,360	235 + Lake Volta	1,200
Ports, Number	3 major	None	1 major, 3 minor	4 major	2 major, 1 naval	3 major, 9 minor
Pipelines, Km	179 crude oil	1,670 crude oil 1,295 ref. prod. 580 nat. gas	--	--	3 refined prod.	--

INDICATOR	INDONESIA	KENYA	LIBERIA	PHILIPPINES	SENEGAL	SUDAN
Railroads, Km	7,843	2,040	499	3,510	1,033	5,470
Highways, Km Total	93,063	52,370	8,524	152,800	13,870	10,550
Paved, Km	26,583	5,335	804	20,000	2,960	600
Inland Waterways, Km	21,579		370	3,219	1,505	5,310
Ports, Number	10 major/70 minor	1 major	1 major/6 minor	18 major/numerous minor	1 major	1 major
Pipelines, Km	--	483 ref. prod.	--	251 ref. prod.	--	800 ref. prod.

INDICATOR	THAILAND	TOGO	YEMEN (ADEN)	YEMEN (SANAA)	ZAMBIA	ZIMBABWE
Railroads, Km	3,830	None	None	None	2,014	3,434
Highways, Km Total	34,970	784	5,311	3,477	36,402	78,491
Paved, Km	16,244	385	322	467	5,488	8,058
Inland Waterways, km	3,999	None	--	--	2,250	280
Ports, Number	2 major/16 minor	1 principal/1 minor	1 major	1 major/2 minor	--	--
Pipelines, Km	--	--	32 refined prod.	--	724 crude oil	8 crude oil

INDICATOR	ANGOLA	BOLIVIA	CAMEROON	EGYPT	GHANA	HONDURAS
Telephones	32,000	101,000	26,000	--	--	20,000
AM Radio Stations	14	122	7	--	--	104
FM Radio Stations	5	18	1	--	--	12
TV Stations	1	8	0	--	--	7

INDICATOR	INDONESIA	KENYA	LIBERIA	PHILIPPINES	SENEGAL	SUDAN
Telephones	314,000	145,000	8,500	567,000	45,000	62,000
AM Radio Stations	251	8	5	273	8	2
FM Radio Stations	1	2	2	6	0	0
TV Stations	14	5	3	24	1	2

INDICATOR	THAILAND	TOGO	YEMEN (ADEN)	YEMEN (SANAA)	ZAMBIA	ZIMBABWE
Telephones	366,862	--	10,000	5,000	55,000	198,000
AM Radio Stations	150	--	1	2	4	8
FM Radio Stations	15	--	0	0	1	1
TV Station	10	--	5	2	3	5

(Continued)

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The list below includes publications which permit comparison of Egyptian data with a significant number of other countries. The list is not exhaustive. It contains only English language publications and omits the class of "yearbook" publications such as Statesmen's Yearbook, all of which contain useful statistical material.

Those publications of a serial nature contain the frequency and show the initial year of publication followed by a dash.

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TABLE VI-4c

SELECTED INTER-COUNTRY INDICATORS

	ANGOLA	BOLIVIA	CAMEROON	EGYPT	GHANA	HONDURAS
Religion	84% Animist 12% Roman Catholic	99% Roman Catholic 1% Protestant	1/2 Animist 1/3 Christian 1/6 Muslim	70% Muslim 30% Copt and Other	45% Animist 43% Christian 12% Muslim	97% Roman Catholic
Ethnicity	93% African 5% European 1% Mestigo	50-75% Indian 20-35% Mestigo 5-15% White	200 Tribes of widely differing background	90% Eastern Hamitee 10% Greek, Italian, Syro-Lebanese	99.8% Negroid African	90% Mestigo 7% Indian 2% Negro 1% White

	INDONESIA	KENYA	LIBERIA	PHILIPPINES	SENEGAL	SUDAN
Religion	90% Muslim 5% Christian 3% Hindu 2% Other	56% Christian 36% Animist 7% Muslim 1% Other	70-80% Animist Also Muslims & Christians	83% Roman Catholic 10% Protestant 4% Muslim 3% Buddhist & Other	80% Muslim 15% Animist 5% Christian	73% Sunni Muslim 23% Pagan 4% Christian
Ethnicity	45% Javanese 14% Sundanese 7.5% Madurese 7.5% Coastal 2% Other	97% Native African 2% Asian 1% European, Arab and Others	97% Indynon Negroid Africans 3% American, Liberian	91.5% Christian Malay 4% Muslim Malay 1.5% Chinese 3% Other	Numerous Tribes; Largest Wolof (36%) 4.5% Other 1% European and Lebanese	39% Arab 6% Beja 52% Negro 2% Foreigners 1% Other

	THAILAND	TOGO	YEMEN (ADEN)	YEMEN (SANOA)	ZAMBIA	ZIMBABWE
Religion	95.5% Buddhist 4% Muslim .5% Christian	20% Christian 5% Muslim 75% Animist	Muslim	Muslim	82% Animist 17% Christian Under 1%: Hindu Muslim	51% Syncretic 24% Christian 24% Animist few Muslims
Ethnicity	75% Thai 14% Chinese 11% Minorities	37 Tribes 1% European & Syro-Lebanese	Arabs, few Indian, Somites, European	90% Arab 10% Afro-Arab	98.7% African 1.1% European 0.2% Other	97% African 3% Europeans 0.5% Coloreds & Asians

SOURCE: U.S. Central Intelligence Agency, World Fact Book, 1981.

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TABLE VI-5a
INTER-CITY COMPARISONS

INDICATOR	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Population Total	2,400,000 / 1978	2,375,296 / 1973	2,226,000 / 1976	2,334,400 / 1978
Year	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
	5,260,000 / 1978	5,695,077 / 1979	5,403,957 / 1975	5,254,300 / 1978
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Birth Rate/Death Rate/ Rate of Natural Increase	30.9/9.1/21.7 / 1977	21.3/10.0/11.3 / 1970	13.7/12.1/1.6 / 1976	16.9/5.2/10.0 / 1978
Year	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
	22.7/7.4/15.3 / 1977	24.1/6.7/16.6 / 1978	16.4/6.6/9.8 / 1973	23.2/8.6/15.9 / 1977
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Infant Deaths per 1,000 Live Births/Year	20.9/1977	114.1/1970	--	12.6/1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
	11.1/1977	47.7/1978	--	--
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Number of Primary Schools/Enrollment	551/316,667 / 36.2/1877-78	--	--	352/290,859 / 25.2/1979
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Student-Teacher Ratio/ Year of Data	1,129/678,121 / 37.2/1977-8	1,620/539,777 / 34.5/1978	1,838/609,456 / 37.0/1976	1,964/904,329 / 24.7/1977
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Number of Secondary Schools/Enrollment	201/160,915 / 31.7/1977-8	--	--	153/176,521 / 21.8/1979
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Student-Teacher Ratio/Year of Data	472/413,776 / 31.1/1977-8	982/635,343 / 23.8/1978	411/136,382 / 21.4/1976	337/188,603 / 14.4/1977

(Continued)

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TABLE VI-5b
INTER-CITY COMPARISONS

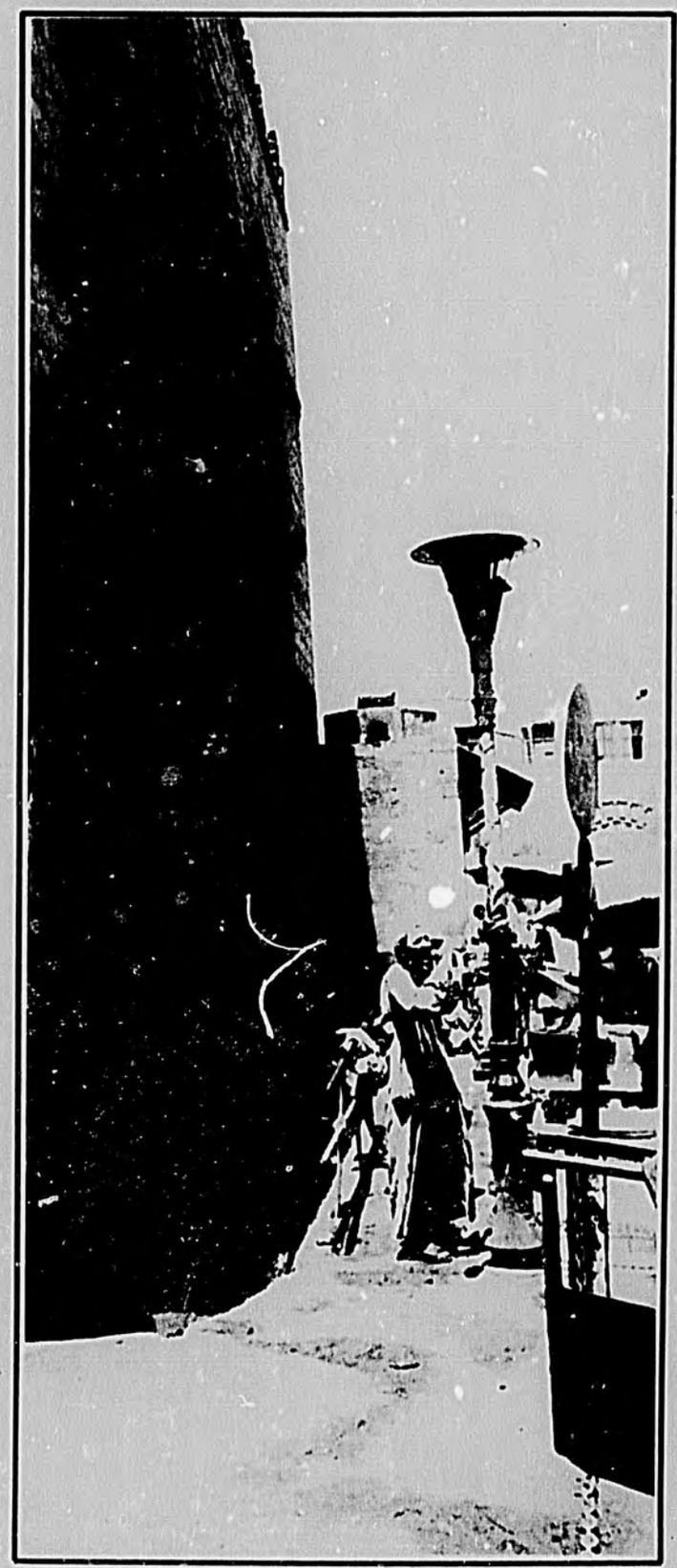
INDICATOR	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Libraries/Volumes	25/742,000 / 1974	43/642,419 / 1970	--	4/1,138,803 / 1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year of Data	61/2,248,000 / 1974	105/596,041 / 1970	--	240/-- / 1978
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Number of Hospitals/Clinics	35/41 / 1976	--	--	23/192 / 1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year	99/112 / 1976	143/20 / 1978	40/94 / 1975	277/355 / 1976
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Population Per Medical Person (Total of Physicians, Dentists, Pharmceutists and Nurses)/	271.1/1976	--	--	187.5/1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year	268.3/1976	--	1,085.3 1975	342.2/1977
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Domestic/Industrial Consumption of Electricity (Millions of Kwh)	196.1/676.1 / 1975	--	4,388/3,106 / 1976	887.5/1,811.3 / 1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year	716.6/651.7 / 1975	453.8/726.3 / 1977-78	--	2,408/5,349 / 1978
	ALEXANDIRA	ISTANBUL	PARIS	SINGAPORE
Domestic Telegrams Sent (Thousands)/Year	704/1978	287/1970	1,483/1969	784/1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
	961/1978	3,805/1978	716/1975	--

(Continued)

TABLE VI-5c
INTER-CITY COMPARISONS

INDICATOR	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Telephone Subscriptions	52,000 / 1978	90,257 / 1970	717,281 / 1969	540,209 / 1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year	198,000 / 1978	107,290 / 1978	46,250 / 1975	788,398 / 1976
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Passenger Journeys, Intracity, by Public Transport	421,087 / 1978	--	1,755,350 / 1976	--
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year	1,578,435 / 1978	869,100 / 1978-9	--	--
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Number of Passenger Cars/Trucks	62,620/13,066 / 1978	3,031/32,725 / 1970	1,138,000/(Total) / 1975	146,364/55,608 / 1978
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year of Data	154,235/13,066 / 1978	105,204/31,112 / 1978	162,355/44,699 / 1975	696,159/64,007 / 1978
	ALEXANDRIA	ISTANBUL	PARIS	SINGAPORE
Civil Aviation, Passengers Disembarked (Thousands)	--	1,060 / 1972	7,779 / 1972	838 / 1971
	CAIRO	DELHI	JAKARTA	RIO DE JANEIRO
Year	769 / 1972	666 / 1972	675 / 1972	891 / 1972

SOURCE: Tokyo Metropolitan Government, Statistics of World Large Cities, 1980.



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Part Three: Settlement Patterns

I. Definition of Urban Settlements
II. Rank Ordering of Urban Settlements
III. Typology and Urban Settlements
IV. Expansion of Urban Settlements (LANDSAT Maps)
V. Profiles of Governorates and Settlements
VI. Settlement Project Characteristics

EGYPT NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

PART THREE

SETTLEMENT PATTERNS

This part is concerned with those aspects of Egyptian settlement patterns that are considered particularly important for purposes of choosing an overall urban policy. It begins by attempting to clarify some of the problems involved in defining "what is urban?" then treats some of the aspects of size of settlements, including rank ordering by population and the relevance of the "primacy" factor.

A map showing spatial distribution of the present population is included, followed by a comparison of settlements based on a typology consisting of location, principal function and population size.

Landsat maps are presented for governorates and major settlements. These show the growth of population and its encroachment ont agricultural lands between 1972 and 1978.

A set of formatted "profiles" are included which contain relevant data on each governorate and major settlement. These are intended to facilitate comparisons. These are followed by the final section for Part Three, an analysis of the characteristics of ongoing settlement projects.

I. DEFINITION OF URBAN SETTLEMENTS

A. Administrative Definition

The classification of settlements in Egypt as urban or rural is not determined by population size, but rather by a combination of administrative procedures which are set in the context o laws and decrees relating local government units and administrative units to an urban-rural differentiation (Table I-1).

Administrative units are "security and economic units" with a limited number of low level administrative functions, while the more recent local government units are substantial economic units which have elected councils empowered with some decision-making and resource allocation functions.

Before 1960, the classification of a settlement as urban required that a settlement have a police station serving the locality and its surrounding villages.

Such urban units were determined by a decree from the Ministry of the Interior. The 1960 to 1979 local government laws appearing in Part Five of this report show a comparative analysis of the transfer of administrative power from the central to the local level.

The growth in the number of urban settlements between 1947 and 1976 is due to either the reclassification of villages as towns or the annexation of continguous villages to an existing urban place.

In September 1974, the Ministerial Committee for Local Government outlined some criteria to be considered in changing the classification of a settlement from village to city. Other than the specific requirement that the village population be not less than 15,000[1], the criteria are subject to diverse interpretations and quite often to the lobbying of special interests. The criteria assess the ability of the settlement to attract and maintain a large population in a productive life and stable environment, the potential for urban development activities and for special cases the strategic and resource value for the settlement's location regardless of its population size and urban development potential.[2]

TABLE I-1

URBAN/RURAL SETTLEMENTS AS RELATED TO ADMINISTRATIVE/LOCAL GOVERNMENT UNITS

Settlement As:	Urban	Urban/Rural	Rural
Administrative Unit	Shiyakha(s) Police Kism	(1947-60) MARKAZ: District Center W. Surrounding Agric. Territory	HOSH, EZBAH NAGAA Village
Local Government Unit	City Quarter (Hay)	(1975) MARKAZ: Central City W. a number of "Council" Villages	"Council" Village

The objective was to upgrade the services provided to the reclassified settlements, but within the financial resources and cost limitations bearable by the national budget. When a settlement is reclassified to urban, new demands are generated, including enlarging the settlements administratiave personnel, upgrading its education, health and social services, implementing building codes and the like. On the other hand, revenues also increase through taxation of urban and rural property within the settlement's urban cordon and its tax boundary.

It is to be noted that the "urban cordon" of a city is the boundary around its built-up area. The cordon is delineated by the governor after deliberation with and approval of the Governorate Board. On the other hand, the "tax boundary" for the city is usually larger than the cordon (in some cases the two coincide) and includes agricultural land contiguous to and surrounding the built-up area. The tax boundary is determined by a decree from the Ministry of Finance's Land Tax Authority. Changes or extensions of the urban cordon and tax boundary are not always coordinated. The first is changed according to surveys of the built-up area, the second is based on changes in the use of the land from agricultural to non-agricultural uses.

Both change according to the spatial extent to which municipal services are provided, and taxes are paid accordingly.

Another critical factor to be considered in changing the urban cordon or tax boundary of an urban settlement is the preservation of agricultural land within those boundaries. Law No. 59 of 1966, amended in 1978 and 1979, prohibits the creation or construction of any buildings or establishments on agricultural land without the express permission of the Ministry of Agriculture. This prohibition applies to all lands outside

of the boundaries of towns. Within towns, the use of such lands may be changed as long as the land is used for the benefit of the town itself or for buildings which will serve as homes for its owner, within guidelines set by the cabinet. It is further prohibited to issue permits for the subdivision of such agricultural lands except with the approval of the Ministry of Agriculture.

B. Other Considerations of What is Urban

In Egypt, there are villages larger in size than towns and, therefore, some settlements classified as cities are nothing more than central villages. Table I-2 shows the magnitude of that overlap. There are 53 urban settlements of a population size between 20,000 and 40,000; there are 39 villages larger than 20,000. These represent about 1 percent of the total number of villages in Egypt, where 4,064 are smaller than 20,000, but the 53 urban areas smaller than 20,000 represent about 30 percent of the total number of urban settlements.

Thus, the significant overlap occurs in the settlements varying in size between 20,000 and 40,000. These villages are usually in outlying locations.

Table I-3 shows by governorate an index of urban settlements' share of urban population. Each governorate has urban settlements which have been grouped as major (larger than 100,000), intermediate (50,000-100,000), or minor (less than 50,000) for this report.

Table I-4 presents a distribution by governorate of the 1976 rural population and number of villages by size.

TABLE I-2

OVERLAP BETWEEN URBAN & RURAL SETTLEMENT SIZES (1976)

Size Category	Urban (Cities & Towns)	Rural (Villages)
Larger than 1,000,000	3	--
500,000 - 999,999	--	--
200,000 - 499,999	7	--
100,000 - 199,999	10	--
40,000 - 99,999	34	0
20,000 - 39,999	53	39
10,000 - 19,999	37	357
5,000 - 9,999	7 -53 (<20,000)	1,162 -4,064 (<20,000)
1,000 - 4,999	7	2,304
Less than 1,000	2	241
TOTAL	160	4,103*

* Total = 4,103 villages. Difference of 25 villages from local government count of 4,128 is due to error in counting from different sources.

SOURCES: Compiled from Regional Statistical Indicators, 1978; and Preliminary Detailed Statistical Results, CAPMAS, Census of 1976.

TABLE I-3

INDEX OF URBAN SETTLEMENTS SHARE OF URBAN POPULATION, BY SIZE CATEGORY OF SETTLEMENTS (Exclude Urban Governorates & Outlay Governorates)

Governorate	Population	% Urban	% Rural	1976 Size Of Urban Population	Major Urban Settlement >100,000			Intermediate Settlement 50,000 - 99,999			Major Urban Settlement <50,000		
					No.	Population Size	% of Total Urban	No.	Population Size	% of Total Urban	No.	Population Size	% of Total Urban
Damietta	557,115	25.6	74.4	142,815	--	--	--	1	93,546	65.5	4	49,269	34.5
Dakahlia	2,732,756	24.0	76.0	655, 272	1	257,866	39.3	3	183,416	28.0	6	213,990	32.7
Sharkia	2,621,208	20.0	79.8	530,354	1	202,637	38.2	2	124,145	23.4	9	203,572	38.4
Ismailia	351,889	49.4	50.5	174,184	1	145,978	83.8	--	--	--	3	28,206	16.2
Qalyubia	1,674,005	40.9	59.1	684,586	1	292,700	57.5	2	151,731	22.2	6	139,155	20.3
Kafr El Sheikh	1,403,468	20.8	79.2	291,859	--	--	--	2	136,187	46.7	6	155,672	53.3
Gharbia	2,294,303	33.4	66.6	766,337	2	577,489	75.3	1	50,410	6.6	5	138,438	18.1
Menoufia	1,710,982	19.7	80.3	336,691	1	102,844	30.6	1	55,131	16.4	7	178,716	53.0
Beheira	2,517,292	26.0	74.0	653,458	2	349,481	53.5	1	62,230	9.5	11	241,747	37.0
Giza	2,419,247	57.0	43.0	1,379,277	1	1,232,654	89.37	--	--	--	6	146,623	10.63
Beni Suef	1,108,615	24.9	75.1	276,193	1	118,148	42.8	--	--	--	6	158,045	57.2
Fayoum	1,140,245	25,2	75.8	276,428	1	167,081	60.4	--	--	--	4	109,347	39.6
Minia	2,055,739	20.9	79.1	430,830	1	146,423	34.0	1	74,256	17.2	7	210,151	48.8
Assiut	1,695,378	27.7	72.3	470,032	1	213,983	45.5	--	--	--	9	256,049	54.5
Sohag	1,924,960	21.0	79.0	396,867	1	101,758	25.6	2	104,344	26.3	8	190,765	48.1
Qena	1,705,368	22.9	77.1	391,052	--	--	--	2	186,535	47.7	8	204,517	52.3
Aswan	619,932	37.0	63.0	229,657	1	144,377	62.9	--	--	--	3	85,280	37.1

SOURCE: CAPMAS, 1976 Census.

FOOTNOTES
(Section A)

1 This population size means that the "central" villages have the highest probability of being converted to cities, since by definition they also have the highest proportion of social and economic activity.

2 For example, small settlements in the Sinai on the Red Sea and Mediterranean coast and in the archeological belt of Upper Egypt.

TABLE I-4

DISTRIBUTION OF 1976 RURAL POPULATION AND NUMBER OF VILLAGES -- BY VILLAGE SIZE

(Excludes Urban Governorates & Outlying Governorates)

GOVERNORATE	RURAL POPULATION	NO. OF VILLAGES BY SIZE					TOTAL
		<1,000	1,000 to 4,999	5,000 to 9,999	10,000 to 19,999	>20,000	
Damietta	414,300	3	24	16	13	1	57
Dakahlia	2,077,484	38	277	115	40	3	473
Sharkia	2,090,854	33	271	121	32	3	460
Qalyubia	289,420	2	105	52	19	9	187
Kafr el Shiekh	1,111,609	9	109	57	17	4	196
Gharbia	1,527,966	18	179	78	26	2	303
Menoufia	1,374,291	22	176	80	19	1	298
Beheira	1,863,834	56	276	94	26	3	455
Ismailia	177,705	4	1	7	6	2	20
Giza	1,039,970	2	66	63	19	4	154
Beni Suef	832,422	8	154	50	6	-	218
Fayoum	863,817	6	83	44	22	1	156
Minia	1,624,909	9	185	117	25	1	337
Assiut	1,225,346	12	135	66	24	1	238
Sohag	1,519,669	2	134	100	28	1	265
Qena	1,314,316	-	76	85	25	2	188
Aswan	390,275	16	36	17	10	1	80
New Valley	50,238	1	17	-	-	-	18
TOTAL		241	2,304	1,162	357	39	4,103

SOURCE: Compiled from 1976 General Census of Population, CAPMAS, November 1976, Governorates Preliminary results.

II. RANK ORDERING OF URBAN SETTLEMENTS

A. Historical Demographic Summary

The urban population of Egypt and its urban settlements have been consistently growing over time. Table II-1 shows the increase in urban, rural and total populations for selected years from 1927 to 1976. Total population increased from 14 million in 1927 to over 36 million in 1976; respectively for these years, rural population increased from 10.3 million to more than 20 million, and urban population from 3.7 million to about 16 million.

TABLE II-1

POPULATION & URBANIZATION 1927 -1976

(In 000's)

	1927	1937	1947	1960	1966	1976
TOTAL POPULATION	14,083	15,811	18,806	25,772	29,720	36,656
Rural	10,364	11,429	12,604	16,115	17,919	20,559
Urban	3,720	4,382	6,202	9,657	11,801	16,098
% Rural to Urban	73.6	72.3	67.0	62.5	60.3	56.1
% Urban to Total	26.4	27.7	33.0	37.5	39.7	43.9
AVERAGE GROWTH RATE						
Average % Population Change:						
Total	1.23/yr	1.89/yr	2.85/yr	2.55/yr	2.30/yr	
Rural	1.03/yr	1.03/yr	2.14/yr	1.87/yr	1.47/yr	
Urban	1.78/yr	4.15/yr	4.28/yr	3.70/yr	3.66/yr	
AVERAGE GROWTH RATE						
Compound Annual Growth Rates:						
Total	1.20	1.75	2.45	2.40	2.12	
Rural	0.98	0.98	1.91	1.78	1.38	
Urban	1.65	3.53	3.47	3.40	3.15	
Ratio of Average % Population Change:						
Urban/Total	1.45	2.20	1.50	1.45	1.56	
Urban/Rural	1.73	4.03	2.00	1.98	2.47	
Ratio of Average Growth Rate:						
Urban/Total	1.38	7.02	1.42	1.42	1.49	
Urban/Rural	1.68	3.60	1.82	1.91	2.28	

SOURCE: Compiled and computed from various CAPMAS statistical handbooks.

Proportionally, the rural population decreased from 73.6 percent in 1927 to 56.1 percent in 1976. The urban population increased from 26.4 percent to 43.9 percent in the same period. The ratios of urban/rural and urban/total for both annual percent increases and compounded growth rates show distinctly that urban population has been growing faster than either the rural or the total.

TABLE II-2

DISTRIBUTION OF URBAN SETTLEMENT SIZES

(1927 - 1976)

Settlement Size	1947		1960		1966		1976	
	No.	%	No.	%	No.	%	No.	%
>1,000,000	1	1.0	2	1.7	2	1.5	3	1.9
200,000 - 999,999	1	1.0	3	2.4	5	3.5	7	4.4
100,000 - 199,999	5	5.0	9	7.5	9	6.3	10	6.3
40,000 - 99,999	13	13.0	15	12.4	23	16.2	33	20.8
20,000 - 39,999	28	28.0	39	32.2	45	31.7	53	33.3
<20,000	52	52.0	53	43.8	58	40.8	53	33.3
TOTAL	100	100.0	121	100.0	142	100.0	159	100.0

SOURCE: Updated from "Tahaddor Fi El Watan El Arabi," Appendix of Chapter 9, Volume 2.

The number of urban settlements and their share of urban population has kept pace with this continuous growth. As Tables II-2 and 3 show, the number of urban settlements has increased from 100 in 1947, to 159 in 1976; their share of the total population increased respectively from 31.4 percent to 43.5 percent during the same period. The data also show that between 1947 and 1976 urban settlements larger than 1,000,000 increased their share of the total population and maintained their high proportion of the total urban population.

Large cities (100,000-500,000) increased their share of both total and urban populations. Although smaller cities (20,000-100,000) doubled in number, their share decreased of both urban and total population. The settlements smaller than 20,000 maintained their number over the 30 year period of 1947 to 1976, but lost substantially their share of both urban and total population.

Relative to their total numbers the distribution of settlement sizes varied during that period as shown in Table II-2.

TABLE II-3

PERCENTAGE OF TOTAL POPULATION & OF URBAN POPULATION IN EGYPTIAN URBAN SETTLEMENTS OF VARIOUS SIZES

(Percentages Rounded)

URBAN SIZE CLASS*	NUMBER OF CITIES				PERCENT OF TOTAL POPULATION				PERCENT OF URBAN POPULATION			
	1947	1960	1966	1976	1947	1960	1966	1976	1947	1960	1966	1976
PRIMATE 1,000,000	2	2	2	2	16.0	19.0	22.8	24.97	55.0	54.5	55.75	56.67
LARGE CITIES (100,000-500,000)	5	12	14	17	3.0	6.4	7.3	8.08	12.0	17.1	17.83	18.34
SMALLER CITIES (20,000-99,999)	41	54	68	86	9.5	9.3	8.4	8.36	24.1	22.1	20.54	14.87
SETTLEMENTS (LESS THAN 20,000)	52	53	58	[illegible]	2.9	2.6	2.4	1.66	8.9	6.31	5.94	3.77
SMALLER CITIES: CITIES (50,000-99,999)	9	8	10	19	3.4	[illegible]	[illegible]	[illegible]	12.0	6.2	[illegible]	6.16
SMALLER CITIES: LARGE TOWNS (30,000-49,999)	13	20	31	39	2.8	3.5	3.97	4.1[illegible]	10.0	9.9	0.73	9.35
SMALLER CITIES: SMALL TOWNS (20,000-29,999)	19	26	27	28	3.3	3.5	2.27	1.91	11.0	9.7	5.56	4.35
TOTAL	100	121	142	159	31.4	38.9	40.9	43.47	100.0	100.0	100.0	100.0

* See Section on Urban Typology in this report for change in size classification.

SOURCE: Adapted and corrected from J. Abu Lughod "Urbanization in Egypt", Economic Development & Cultural Change Vol. XIII, No. 3, April 1965, pp. 328.
NUPS, Update for 1966 & 1976, from Appendix, drafted, Vol. 2, Tahaddor Fi Al Watan El Arabi S. Abdel Hakim, et al. Cairo, 1978

THE URBAN POPULATION IS GROWING FASTER THAN THE RURAL

TABLE II-4a

CUMULATIVE PERCENTAGE SHARE OF URBAN SETTLEMENTS AND THEIR RESPECTIVE URBAN/RURAL DISTRIBUTION OF MARKAZ POPULATION

RANK	URBAN SETTLEMENT	1976 URBAN POPULATION	% OF TOTAL URBAN POPULATION	CUMULATIVE % OF URBAN POPULATION	DISTRIBUTION OF MARKAZ POPULATION	
					% URBAN	% RURAL
1	Cairo	5,084,463	31.49	31.41	100	--
2	Alexandria	2,318,655	14.36	45.85	100	--
3	Giza	1,232,654	7.63	53.48	92.9	7.1
4	Shoubra El Kheima	393,700	2.44	55.9	100	--
5	El Mahalla	292,853	1.81	57.73	49.1	50.9
6	Tanta	284,636	1.76	59.49	50.7	49.3
7	Port Said	262,620	1.63	61.12	100	--
8	Mansoura	257,866	1.60	62.72	48.9	51.1
9	Assiut	213,983	1.33	64.05	52.9	47.1
10	Zagazig	202,637	1.26	65.31	37.8	62.2
11	Suez	190,249	1.18	66.49	100	--
12	Damanhour	188,927	1.17	67.66	45.3	54.7
13	Fayoum	167,081	1.04	68.70	40.7	59.3
14	Kafr El Dawar	160,554	0.99	69.69	59.8	40.2
15	Minia	146,423	0.91	70.60	38.2	61.8
16	Ismailia	145,978	0.90	71.50	100	--
17	Aswan	144,377	0.89	72.39	79.2	20.8
18	Beni Suef	118,148	0.73	73.12	45.9	54.1
19	Shebin El Kom	102,844	0.64	73.76	51.0	49.0
20	Sohag	101,758	0.63	74.39	34.0	66.0
21	Qena	93,787	0.58	74.97	30.2	69.8
22	Damietta	93,546	0.58	75.55	36.1	63.9
23	Luxor	92,748	0.57	76.12	45.3	54.7
24	Benha	88,992	0.55	76.67	31.8	68.2
25	Kafr El Sheikh	77,537	0.48	77.15	21.9	78.1
26	Mallawi	74,256	0.46	78.06	20.9	79.0
27	Mit Ghamr	72,206	0.45	78.06	20.9	79.0
28	Belbeis	69,290	0.43	78.49	21.0	79.0
29	Qalyub	62,739	0.39	78.88	33.9	66.1
30	Edku	62,230	0.38	79.26	35.1	40.7
31	Matarra	61,153	0.38	79.64	83.4	16.6
32	Dessouk	58,650	0.36	80.00	22.6	77.4
33	Menouf	55,131	0.34	80.34		
34	Abu Kabir	54,855	0.34	80.68	28.7	71.3
35	Ekhmim	53,234	0.33	81.01	36.9	63.1
36	Gerga	51,110	0.32	81.33	24.6	75.4
37	Zefta	50,410	0.31	81.64	20.4	79.6
38	Belkas	50,057	0.31	81.95	23.7	76.3
39	Sinbellaween	49,296	0.31	82.26	14.8	85.2
40	Samalut	48,146	0.30	82.56	17.3	82.7
41	Hawamdiah	48,104	0.30	82.86	100	--
42	Naga Hamidi/ Farshout	46,889	0.29	83.15	16.3	83.6
43	Tahta	45,242	0.28	83.43	22.7	77.3
44	Kafr El Zayat	45,207	0.28	83.71	20.6	79.4
45	Kom Ombo	44,531	0.27	83.98	23.2	76.8
46	El Manzala	43,964	0.27	84.25	21.2	28.8
47	Rashid	42,962	0.27	84.52	37.2	62.8
48	Hosh Eissa	42,257	0.26	84.78	43.0	56.4
49	Armant	42,214	0.26	85.04	42.6	57.4
50	Senouris	42,022	0.26	85.30	21.6	78.4
51	Manfalout	41,126	0.25	85.55	21.7	78.3
52	Maghagha	40,802	0.25	85.8	18.7	81.3
53	Nasr	40,151	0.25	86.05	31.2	68.8
54	Ashmoun	39,49[illegible]	0.24	86.53	17.6	87.3

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TABLE II-4b

(Continued from Previous Page)

CUMULATIVE PERCENTAGE SHARE OF URBAN SETTLEMENTS AND THEIR RESPECTIVE URBAN/RURAL DISTRIBUTION OF MARKAZ POPULATION

RANK	URBAN SETTLEMENT	1976 URBAN POPULATION	% OF TOTAL URBAN POPULATION	CUMULATIVE % OF URBAN POPULATION	DISTRIBUTION OF MARKAZ POPULATION	
					% URBAN	% RURAL
55	Beni Mazar	39,373	0.24	86.53	17.6	82.4
56	Abnub	39,343	0.24	56.77	15.4	84.6
57	Faqous	39,082	0.24	87.01	13.4	86.6
58	Beila	38,787	0.24	87.25	16.0	84.0
59	Dikirnis	38,364	0.24	87.49	10.9	89.1
60	Fowa	37,809	0.23	87.72	48.8	51.2
61	Talkha	37,293	0.23	87.95	13.3	86.7
62	Abu Tig	35,959	0.22	88.17	24.9	75.1
63	Kanater	35,711	0.22	88.39	25.3	74.7
64	Tamya	34,969	0.22	88.83	19.6	80.4
65	Samanoud	35,418	0.22	88.61	21.7	78.3
66	Edfu	34,858	0.22	89.05	22.6	77.4
67	Esna	34,186	0.21	89.26	20.4	79.6
68	Minia El Kamh	33,579	0.21	89.47	11.1	88.9
69	Abu Qurqas	33,498	0.21	89.68	9.6	90.4
70	Qous	33,139	0.20	89.88	17.8	82.2
71	Beba	33,074	0.20	90.08	19.5	80.5
72	Khanka	32,881	0.20	90.28	21.2	78.8
73	Sherbin	31,679	0.20	90.48	16.5	83.5
74	Dayrout	31,624	0.20	90.68	14.5	85.5
75	El Quseya	31,421	0.19	90.87	18.4	81.59
76	Basyoun	30,463	0.19	91.06	21.8	78.2
77	Tala	30,345	0.19	91.25	16.6	83.4
78	Deshna	29,151	0.18	91.43	15.2	84.8
79	El Badari	28,057	0.17	91.60	25.2	74.8
80	Monshaa	28,031	0.17	91.77	14.0	86.0
81	Matruh	27,857	0.17	91.94	56.7	43.3
82	El Badrashin	27,237	0.17	92.11	15.88	84.12
83	Embaba/Osseim	27,224	0.17	92.28	5.7	94.3
84	Sers El Layan	27,018	0.17	92.45	100	--
85	Goheina	26,964	0.17	92.62	24.4	75.6
86	Abshawy	26,964	0.17	92.78	10.4	89.6
87	El Kharga	26,375	0.16	92.94	69.0	31.0
88	Baliana	26,087	0.16	93.10	13.3	86.7
89	El Shahada	25,749	0.16	93.26	17.7	82.6
90	Shebin El Kanater	25,574	0.16	93.42	13.4	85.6
91	Sidi Salem	24,817	0.15	93.57	14.0	86.0
92	El Fashn	23,506	0.15	93.72	14.2	85.8
93	Hehia	22,797	0.14	93.86	16.1	83.9
94	Fareskour	22,469	0.14	94.0	14.5	85.5
95	Mashtoul El Souk	22,269	0.14	94.14	100	--
96	El Ghanaim	21,893	0.14	94.28	48.4	51.6
97	Dilingat	21,706	0.13	94.41	14.9	85.1
98	Darb Nigm	21,560	0.13	94.54	11.7	88.3
99	Mahmoudia	21,282	0.13	94.67	17.2	82.8
100	Matai	21,101	0.13	94.80	17.2	82.8
101	Baltim	21,028	0.13	94.93	30.4	79.6
102	Quweisna	20,663	0.13	95.06	10.1	89.9
103	Tamyah	20,524	0.13	95.19	15.1	84.9
104	Toukh	20,284	0.13	95.32	8.8	91.4
105	Atsa	20,223	0.12	45.44	9.3	90.7
106	Der Muwass	20,085	0.12	95.56	13.3	86.6
107	Itaia El Baroud	19,008	0.12	95.68	8.8	91.2
108	Ibrahimieh	18,539	0.11	95.79	100	--
109	Abu Hommas	18,117	0.11	95.90	8.4	91.6
110	El Bagour	17,985	0.11	96.01	10.4	89.6
111	Kom Hamada	17,754	0.11	96.12	5.3	94.7
112	El Wasta	17,649	0.11	96.23	10.5	89.5
113	Qallein	17,640	0.11	96.34	15.5	84.5
114	Abu Hamad	17,606	0.11	96.45	8.9	91.1
115	Moragha	17,570	0.11	96.56	10.9	89.1
116	Abu El Matamir	17,485	0.11	46.67	13.1	86.9
117	Berket El Saba	17,462	0.11	96.78	12.6	87.4
118	Shabrakheit	17,308	0.11	96.89	12.6	87.4
119	El Saff	17,232	0.11	97.00	7.5	92.5
120	Samasta	17,202	0.11	97.11	18.5	81.5
121	El Tel El Kebir	16,719	0.10	97.21	27.8	72.2
122	Ihnasya	16,453	0.10	97.31	11.9	88.1
123	El Santa	15,620	0.10	97.41	7.5	92.5
124	Matobas	15,591	0.10	91.51	14.2	85.8
125	Rahmania	15,444	0.10	97.61	21.5	78.5
126	Kafr Saad	14,649	0.09	97.10	11.2	88.8
127	Sahel Salim	14,468	0.09	97.79	19.8	80.2
128	Hosh Eissa	14,404	0.09	97.88	7.2	92.8
129	Hosh Eissa	14,373	0.09	97.97	100	--
130	Ras Gharib	14,234	0.09	98.06	100	--
131	Kafr Sakr	13,736	0.09	98.15	6.6	93.4
132	Aga	13,394	0.08	98.23	6.0	94.0
133	Nakada	13,357	0.08	98.31	18.5	81.5
134	El Ayat	12,767	0.08	98.39	8.2	91.8
135	Qusseir	12,296	0.08	98.47	16.0	84.0
136	Sadea	12,158	0.07	98.54	14.7	85.3
137	Kotour	11,730	0.07	98.61	7.3	92.7
138	Sakalta	10,966	0.07	98.68	13.5	86.5
139	Kafr Shukr	10,882	0.07	98.75	13.5	85.5
140	Safaga	10,782	0.07	98.82	82.0	2.0
141	Ghardaka	10,635	0.06	98.88	59.8	40.2
142	Fayed	10,568	0.06	98.94	8.3	91.7
143	Sinai	10,104	0.06	99.00	100	--
144	El Zarka	9,652	0.06	99.06	100	--
145	Wadi El Natroun	8,424	0.05	99.11	55.1	44.9
146	El Dakhla/Mout	8,032	0.05	99.16	17.3	82.7
147	Adouah	7.146	0.04	99.20	7.9	92.1
148	El Hamam	6,588	0.04	99.24	53.8	46.2
149	Nasr	5,891	0.04	99.28	10.4	89.6
150	Abu Tisht	5,581	0.03	99.31	3.0	97.0
151	Siwa	4,999	0.03	99.34	72.7	27.3
152	El Seloum	4,161	0.03	99.37	66.0	34.0
153	Ataka	3,752	0.02	99.39	100	--
154	Borg El Arab	3,491	0.02	99.41	32.3	67/7
155	Ras El Bar	2,499	0.01	99.42	100	--
156	El Dabaa	2,366	0.01	99.43	22.7	77.3
157	Sidi Barrani	1,574	0.01	99.4	9.3	90.7
158	Awlaad Touk	936	0.006	99.45	0.6	99.4
159	Kantara	999	0.006	99.50	5.2	94.8
	TOTAL	16,148,919				

* Less than 100 due to rounding.

SOURCE: CAPMAS, 1976 Census.

B. Distribution of Urban Settlements Relative to Rural Population

There exists a relationship of functional interdependence between urban settlements and their rural hinterland. Excluding the four urban city/governorates, each urban settlement in Egypt is considered to be the service and administrative center of a markaz which contains both urban and rural populations. In cases where a markaz has two or more urban settlements within its jurisdication, only one of these is considered to be the "center" responsible for the service and administrative functions for the rural portions of the markaz; the other settlement(s) are considered as 100 percent urban.

Table II-4 and Figure II-1 show the cumulative percentage share of urban settlements and their urban-rural distribution of their markaz populations. The data show that Cairo, Alexandria, Giza and Shoubra El Kheima account for 56 percent of all urban population in Egypt.

In 1976, the population of Egypt was 43.9 percent urban and 56.1 percent rural. However, 33 settlements with a population larger than 50,000 account for about 80 percent of the urban population. The 126 settlements smaller than 50,000 account for the remaining 20 percent of the urban population and serve a rural population in their hinterland which amounts to 75 percent of the total rural population.

C. Rank-Size Distributions of Urban Settlements

Rank-size distributions are hierarchies which show the ranking of settlements ordered by descending population size. Comparing such hierarchies over time would reflect the shifts between the populations of the settlements, resulting from different rates of natural growth and/or migration streams, in response to spatial shifts in economic activities and employment opportunities.

567

528

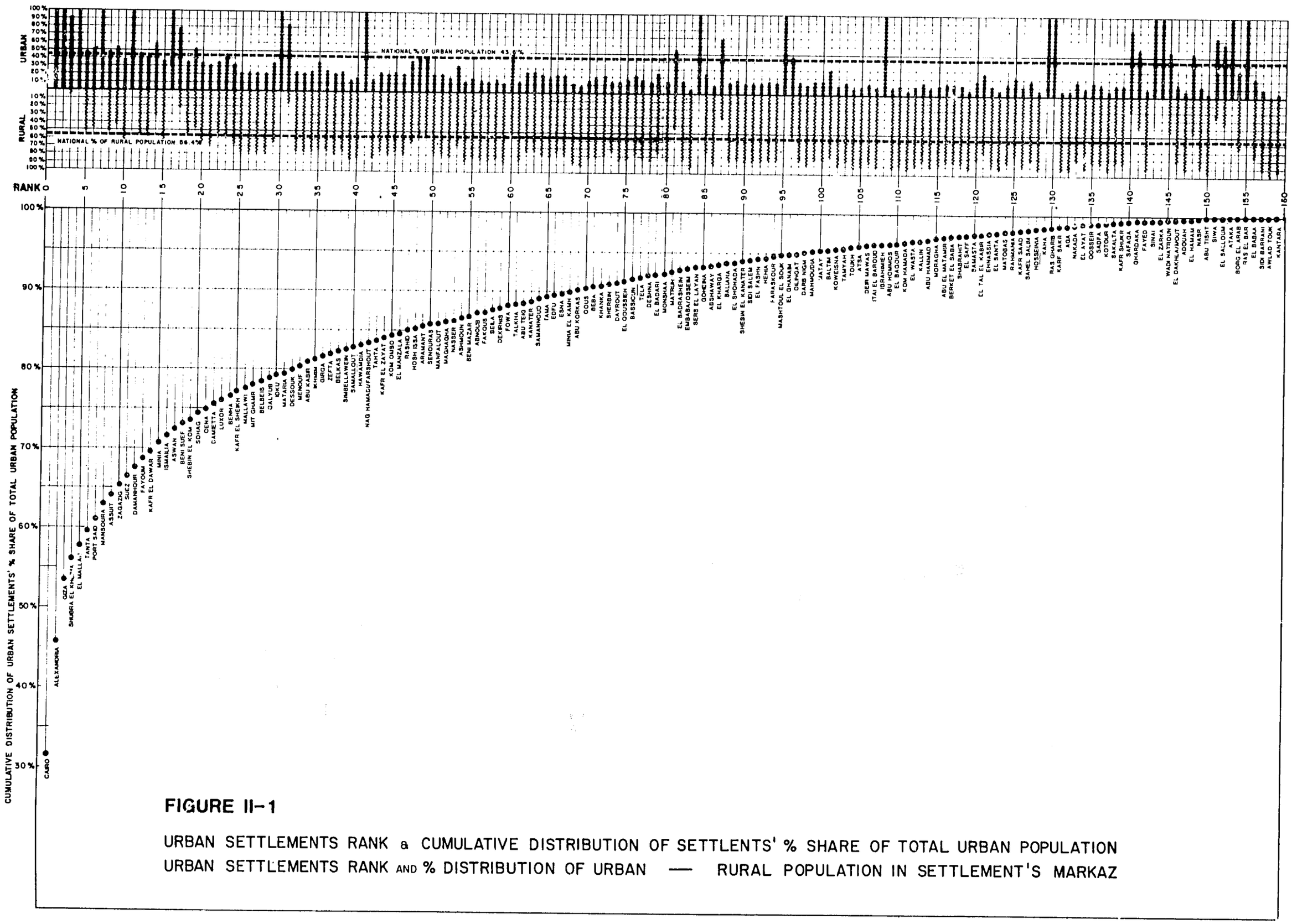

FIGURE II-1

URBAN SETTLEMENTS RANK & CUMULATIVE DISTRIBUTION OF SETTLENTS' % SHARE OF TOTAL URBAN POPULATION
URBAN SETTLEMENTS RANK AND % DISTRIBUTION OF URBAN — RURAL POPULATION IN SETTLEMENT'S MARKAZ

TABLE II-5a

RANK SIZE OF URBAN SETTLEMENTS FOR 1976-1966-1960-1947

CITY	GOV.	1976		1966		1960		1947	
		SIZE	RANK	SIZE	RANK	SIZE	RANK	SIZE	RANK
Cairo	Cairo	5,084,463	1	4,219,853	1	3,348,779	1	2,090,654	1
Alexandria	Alexandria	2,318,655	2	1,801,056	2	1,516,234	2	919,025	2
Giza	Giza	1,232,654	3	571,249	3	398,650	3	66,156	14
Shoubra el Kheima	Qalyubia	393,700	4	172,902	9	100,607	14	41,390	20
El Mahalla	Gharbia	292,853	5	225,323	7	178,288	7	115,758	5
Tanta	Gharbia	284,636	6	229,978	6	184,299	6	139,926	4
Port Said	Port Said	262,620	7	282,977	4	235,318	4	177,703	3
Mansoura	Dakahlia	257,86[illegible]	8	191,459	8	151,192	8	101,965	7
Assiut	Assiut	213,983	9	153,186	10	127,485	9	90,103	8
Zagazig	Sharkis	202,637	10	151,186	11	124,417	11	81,813	10
Suez	Suez	190,249	11	264,098	5	203,610	5	107,244	6
Damanhour	Beheira	188,927	12	146,079	12	126,600	10	84,352	9
Fayoum	Fayoum	167,081	13	133,616	14	102,046	13	73,642	11
Kafr el Dawar	Beheira	160,554	14	41,560	34	43,217	24	11,053	72
Minia	Minia	146,423	15	112,580	16	94,507	15	70,298	12
Ismailia	Ismailia	145,978	16	144,163	13	116,302	12	68,229	13
Aswan	Aswan	144,377	17	127,594	15	48,393	23	26,343	34
Beni Suef	Beni Suef	118,148	18	90,420	17	78,829	16	57,106	15
Shebin el Kom	Menoufia	102,844	19	66,290	22	54,910	20	41,636	19
Sohag	Sohag	101,758	20	74,753	20	61,944	18	43,168	17
Qena	Qena	93,787	21	68,536	21	57,417	19	42,929	18
Damietta	Damietta	93,546	22	86,328	18	71,780	17	53,631	16
Luxor	Qena	92,748	23	77,578	19	35,074	37	27,457	31
Benha	Qalyubia	88,992	24	63,849	23	52,686	21	35,880	21
Kafr el Sheikh	Kafr el Sheikh	77,537	25	51,544	26	38,592	31	15,724	62
Mallawi	Minia	74,256	26	59,938	24	52,614	22	35,624	23
Mit Ghamr	Dakahlia	72,206	27	43,665	32	40,016	29	29,030	30
Belbeis	Sharkia	69,290	28	58,070	25	37,941	33	23,692	42
Qalyub	Qalyubia	62,739	29	49,303	27	43,202	25	30,021	29
Idku	Beheira	62,230	30	42,200	N.A.	30,000	N.A.	N.A.	N.A.
Mataria	Dakahlia	61,153	31	41,105	35	N.A.	N.A.	N.A.	N.A.
Dessouk	Kafr el Sheikh	58,650	32	45,580	29	39,473	30	31,334	28
Menouf	Menoufia	55,131	33	48,256	28	41,914	27	31,475	27
Abu Kabir	Sharkia	54,855	34	41,789	33	36,800	34	N.A.	N.A.
Akhmin	Sohag	53,234	35	44,029	30	41,580	28	34,788	24
Gerga	Sohag	51,110	36	44,150	31	42,017	26	33,631	26
Zefta	Gharbia	50,410	37	37,883	42	31,421	40	27,249	33
Belkas	Dakahlia	50,057	38	41,067	36	38,376	32	34,771	25
Simbellawin	Dakahlia	49,296	39	40,686	37	36,501	35	23,839	40
Samallout	Minia	48,146	40	37,861	43	17,268	76	12,254	68
Hawamdia	Giza	48,104	41	36,227	45	N.A.	N.A.	N.A.	N.A.
Naga Hamadi	Qena	46,889	42	12,647	111	10,516	99	7,999	80
Tanta	Sohag	45,242	43	38,915	40	36,165	36	35,798	22
Kafr el Zayat	Gharbia	45,207	44	34,084	48	30,304	42	21,752	45
Kom Ombo	Aswan	44,531	45	27,227	67	21,783	65	N.A.	N.A.
El Manzalah	Dakahlia	43,964	46	33,298	50	29,415	43	20,634	48
Rashid	Beheira	42,962	47	36,711	44	32,368	38	23,996	39
Ilosh Issa	Beheira	42,257	48	30,006	57	25,276	55	N.A.	N.A.
Aramnt	Qena	42,214	49	38,308	41	14,706	83	N.A.	N.A.
Senouras	Fayoum	42,022	50	34,855	46	31,831	39	27,456	32
Manfalout	Assiut	41,126	51	34,142	47	28,540	47	24,565	38
Maghagha	Minia	40,802	52	33,211	51	28,650	46	19,376	51
Nasser	Beni Suef	40,151	53	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Ashmoun	Menoufia	39,494	54	32,167	53	29,095	44	23,047	43
Beni Mizar	Minia	39,373	55	34,053	49	30,573	41	22,420	44
Abnoub	Assiut	39,343	56	31,195	55	27,751	49	8,845	77
Fakous	Sharkia	39,082	57	40,661	38	22,773	64	18,130	56
Beila	Kafr el Sheikh	38,787	58	33,008	52	28,865	45	17,616	57
Dekirins	Dakahlia	38,364	59	18,831	85	16,440	77	10,669	74
Fowa	Kafr el Sheikh	37,809	60	30,654	56	27,206	51	18,869	52
Talkha	Dakahlia	37,293	61	23,742	74	19,588	69	13,[illegible]52	65
Abou Teig	Assiut	35,959	62	28,161	60	26,538	52	25,952	36
Kanater Khairieh	Qalyubia	35,711	63	22,477	76	N.A.	N.A.	N.A.	N.A.
Samannood	Gharbia	35,418	64	29,749	58	27,317	50	19,824	49
Tama	Sohag	34,969	65	29,293	59	27,810	48	23,765	41
Edfu	Aswan	34,858	66	27,326	66	25,105	56	26,192	35
Esna	Qena	34,186	67	27,383	64	25,342	54	25,811	37
Minia el Kamh	Sharkia	33,579	68	31,533	54	18,464	74	12,810	67
Abu Korkas	Minia	33,498	69	21,504	81	19,318	71	16,132	61
Qous	Qena	33,198	70	27,362	65	24,631	57	21,229	46
Beba	Beni Suef	33,074	71	22,871	75	20,773	68	13,174	66
Khanka	Qalyubia	32,881	72	28,084	61	21,637	66	N.A.	N.A.
Sherbin	Dakahlia	31,679	73	25,089	71	23,444	61	18,340	55
Dayrout	Assiut	31,624	74	27,646	63	24,364	58	17,434	58
El Quoesich	assiut	31,421	75	25,991	69	23,089	63	N.A.	N.A.
Bassioun	Gharbia	30,463	76	21,841	80	19,450	70	N.A.	N.A.
Tela	Menoufia	30,345	77	25,947	70	23,293	62	18,665	54
Suez	Suez	29,302	78	264,098	5	203,610	5	N.A.	N.A.
Deshna	Qena	29,151	79	21,857	79	12,581	92	16,321	59
Mersa Matruh	Matruh	27,857	80	11,039	N.A.	N.A.	N.A.	N.A.	N.A.
El Badari	Assiut	28,057	81	26,531	68	23,937	59	19,450	50
Monshaa	Sohag	28,031	82	25,058	72	23,617	60	18,793	53
El Badrashein	Giza	27,237	83	18,528	86	16,164	78	N.A.	N.A.
Embabah	Giza	27,224	84	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sers el Layan	Menoufia	27,018	85	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Gohaina	Sohag	26,964	86	24,203	73	N.A.	N.A.	N.A.	N.A.
Abshaway	Fayoum	26,578	87	10,430	120	9,298	105	7,370	82
El Gharga	New Valley	26,375	88	15,719	94	N.A.	N.A.	N.A.	N.A.
Paliana	Sohag	26,087	89	22,058	77	21,098	67	16,202	60
El Shohada	Menoufia	25,749	90	21,947	78	6,424	114	5,033	92

(Continued)

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TABLE II-5b

RANK SIZE OF URBAN SETTLEMENTS FOR 1976-1966-1960-1947

CITY	GOV.	1976		1966		1960		1947	
		SIZE	RANK	SIZE	RANK	SIZE	RANK	SIZE	RANK
Shebin el Kanater	Qalyubia	25,574	91	20,618	84	18,579	73	11,608	70
Sidi Salem	Kafr el Sheikh	24,817	92	21,096	83	5,434	118	N.A.	N.A.
El Fashn	Beni Suef	23,506	93	27,747	62	25,961	53	21,009	47
Hehia	Sharkia	22,797	94	17,696	88	15,519	79	11,111	71
Fareskour	Damietta	22,469	95	18,128	87	17,849	75	11,911	69
Mashtoul el Souk	Sharkia	22,269	96	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
El Ghanaim	Assiut	21,893	97	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Dilingat	Beheira	21,706	98	17,011	91	14,528	85	10,606	75
Darb Nigm	Sharkia	21,560	99	14,372	101	12,456	94	8,385	79
Mahmoudieh	Beheira	21,282	100	17,241	89	15,340	80	13,631	63
Matay	Minia	21,101	101	17,014	90	4,499	120	N.A.	N.A.
Borollos	Kafr el Sheikh	21,028	102	16,091	93	13,764	87	N.A.	
Koweisna	Menoufia	20,663	103	14,700	100	12,666	90	4,970	93
Tamyah	Fayoum	20,524	104	15,011	98	12,926	88	N.A.	N.A.
Toukh	Qalyubia	20,284	105	15,610	95	13,799	86	9,745	76
Atsa	Fayoum	20,223	106	6,436	131	5,724	115	4,965	94
Deir Mawas	Minia	20,085	107	16,947	92	15,145	82	13,413	64
Itai el Baroud	Beheira	19,008	108	13,105	108	10,348	100	6,728	86
Ibrahimieh	Sharkia	18,539	109	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Abu Hommos	Beheira	18,117	110	15,377	96	9,666	102	6,429	88
El Bagour	Menoufia	17,985	111	15,052	97	15,258	81	N.A.	N.A.
Kom Hamada	Beheira	17,754	112	11,881	115	9,575	103	3,650	98
El Wasta	Beni Suef	17,659	113	12,999	109	12,183	96	7,322	83
Kallin	Kafr el Sheikh	17,640	114	14,312	102	12,493	93	6,619	87
Abou Hammad	Sohag	17,570	115	13,591	106	11,509	95	7,728	81
Abu el Matamir	Beheira	17,485	117	13,855	105	12,654	91	N.A.	N.A.
Berket el Saba	Menoufia	17,462	118	14,011	104	N.A.	N.A.	N.A.	N.A.
Shabrakhit	Beheira	17,308	119	12,607	112	11,278	97	5,590	90
El Saff	Giza	17,232	120	11,857	116	10,279	101	6,810	85
Samasta	Beni Suef	17,202	121	14,832	99	14,673	84	N.A.	N.A.
El Tal el Kebir	Ismailia	16,719	122	13,361	107	N.A.	N.A.	N.A.	N.A.
Ehnassia	Beni Suef	16,453	123	14,174	103	12,854	89	10,829	73
Gharbia	El Santa	15,620	124	12,144	113	5,529	116	4,022	97
Kafr el Sheikh	Matobas	15,591	125	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Rahmania	Beheira	15,444	125	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Kafr Saad	Damietta	14,469	127	10,058	122	7,085	113	N.A.	N.A.
Sahel Selim	Kafr el Sheikh	14,468	128	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Hosseinia	Sharkia	14,404	129	10,024	123	7,696	112	4,282	95
Kaha	Qalyubia	14,373	130	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Ras Gharib	Red Sea	14,234	131	9,638	125	N.A.	N.A.	N.A.	N.A.
Kafr Sakr	Sharkia	13,736	132	9,865	124	7,790	111	4,229	96
AGA	Dakahlia	13,394	134	10,759	119	9,251	106	6,889	84
Nakada	Qena	13,357	135	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
El Ayat	Giza	12,767	136	9,311	126	8,535	107	5,135	91
Quseir	Red Sea	12,297	138	5,525	133	N.A.	N.A.	N.A.	N.A.
Sadfa	Assiut	12,158	139	8,310	130	7,865	100	5,929	89
Kotour	Gharbia	11,730	140	8,994	128	7,873	109	N.A.	N.A.
Sakalta	Sohag	10,966	141	9,024	127	8,143	108	N.A.	N.A.
Kafr Shukr	Qaiyubia	10,832	142	8,699	129	N.A.	N.A.	N.A.	N.A.
Safaga	Red Sea	10,782	143	N.A.	N.A	N.A.	N.A.	N.A.	N.A.
El Hurghada	Red Sea	10,635	144	4,087	137	N.A.	N.A.	N.A.	N.A.
Fayed	Ismailia	10,568	145	11,982	114	N.A.	N.A.	N.A.	N.A.
Sinai	Sinai	10,104	146	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
El Zarka	Damietta	9,652	147	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Wadi Natrum	Beheira	8,424	148	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
El Dakhla	New Valley	8,032	149	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Adouah	Minia	7,146	150	5,890	132	5,481	117	N.A.	N.A.
El Hammam	Matruh	6,588	151	4,180	138	N.A.	N.A.	N.A.	N.A.
Nasr	Aswan	5,301	152	459	142	N.A.	N.A.	N.A.	N.A.
Abu Tisht	Qena	5,581	153	5,098	134	4,518	119	3,301	99
Siwa	Matruh	4,999	154	3,569	139	N.A.	N.A.	N.A.	N.A.
El Saloum	Matruh	4,161	155	2,473	140	N.A.	N.A.	N.A.	N.A.
Araka	Suez	3,752	156	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Borg el Arab	Matruh	3,491	157	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Ras el Barr	Damietta	2,499	158	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
El Dabaa	Matruh	2,366	159	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Sidi Barrani	Matruh	1,574	160	1,332	N.A.	N.A.	N.A.	N.A.	N.A.
Awlad Touk	Sohag	936	161	10,228	121	10,715	98	N.A.	N.A.
Kantara	Ismailia	919	162	12,913	110	N.A.	N.A.	N.A.	N.A.

SOURCES: From 1976, CAPMAS Statistical indicators, 1978.
From 1966, 1960, 1947, Al Tahador Fi El Watan Arabi, Volume 2, Chapter 9, "Al Tahador Fi Gamhuriet Misr El Arabia", Appendix.

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Table II-5 ranks the urban settlements by their descending order of population size for 1976. To compare rankings, the table lists each of the settlement's populations for 1966, 1947 with their respective rankings of the settlement for each year.

Table II-6 ranks the settlements by their descending order of size for 1976 and shows the 1985 and 2000 population trend line projections for each of the settlements larger than 50,000, with their respective ranking for each of these two target years. These projections are merely the result of continuing current growth rates and are not estimates.

As for the importance of a rank-size hierarchy for the formulation of a national urban policy, we would best conclude by quoting Richardson:

> "...The towns and cities of a country form a national urban hierarchy in which there are many, many cities of very different sizes, even if most of them fall into readily identifiable size classes. Many of these cities are efficient in the sense of performing their economic and social functions very well. The existence of the hierarchy as a whole is of critical importance for spatial allocation and as a distributor of welfare. This fact alone makes nonsense of the search for a unique optimum city size. It might be possible to dilute the concept of a unique optimum into the weaker proposition of an optimum size for an individual city at a specific location with specific functions at a particular phase of its development. Needless to say, this dilution generates so many optima that it can provide no guidelines for policy makers.

Although most analysts now doubt the usefulness of the optimal city size concept, there is much less agreement about the parallel concept of an optimal distribution of cities. Perhaps the description "optimal" should be replaced by "efficient" or even "desirable" since the concept of optimality lives not in the world of concrete policies but in the formal economic models of welfare maximization.

TABLE II-6

TREND LINE PROJECTIONS FOR YEARS 1985 AND 2000 FOR ALL SETTLEMENTS WITH 1976 PROJECTIONS OF GREATER THAN 50,000

ACTUAL 1976 POPULATIONS 3/			POPULATION PROJECTIONS (000's) 2/ 1985		2000	
SETTLEMENT (50,000)	POPULATION	RANK	POPULATION	RANK	POPULATION	RANK
Cairo	5,084,463	1	6,428	1	9,503	1
Alexandria	2,318,655	2	2,944	2	4,384	3
Giza	1,232,654	3	2,326	3	6,702	2
Shubra el Kheima	393,700	4	848	4	3,047	4
El Mahalla	292,853	5	387	5	616	7
Tanta	284,636	6	363	6	546	8
Port Said	262,620	7	273 1/	10	291 1/	15
Mansoura	257,866	8	329	8	492	9
Assiut	213,983	9	286	9	465	10
Zagazig	202,637	10	267	11	422	12
Suez	190,249	11	195 1/	15	204 1/	21
Damanhour	188,927	12	264	13	457	11
Fayoum	167,081	13	220	14	350	14
Kafr el Dawar	160,554	14	336	7	1,150	5
Minia	146,423	15	187	16	282	16
Ismailia	145,978	16	157 1/	18	177 1/	25
Aswan	144,377	17	267	12	744	6
Beni Suef	118,148	18	148	19	217	19
Shebin el Kom	102,844	19	146	10	264	17
Sohag	101,758	20	135	21	215	20
Qena	93,787	21	124	22	196	22
Damietta	93,546	22	108	25	139	30
Luxor	92,748	23	160	17	398	13
Benha	88,992	24	120	23	195	23
Kafr el Sheikh	77,537	25	115	24	220	18
Mallawi	74,256	26	90	28	124	31
Sh't Ghamr	62,206	27	88	29	175	26
Belbeis	69,290	28	97	26	171	27
Qalyub	62,739	29	77	32	110	32
Idku	62,230	30	94	27	186	24
Mataria	61,153	31	84	30	141	29
Dessouk	58,650	32	73	33	106	34
Menouf	55,131	33	83	31	164	28
Abu Kabir	54,855	34	69	34	100	36
Akhmim	53,234	35	61	37	77	37
Gipga	51,110	36	57	38	69	38
Zefta	50,410	37	66	36	102	35
Belqas	50,057	38	67	35	108	33

NOTES: 1/ Projected populations for 1985 and 2000 for the Canal Cities based on 1960-1976 trend growth rates are probably not realistic due to evacuations of those cities' populations which took place during the trend period.

SOURCES: 2/ CAPMAS, 1976 Census.

3/ NUPS projected on basis of 1960-1976 annual growth rate.

This qualification makes the analyst more comfortable, but it does not bring us closer to a solution. The reasons is that virtually no serious work has been undertaken on what distinguishes an efficient from an inefficient settlement pattern or, to simplify the problem a little, national urban hierarchy. The familiar outbursts against the evils of primacy and the praises of decentralization clearly imply some preliminary conclusions on this point, but they are based on value judgements and intuitive "feel" rather than hard, or even "soft" reserach".[1]

D. Primacy Considerations

In a rank-size distribution of urban settlements, primacy is a phenomenon which shows the predominance of the leading urban settlements smaller than it in size.

The measure of primacy is the "four city index" obtained by dividing the largest city population by the total population of the next three largest cities. A value equal to 1.0 reflects a distribution of cities close to a regular theoretical urban hierarachy. As the value is larger than 1.0 it reflects increasing primacy and centralization. Index values smaller than 1.0 reflect decentralization and decreasing primacy in the rank-size distribution.

According to Richardson, primacy is found in both developed and developing countries; and empirical research has been inconclusive about the causes and the interpretation of primacy, especially as it relates to the process of economic development in less developed countries. He cites the "Law of Primacy" as enunicated by Jefferson in 1939:

> "All over the world it is the law of capitals that the largest city shall be super eminent, and not merely in size, but in national influence. Once a city is larger than any other in the country, this mere fact gives it an impetus to grow and cannot be affected by any other city, and it draws away from all of them in character as well as in size — it becomes the Primate city."

TABLE II-7a

FOUR PRIMACY INDICES FOR URBAN SETTLEMENTS IN EGYPT

1. NATIONAL PRIMACY (Cairo vs. Three Other "Urban Governorates")

Year	1947		1960		1966		1976	
Governorate	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index
Cairo	2,090.7	1.74	3,348.8	1.71	4,219.9	1.80	5,084.5	1.83
Alexandria, Port Said, Suez	1,204.0		1,955.2		2,348.1		2,771.5	

2. National Primacy (Greater Cairo[1/] vs. Three Other "Urban Governorates")

Year	1947		1960		1966		1976	
Governorate	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index
Greater Cairo	2,198.2	1.83	3,848.0	1.97	4,964.0	2.11	6,710.8	2.42
Alexandria, Port Said, Suez	1,204.0		1,955.2		2,348.1		2,771.5	

3. REGIONAL PRIMACY (Region's Capital vs. Region's Other Three Largest Cities)[2/]

Year	1947		1960		1966		1976	
Governorate	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index
1. Cairo								
Cairo	2,090.7	14.58	3,348.8	6.07	4,219.9	5.22	5,084.5	2.96
Next three cities	143.4		551.9		808.0		1,715.3	
2. Alexandria								
Alexandria	919.0	N.A.	1,516.2	7.63	1,801.1	7.84	2,318.7	5.63
Next three cities	N.A.		1,199.8		229.8		411.7	
3. Suez Canal								
Suez	107.2	0.33	203.6	0.43	264.1	0.46	190.2	0.31
Next three cities	327.7		476.0		578.3		611.2	
4. Delta								
Tanta	139.9	0.52	184.3	0.46	230.0	0.46	264.1	0.44
Next three cities	271.4		401.3		503.1		644.3	
5. North Upper Egypt								
Fayoum	73.6	0.45	102.1	0.45	133.6	0.51	167.1	0.49
Next three cities	163.0		226.0		262.9		338.8	
6. Assiut.								
Assiut	90.1	1.52	127.5	1.54	154.0	1.65	214.0	1.84
Next three cities	59.4		82.8		93.5		116.4	
7. South Upper Egypt								
Aswan	26.3	0.23	48.4	0.31	127.6	0.58	144.4	0.50
Next three cities	113.6		154.4		220.9		288.3	
8. Matruh								
Matruh	N.A.	N.A.	N.A.	N.A.	11.0	1.09	27.9	1.78
Next three cities	N.A.		N.A.		10.1		15.7	

4. LOCAL PRIMACY (Governorate Capital vs. Governorate's Other Three Largest Cities)[3/]

Year	1947		1960		1960		1976	
Governorate	Population (000's)	Primary Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index
1. Ismailia								
Ismailia	68.2	N.A.	116.3	N.A.	144.2	3.77	146.0	5.18
Next three cities	N.A.		N.A.		N.A.		N.A.	
2. Beheira								
Damnhour	84.4	N.A.	126.6	1.20	146.1	1.21	188.9	0.71
Next three cities	N.A.		105.6		120.5		265.7	
3. Damietta								
Damietta	53.6	N.A.	71.8	N.A.	86.3	N.A.	93.5	2.00
Next three cities	N.A.		N.A.		N.N.		46.8	
4. Kafr el Sheikh								
Kafr el Sheikh	15.7	0.23	38.6	0.40	51.5	0.47	77.5	0.57
Next three cities	67.8		95.4		109.2		135.2	
5. Gharbia								
Tanta	139.9	0.85	184.3	0.77	230.0	0.77	284.6	0.73
Next three cities	164.8		240.0		297.3		388.5	
6. Dakahlia								
Mansoura	102.0	N.A.	151.2	N.A.	191.5	1.52	257.9	1.41
Next three cities	N.A.		N.A.		125.8		183.4	
7. Sharkia								
Zagazig	81.8	N.A.	124.4	1.28	151.2	1.08	202.6	1.24
Next three cities	N.A.		97.5		140.5		163.2	
8. Menoufia								
Shebin el Kom	41.6	0.57	54.9	0.58	66.3	0.62	102.8	0.82
Next three cities	73.2		94.3		106.4		124.7	
9. Qalyubia								
Benha	35.9	N.A.	52.7	N.A.	63.8	0.26	89.0	0.18
Next three cities	N.A.		N.A.		244.7		492.2	
10. Giza								
Giza	66.2	N.A.	398.7	N.A.	571.2	N.A.	1,232.7	12.01
Next three cities	N.A.		N.A.		N.A.		102.6	
11. Fayoum								
Fayoum	73.6	N.A.	102.0	1.89	133.6	2.22	167.1	1.88
Next three cities	N.A.		54.1		60.3		89.1	
12. Beni Suef								
Beni Suef	57.1	N.A.	78.8	N.A.	90.4	N.A.	118.1	1.22
Next three cities	N.A.		N.A.		N.A.		96.7	
13. Minia								
Minia	70.3	1.04	94.5	0.96	112.6	0.86	146.4	0.90
Next three cities	67.3		98.5		131.0		163.2	

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TABLE II-7b

FOUR PRIMACY INDICES FOR URBAN SETTLEMENTS IN EGYPT

4. LOCAL PRIMACY (Governorate Capital vs. Governorate's Other Three Largest Cities)[3/]

Year	1947		1960		1966		1976	
Governorate	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index	Population (000's)	Primacy Index
14. Assiut								
Assiut	90.1	1.52	127.5	1.54	154.0	1.65	214.0	1.84
Next three cities	59.4		82.8		93.5		116.4	
15. Sohag								
Sohag	43.2	0.41	61.9	0.52	74.8	0.59	101.8	0.68
Next three cities	104.2		119.8		127.1		149.6	
16. Qena								
Qena	42.9	N.A.	57.4	0.95	68.5	0.53	93.8	0.52
Next three cities	N.A.		60.3		128.5		181.9	
17. Aswan								
Aswan	26.3	N.A.	48.4	N.A.	127.6	2.32	144.4	1.69
Next three cities	N.A.		N.A.		55.0		85.3	
18. Red Sea								
Hurgada	N.A.	N.A.	N.A.	N.A.	4.1	N.A.	10.6	0.28
Next three cities	N.A.		N.A.		N.A.		37.3	
19. New Valley[4/]	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
20. Matruh								
Mersa Matruh	N.A.	N.A.	N.A.	N.A.	11.0	1.09	27.9	1.78
Next three cities	N.A.		N.A.		10.1		15.7	
21. Sinai[4/]	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

SOURCE: NUPS elaboration of CAPMAS 1947, 1960, 1966 and 1976 Census data.

FOOTNOTES

1/ Greater Cairo includes Cairo Governorate plus cities of Giza and Shoubra el Kheima.

2/ Governorate composition by region, plus capital and three other largest cities.

1. Cairo (Cairo, Giza, Qalyubia): Cairo, Giza, Shoubra El Kheima, Benha.
2. Alexandria (Alexandria, Beheira): Alexandria, Damanhour, Kafr El Dawar, Idku.
3. Suez Canal (Port Said, Suez, Ismailia, Sharkia, Sinai): Suez, Port Said, Zagazig, Ismailia.
4. Delta (Damietta, Kafr El Sheikh, Gharbia, Dakahlia, Menoufia): Tanta, El Mahalla, Mansoura, Damietta.
5. North Upper Egypt (Fayoum, Beni Suef, Minia): Fayoum, Minia, Beni Suef, Malawy.
6. Assiut (Assiut, New Valley): Assiut, Manfalout, Abnub, Abou Teig.
7. South Upper Egypt (Qena, Aswan, Sohag, Red Sea): Aswan, Sohag, Qena, Luxor.
8. Matruh (Matruh): Mersa Matruh, El Hammam, Siwa, El Saloum.

3/ Governorate capital and three other largest cities:

1. Ismailia: Ismailia; El Tal El Kabir, Fayed, Kantara.
2. Beheira: Damanhour; Kafr El Dawar, Idku, Rashid.
3. Damietta: Damietta; fareskour, Kafr Saad, El Zarka.
4. Kafr El Shiekh: Kafr El Shiekh; Dessouk, Beila, Fowa.
5. Gharbia: Tanta; El Mahalla, Zefta, Kafr El Zayat.
6. Dakahlia: Mansoura; Mit Ghamr, Matarich, Belkas.
7. Sharkia: Zagazig; Belbeise, Abu Kabir, Fakous.
8. Menoufia: Shebin El Kom; Menouf, Ashmoun, Tela.
9. Qalyubia: Benha; Shoubra El Kheima, Qalyubia, Kanater Khairieh.
10. Giza: Giza; Hawamdiah, El Badrashein, Fembabah.
11. Fayoum: Fayoum; Senouras, Abshaway, Tamyah.
12. Beni Suef: Beni Suef; Nasser, Beba, El Fashn.
13. Minia: Minia; Malawy, Samallout, Maghagha.
14. Assiut: Aggort; Montalout, Abnub, Abou Teig.
15. Sohag: Sohag; Ekhmim, Gerga Tahta.
16. Qena: Qena; Luxor, Naga Hamadi, Aramant.
17. Aswan: Aswan; Kom Ombo, Edfu, Nasr.
18. Red Sea: Hurgada; Rad Gharib, Quseir, Safaga.
19. New Valley: El Gharga; El Dakhla, N.A., N.A..
20. Matruh: Mersa Matruh; El Hammam, Siwa, El Saloum.
21. Sinai: N.A.

4/ Population figures not available for four governorate cities to calculate primacy index.

Richardson also reports on other researchers who argue that primacy, which leads to polarization, is not a permanent phenomenon of a developing country but that it changes with the stages of its economic development. It increases with the agglomeration of economic and administrative functions, and decreases with their dispersion over the country, reflecting a migration response by the population to be redistributed, or new economic activities, or employment opportunities.

Richardson argues in his World Bank report, for the advantages and benefits of primate cities in developing countries:

> "...Focusing on the social congestion symptoms of primate cities neglects their many economic advantages (agglomeration economics in transportation, infrastructure, supply of skills, including managerial and technical experience). Also many of the small cities lack connectivity with markets, infrastructure and industrial location advantages. In addition there is an empirical relationship between faster economic growth and increasing primacy among LDCs. Although the evidence is not conclusive, the diagnosis of a primate city size distribution as abnormal or pathological may lead to dangerous and wrong-headed policy prescriptions."

The preceding brief discussion points to the "relativity" of primacy and its measure; and that the concept of functional dominance reflects essentially the importance of relationships or linkages (whether economic, administrative, etc.) existing between the settlements in the urban hierarchy.

There are several levels of functions, so three types of primacy measures for urban settlements in Egypt are interesting to consider.

i) National Primacy, reflecting dominance in functions at the national and international levels.

ii) Regional primacy, reflecting dominance in regional activities and service.

iii) Local primacy, reflecting administrative dominance within a jurisdiction.

Table II-7 shows these various primacy indices for urban settlements in Egypt.

Primacy at the national level shows indices for the four "urban" city governorates in Egypt: Cairo, Alexandria, Port Said and Suez. These four have always had a national role as seat of administration and government, intensive economic activities, concentrations of industry, business and commerce, ports and international transportation links with other countries, etc. Between 1947 and 1976, the indices show the stabilization in the dominance of the city of Cairo itself, but the increasing dominance of Greater Cairo which is influenced by the fast growth of Giza and Shoubra El Kheima. It shows also the dominance of Alexandria relative to other, smaller cities.

Compared to Cairo and Alexandria, Port Said and Suez seem to maintain a minor role which has remained almost constant over the past 30 years.

As for regional primacy, we have considered the eight officially decreed planning regions of the country. The primacy indices of the regional capitals generally do not yet reflect any dominance in service, economic or administrative functions at the "regional" level. However, based on population size alone, we find that Alexandria, Cairo, Assiut and Matruh display distinct dominance with respect to their regions. The other four regions are more balanced in the rank size distribution of their urban settlements and their population.

As for the local primacy, the governorates present an interesting case of relating administrative dominance to population size, especially as levels of economic activity increase with those settlement sizes. Although the capitals of governorates have administrative and jurisdictional dominance, this does not necessarily extend to the distribution of economic activities. The capitals of governorates are usually the largest urban settlements of the jurisdiction; however in many governorates there are other settlements competing in size and economic activity with these capitals (such as: Shoubra El Kheima in Qalyubia about five times larger than its capital Benha; Kafr El Dawar competing with Damanhour, Luxor which is larger than Qena, El Mahalla which is larger than Tanta and competing with it in the importance of its industrial activity; Dessouk competing with Kafr El Sheikh, etc.).

Based on 1976 Census figures, the primacy indices show that a few governorate capitals have dominance in their governorates. These are Damietta (2.00), Mansoura (1.41) Zagazig (1.24), Ismailia (5.18), Giza (12.01), Beni Suef (1.22), Fayum (1.87), Assiut (1.84), Aswan (1.69) and Marsa Matruh (1.78). It may be that in the long run, such capitals will always draw away from the other settlements in the governorate. Depending on one's point of view, this dominance could be interpreted in two ways: It could be considered as an impediment to the development of the rest of the governorate, or it could be considered as an indicator of a higher potential for the development of economic activities in these capitals. They have a higher level of social and technical infrastructure and they could provide substantial agglomeration economics for development.

FOOTNOTES
(Section C)

1 H. Richardson, World Bank Staff Working Paper No. 252, pp. 15.

III. TYPOLOGY AND URBAN SETTLEMENTS

The development and evolution of urban settlements is a function of historical, geographic, economic, administrative, demographic, social and cultural factors. Although each could be used to describe a distinct or specific facet of an urban settlement, it is the interrelationship between the factors which gives a place its own character.

There is no one unique or optimum way of formulating a typology of urban settlements in Egypt. Being concerned with an Urban National Policy, NUPS has used a combination based on location, principal function and population size.

i) Location is a spatial variable which reflects the geographic environment of a settlement, and often the historic reasons for its development at that place. It identifies closeness to natural resources, extent of developable area, accessibility to or remoteness from other settlements, amenities and climate, etc; these being physical factors which determine the size, density and attractiveness to people and their economic activities.

ii) Principal functions are essentially economic variables which describe the principal activities, predominately in terms of their employment mix.

Empirical evidence reported in the extensive literature on location and spatial economy, especially on the subject of "central places," shows that as the diversity and number of functions increase in a settlement, the level of service generally shifts upward from a limited local scale and eventually extends to larger geographic areas reaching perhaps regional and national scales.

iii) Population size relates size of a settlement to its principal functions. Spatial economics have related population size to the number, type and level of economic functions in a settlement, to its economies and diseconomies in the scale of its activities, to the assessment of the characteristics of its labor force, to the scale and level of services it provides, and to the social and technical infrastructure requirements of its population. Many theories have been advanced in reference to optimal population size for cities. These are, at best, inconclusive and a unique definition of "optimal" is probably not relevant to real policy-making decisions.

Each variable (class) has sub-classes:

A. Location[1]

i) Coastal Settlements:

Located on the Mediterranean and Red Seas. Oriented to commerce, industry, and marine-based activities of fishing, port facilities and services exploration of marine resources, water-related tourism and vacation spots.

ii) Inland Settlements:

Delta and Nile Valley. These settlements represent the active network of urban settlements and the backbone of economic activity in the country. As a system, they have the highest potential for population growth and economic development, although this potential varies between settlements.

iii) Peripheral Settlements:

These settlements are found in three locations: at the interface between the agricultural land and the desert, along the boundaries of the Delta and the Nile Valley; in the northern prairies of the Delta (essentially land reclamation); and in the eastern and western desert with economic activities based on mineral extraction, marginal agriculture and cottage industries.

B. Principal Functions

i) Administration and government:

As each settlement is usually the administrative center of a markaz, this division identifies only the National Capital and the capitals of governorates. These are settlements which have some degree of autonomy in decision-making and resource allocation.

ii) Agro-based services:

Identifies settlements which provide services necessary for agricultural production in the rural hinterland.

iii) Extractive industries:

Identifies settlements known for their substantial activity in mining, quarrying and crude oil production.

iv) Manufacturing industries:

Identifies settlements known for their substantial activity in capital, intermediate and consumer industries.

v) Business and commerce:

Identifies settlements which have substantial concentrations of professional services related to business and commercial activities, such as banking, insurance, publishing, trade representation and various professional and technical services, etc.

vi) Transportation and warehousing:

Identifies settlements which are transportation nodes, and which have substantial warehousing and bulk-breaking activities.

vii) Power generation:

Identifies settlements which are the sites of either thermal or hydroelectric power generation plants for national or local networks.

TABLE-III-1a
TYPOLOGY OF URBAN SETTLEMENTS IN EGYPT

LOCATION: Coastal

	PRINCIPAL FUNCTIONS								
	ADMINISTRATION and GOVERNMENT	AGRO-BASED SERVICES	EXTRACTIVE INDUSTRIES	MANUFACTURING INDUSTRIES	BUSINESS and COMMERCE	TRANSPORTATION and WAREHOUSING	POWER GENERATION	UNIVERSITY EDUCATION	OTHER: 1-MAJOR MEDICAL 2-TOURISM 3-PETROLEUM 4-FISHING
LARGER THAN 1,000,000	Alexandria			Alexandria	Alexandria	Alexandria	Alexandria	Alexandria	Alexandria
500,000 - 999,999									
100,000 - 499,999	Port Said Suez Ismailia		Suez Ismailia	Port Said Suez Ismailia	Port Said Suez Ismailia	Port Said Suez Ismailia	Port Said Suez Ismailia	Ismailia	Port Said (2,4) Suez (2,3,4) Ismailia (2)
50,000 - 99,999	Damietta		Edku Rashid	Damietta Edku Rashid	Damietta Rashid	Damietta			Damietta (4) Mataria (4) Edku (3,4) Rashid (2,4)
20,000 - 49 999	Marsa Matruh								Matruh (4)(2) Baltim (2)
SMALLER THAN 20,000	Ghardaka El Arish El Tor		El Tor Ataka Qusseir Safaga			Qusseir Safaga			Qusseir (4)(2) Safaga (4)(2) Ras Gharib (3) Ghardaka (4)(2) El Arish (2) El Tor (2) El Hamman (2) Salloum (4)(2) Borg El Arab (2) El Dabaa (2) Sidi Barrani(4)(2) Ras El Bar (2)

(Continued)

TABLE III-1b
TYPOLOGY OF URBAN SETTLEMENTS IN EGYPT

LOCATION: DELTA

	PRINCIPAL FUNCTIONS								
	ADMINISTRATION and GOVERNMENT	AGRO-BASED SERVICES	EXTRACTIVE INDUSTRIES	MANUFACTURING INDUSTRIES	BUSINESS and COMMERCE	TRANSPORTATION and WAREHOUSING	POWER GENERATION	UNIVERSITY EDUCATION	OTHER: 1-MAJOR MEDICAL 2-TOURISM 3-PETROLEUM 4-FISHING
LARGER THAN 1,000,000	Cairo		Cairo	Cairo	Cairo	Cairo	Cairo	Cairo	Cairo (1,2)
500,000 - 999,999									
100,000 - 499,999	Mansoura Zagazig Tanta Shebin El Kom Damanhour	Mansoura Zagazig Shoubra El Kheima Mahalla Tanta Shebin El Kom Damanhour		Mansoura Zagazig Shoubra El Kheima Mahalla Tanta Shebin El Kom Damanhour Kafr El Dawar	Mansoura Zagazig Mahalla Tanta Damanhour	Tanta Zagazig	Damanhour	Mansoura Zagazig Tanta	Mansoura (1) Zagazig (1) Tanta (1,2)
50,000 - 99,999	Benha Kafr El Sheikh	Mit Ghamr Berqas Abu Kebir Benha Qalyub Kafr El Sheikh Dessouk Zefta Menoufia		Mit Ghamr Benha Qalyub Kafr El Sheikh Dessouk	Benha Kafr El Sheikh Menoufia			Kafr El Sheikh	
20,000 - 49,999	Sinbellaween Dikirnis Talkha Sherbin Mashtoul El Souk Faqous Minia El Qamh Hehia Darb Nigm Kanater Khairia Shebin El Kanater Beila	Fowa Kafr El Zayat Samanoud Basyoun Sers El Layan Ashmoun Tela El Shohad Quweisna Mahmoudia Toukh		Talkha		Quweisna	Talkha		Kanater Khairia (2)
SMALLER THAN 20,000	Aga Ibrahimia Kafr Sakr Kaha Kafr Shukr Qallein Metoubas El Santa	Kotour El Bagour Berket El Sabel Abu Hommas Kom Hamada Shabrakheit Rahmania Itay El Baroud			Kaha				

(Continued)

571

558

TABLE III-1c
TYPOLOGY OF URBAN SETTLEMENTS IN EGYPT

LOCATION: NILE VALLEY

	PRINCIPAL FUNCTIONS								
	ADMINISTRATION and GOVERNMENT	AGRO-BASED SERVICES	EXTRACTIVE INDUSTRIES	MANUFACTURING INDUSTRIES	BUSINESS and COMMERCE	TRANSPORTATION and WAREHOUSING	POWER GENERATION	UNIVERSITY EDUCATION	OTHER: 1-MAJOR MEDICAL 2-TOURISM 3-PETROLEUM 4-FISHING
LARGER THAN 1,000,000	Giza	Giza	Giza	Giza	Giza	Giza	Giza	Giza	Giza
500,000 - 999,999									
100,000 499,999	Beni Suef Fayoum Minia Assiut Sohag Aswan	Beni Suef Fayoum Minia Assiut Sohag Aswan	Fayoum Minia Assiut Aswan	Beni Suef Fayoum Minia Assiut Sohag Aswan	Beni Suef Fayoum Minia Assiut Aswan	Assiut Aswan	Assiut Aswan	Assiut Minia	Fayoum(2) Minia(2)
50,000 - 99,999	Qena	Mallawi Ekhmim Gerga Qena Luxor	Qena	Ekhmim (Cottage) Qena	Luxor Qena	Luxor Qena		Qena	Luxor
20,000 - 49,999	Abu Qurqas Matai Dir Mawas Manfalout Abnub Abu Tig Dayrout El Quseya El Badari Tanta Tema	Hawamdiah El Badrashin Osseim Nasr Beba El Fashn Senouris Ibshiway Tamyah Atsa Samalut	Maghagha Beni Mazar Baliana Armant Esna Qous Dishna Farshout Kom Ombo Edfu	Hawamdiah Samalut Abu Qurqas Dir Mowas Tanta Armant Qous Dishna Kom Ombo Edfu					Dir Mawas(2) Baliana Kom Ombo(2) Edfu(2)
SMALLER THAN 20,000		El Ayat El Wasta Samasta Ehnassia Adqua Sahel Selim Sedfa Maragha Sakalta Naga Hamadi Abu Tisht		Naga Hamadi					

(Continued)

TABLE III-1d
TYPOLOGY OF URBAN SETTLEMENTS IN EGYPT

LOCATION: PERIPHERAL

	PRINCIPAL FUNCTIONS								
	ADMINISTRATION and GOVERNMENT	AGRO-BASED SERVICES	EXTRACTIVE INDUSTRIES	MANUFACTURING INDUSTRIES	BUSINESS and COMMERCE	TRANSPORTATION and WAREHOUSING	POWER GENERATION	UNIVERSITY EDUCATION	OTHER: 1-MAJOR MEDICAL 2-TOURISM 3-PETROLEUM 4-FISHING
LARGER THAN 1,000,000									
500,000 - 999,999									
100,000 - 499,999									
50,000 - 99,999		Belbeis	Edku	Belbeis Edku					Edku (3,4)
20,000 - 49,999		Faraskour El Khanka Sidi Salem Baltim Hosh Eissa El Ghanayem Gohena El Kharga	El Kharga Oases	Faraskour El Khanka					Faraskour (4) Manzala (4) Baltim (2)(4)
SMALLER THAN 20,000		El Zarka Kafr Saad Abu Hammad Husseinia Abu Matamir El Tel El Kebir Wahat Bahria Awlaad Touk Naqaka Nasr Mut-Siwa	Wadi Natrun	Abu El Matamir		Kantara	Abu El Matamir		Wadi Natrun(2) Fayed(2)

viii) Higher education:

Identifies settlements which are the sites of national universities or their branches.

ix) Other:

Major medical facilities — settlements with major care such as university hospitals; tourism — settlements which are noted sites of tourist activity whether for recreation or archeological interest or for national or international interest; petroleum — settlements which rely on petroleum extraction or refining as the principal economic function; fishing — settlements which rely on fishing as their major if not their sole economic activity.

Table III-1 summarizes the classification of Egypt's main urban settlements by function and population.

C. Population Size

Population size is presented as a set of arbitary groupings.

The NUPS categorization of urban settlements by population size does not attempt to reflect a differentiation based on an urban-rural continuum related to size. It should be considered only as a convenient and conventional division affording a reasonable identification for size classes, and good comparability with the international literature on the subject. Table III-2 contrasts the NUPS classes with those of two other urban analysts.

FOOTNOTES
(Section A)

1 Partially adapted from Urbanization in Arab World, Vol. 12, Urbanization in Egypt, Chapter 9, S.A. Hakim et al., Cairo, 1978.

IV. EXPANSION OF URBAN SETTLEMENTS (LANDSAT ANALYSIS)

The Ministry of Development requested the consultant to undertake a LANDSAT analysis of the Nile River Valley and the Delta in order to determine urban expansion into agricultural areas and the directions of growth of major cities. The results of this analysis are presented in this section including the governorate and city LANDSAT maps which follow this text.

TABLE-III-2
EXAMPLE OF SETTLEMENT SIZE AND TYPE CLASSIFICATION

NUPS - 1981

Size	Type
Larger than 1,000,000	Metropolitan Area
500,000 - 999,999	Major City
100,000 - 499,999	Large City
50,000 - 99,999	Small City
20,000 - 49,999	Large Town
Smaller than 20,000	Small Town

J. Abu Lughod -- 1965

Size	Type
Larger than 1,000,000	Primate
100,000 - 299,999	Large City
50,000 - 199,999	City*
30,000 - 49,999	Large Town*
20,000 - 29,999	Small Town

* Category of Smaller Cities

S. Abdel Hakim, et. al. -- 1978

Size (No Type)

Larger than 1,000,000
200,000 - 999,999
100,000 - 199,999
40,000 - 99,999
20,000 - 39,999
Smaller than 20,000

It should be noted that this use of LANDSAT for such a large geographic area for purposes of urban land use change detection turned out to be a new, and therefore, experimental application of LANDSAT imagery. The consultant awarded the subcontract to the University of New Mexico's Technology Application Center, Remote Sensing Division, which conducted the analysis.

Overall, the results of the analysis were useful in quantifying the rates and direction of urbanization in Egypt by governorate and city, but several problems were encountered because of the experimental nature of the work which limited its accuracy in all cases. Some of these problems were caused by the methodology which was utilized and the accuracy of the maps available. These problems are discussed below and the results presented.

A. The LANDSAT System

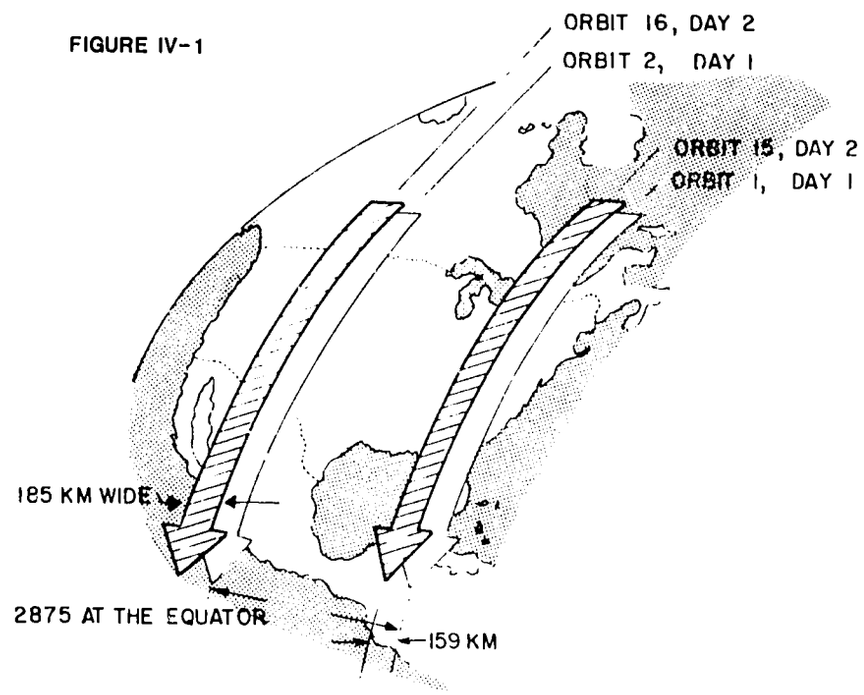
The concept behind the design of the LANDSAT satellites is to provide high resolution multispectral data of the earth's surface on a global scale and at regular intervals.

The satellites circle the earth in polar orbits every 103 minutes at an altitude of 920 kilometers (570 miles). Each makes 14 orbits per day and passes over the entire earth's surface every 18 days. The orbit is oriented so that each day's orbital swath falls adjacent to and west of the previous day's image. (Figure IV-1)

The orbits are configured so that each satellite crosses the equator at the same local time every orbit, approximately 9:30 a.m.

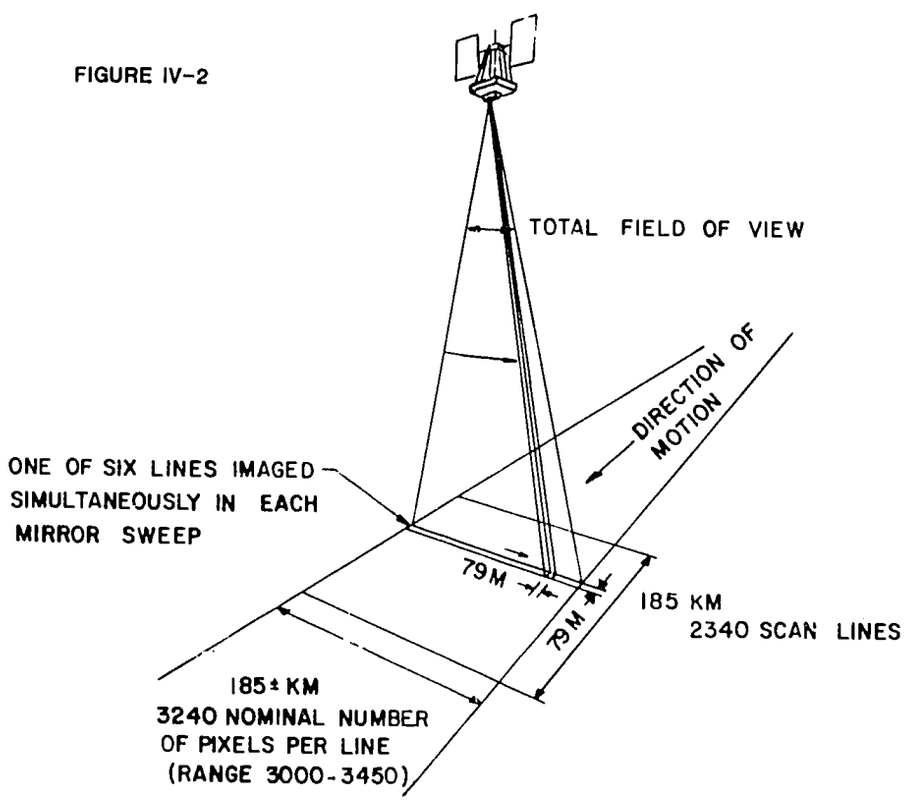
The multispectral scanner (MSS) on LANDSAT has provided the bulk of the images used thus far for earth resource analysis. The MSS imagery is recorded on magnetic tape and transmitted to the ground in digital form. An oscillating mirror on the MSS sweeps across the terrain from west to east at a right angle to the orbital path (Figure IV-2) and records data only during the eastbound sweep. The 185 kilometer long scan lines form a continuous strip of imagery that is subdivided into 2,340 segments to

FIGURE IV-1



LANDSAT ORBITAL COVERAGE

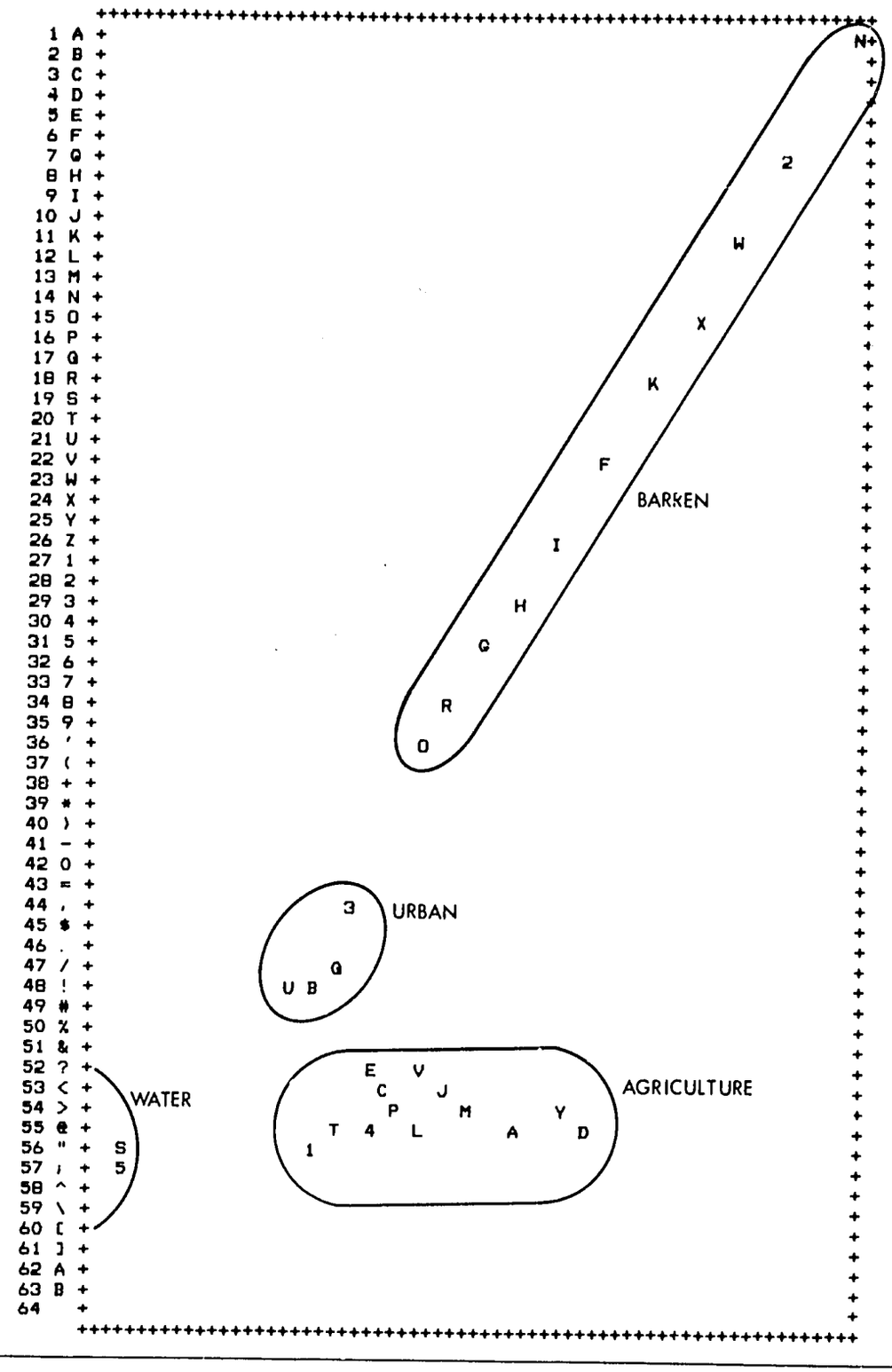
FIGURE IV-2



LANDSAT MSS OPERATING CONFIGURATION

FIGURE IV-3

TWO CHANNEL PLOT FOR ASSIUT GOVERNORATE, 1978



form individual LANDSAT scenes of 185 x 185 km. Each LANDSAT data cell or pixel (picture element) covers approximately 60 x 60 meters in area on earth. Data for each pixel are recorded on tape in four spectral bands: green, red, and two infrared. These bands are labeled 4, 5, 6 and 7, respectively.

B. The Methodology Used for the Analysis

In support of planning work performed by the National Urban Policy Study, the Technology Application Center's Remote Sensing Division performed computer classifications of LANDSAT satellite data and related classification changes for the Nile River Valley and Delta.

These classifications were performed for each of 21 Egyptian governorates from 1972 and 1978 data. Nine LANDSAT scenes were classified for each of the two dates. Land cover was classified into one of four categories: urban, barren, agriculture (vegetated), and water. The number of hectares were provided for each class in each governorate. Several cities within each governorate were also classified and areas by class provided. All classifications of governorates were printed at 1:100,000 scale and 1:250,000 scale and classified cities were printed at 1:50,000 scale. The resulting products were maps and tables of all four classes by governorate or city for 1972 and 1978 and the resulting change of urban, barren, and agriculture between the two dates. All work was performed at the Technology Application Center on a digital image processing system entirely with LANDSAT data received and processed either from a United States or Italian receiving station.

1. Raw Data Analysis

The first step was to discern exactly which 1972 LANDSAT scene or scenes were required to cover a given governorate. A raw data file was then constructed for that area. For those governorate boundaries formed by rivers it was quite easy to define the limits of the raw data file. For non-river boundaries, such as that between the Gharbia and Menoufia Governorates, the limits of the raw data file were much more difficult to determine.

2. Training Data Collection

In order to classify the raw data it was necessary for the computer to search through the file for spectrally homogeneous blocks of data with which to train itself. For this project it was felt that approximately 30 classes would be a large enough number to adequately classify the four general land use/land cover categories, at the same time being small enough to handle efficiently.

The search program begins by examining 3 x 3 blocks of pixels looking for spectrally homogeneous blocks. As these blocks are found, a series of statistics are compiled on them such as means, standard deviation, and coefficients of variations.

Due to the large amount of raw data in each governorate file, it was impossible for the computer to create a statistics file compiled from all four LANDSAT channels. It could, however, compile statistics from two channels. Therefore, the search process was conducted concentrating on the visible green (band 5) and an infrared (band 7) channel of the LANDSAT data.

When the entire raw data file had been searched and statistics on the classes obtained, the computer operator applied a clustering algorithm to the training data. This algorithm clustered together those class statistics which were the most similar. By adjusting several parameters and rerunning the algorithm several times, the operator modified the clustering until the desired number of 30 classes resulted.

The final step in the training data collection process was the generation of a two channel plot. Figure IV-3, for example, shows the actual two channel plot used for the Assuit Governorate in 1978. The band 5 value for each class is plotted on the Y-axis and band 7 is plotted on the X-axis. Each letter and number on the plot represents the mean of one of the classes for that date. It is evident that the classes in this plot are clustered into four distinct groups. The whole purpose of the plot is to provide the operator with a preliminary name for each class depending on where the class is located on the plot. For example, bare soil always occupies the diagonal at the upper right and water is always in the lower left corner. Urban and vegetation classes are usually found in the lower center area of the plot. It should be pointed out that most two-channel plots in this project did not produce as clean a cluster pattern as did this one for Assuit 1978.

3. Image Classification

When the training data process had been completed, the raw data file was classified using a maximum likelihood unsupervised classifier. The term "maximum likelihood" means that the computer compares the spectral values of each pixel in the raw data file to each of the statistically-defined classes in the statistics file. The computer then calculates the probability that a pixel belongs to each class in the statistics file and assigns the pixel to the class to which it is statistically closest. This calculation is performed for every pixel in the raw data file. When the classification is completed, it can be displayed on the television screen and analyzed. Each class can be highlighted in different colors to reveal the distribution pattern of the pixels.

Once each of the classes had been identified as urban, barren, agriculture, or water, the operator ran a program which reduced the 30 or so classes down to the final 4. The resulting four class files were then placed on the tape for storage. At a later date, the entire process of raw data analysis, training data collection, and image classification was performed on the 1978 data for the same governorate.

4. Geographic Referencing and Change Detection

In order to perform an accurate change detection, the two classifications for each governorate had to be digitally registered enabling the classification for one date to overlay the classification of the second date. To do this, the two classifications had to be geographically referenced to a base map. The process

is generally called "georef" for short. The georef process was begun by locating an Army Map Service 1:500,000 map which contained the governorate under study. The map was taped to the digitizing tablet and a step called initialization was performed. The UTM coordinates for three known points were typed into the computer. With these three known points, the computer should be able to precisely calculate the UTM coordinates of any other points that are to be digitized. At this point, several known points were digitized in order to check on the accuracy of the initialization. It was decided that an error of 100 meters or less in both the east-west and north-south directions was acceptable. An error greater than 100 meters in either direction was considered unacceptable and the map would then be reinitialized. In the case of the governorates in this project, all initializations were under 100 meters and some were as little as 25 meters. Considering the map scale of 1:500,000, these accuracies should be considered excellent.

After initializing, it was necessary to identify features which could be found on the base map and on both raw data files for each governorate. These features, called control points, usually consisted of road intersections, angles in canals, bridges, and sometimes natural features such as tips of islands in the Nile River.

Once a feature had been selected as a control point, its UTM coordinates were obtained from the map digitizer. The end result of this process was a list of points for each of the two dates of LANDSAT imagery, each point having a pair of UTM and LANDSAT coordinates. As many as 35 and as few of 6 points were found for selected governorates.

The end result of the above steps was two equations; one to georef the 1972 data and one to georef the 1978 data. If features on the classifications were displaced more than a few pixels, the georef files were rejected and the control point process was repeated. If the features were only a few pixels off or less, the files were accepted. Due to the small map scale, it was known that 100 percent accuracy could not be obtained in most cases.

TABLE IV-1

GOVERNORATES AND CITIES FOR WHICH LANDSAT ANALYSIS WAS COMPLETED FOR 1972 AND 1978 INDICATING THE MONTHS OF THE LANDSAT SCENES

GOVERNORATES	1972	1978	CITIES	1972	1978
1. Cairo	August	May	Cairo	August	May
2. Alexandria	September	July	Alexandria	September	July
3. Port Said	January (73)	May	Port Said	January (73)	May
4. Ismailia	October	May	Ismailia	October	May
5. Suez	October	May	Suez	October	May
6. Qalyubia	August	May	Shoubra El Kheima Benha Qalyub	August August August	May May May
7. Sharkia	August October	May May	Zagazig Belbeis	October August	May May
8. Dakahlia	August	July	Mansoura Mataria	August August	July July
9. Damietta	August	July	Damietta	August	July
10. Menoufia	August	May	Shebin El Kom	August	May
11. Gharbia	August	May	Tanta El Mahalla	August August	May May May
12. Kafr El Shiekh	August	July	Kafr El Sheikh	August	July
13. Beheira	September	July	Damanhour	September	July
14. Giza	August	May	Giza	August	May
15. Fayoum	January (73)	July	Fayoum	January (73)	July
16. Beni Suef	January (73)	July	Beni Suef	January (73)	July
17. Minia	January (73)	July	Minia Mallawi	January (73) January (73)	July July
18. Assiut	November	August	Assiut	November	August
19. Sohag	November	August	Sohag	November	August
20. Qena	November	September	Qena	November	September
21. Aswan	November	November	Aswan	November	November

SOURCE: NUPS.

Once the overlay accuracy of the two classifications was verified, the boundary line of the governorate was digitized. The computer then laid this digitized line over each classification and eliminated all extraneous data outside of the line.

The change detection was performed using a program which compares the class name of each pixel in 1972 with the same pixel in 1978 and keeps track of those pixels which stayed the same and those which changed. The only classes which were shown in the final change product were the changes of agriculture to urban and bare to urban. Hectarages were then obtained automatically from the computer which counted the pixels in each class for each date and transformed the areas into hectares.

The final step for each governorate was to print the two classifications and the change detection at scales of 1:100,000 and 1:250,000. Selected cities were enlarged from the three files and printed at a scale of 1:50,000. Hectarages were also generated for the city printouts.

TABLE IV-2

SUMMARY OF LANDSAT DISTRIBUTION DATA, BY GOVERNORATE, 1972-1978

GOVERNORATE	URBAN (Ha) (LANDSAT ONLY)			WATER (Ha) (LANDSAT ONLY)			AGRICULTURE (Ha) (LANDSAT ONLY)			BARREN (Ha) (LANDSAT ONLY)			TOTAL		Reliability of LANDSAT Data 2/				Comments on Boundary Definitions
	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	1972	1978	Change 1/ 1972-1978	High	Medium	Low	
Cairo	14,929	17,905	2,976	996	996	--	5,953	5,308	(645)	33,322	30,991	(2,331)	55,200	55,200	-	x	-	-	West and south desert areas excluded.
Giza	8,786	11,364	2,578	n.a.	n.a.	--	74,910	72,261	(2,649)	3,837	3,725	(112)	87,533	87,350	(183)	x	-	-	West and south desert areas excluded.
Qalyubia	6,712	7,988	1,276	1,850	1,429	(421)	83,900	83,639	(261)	2,250	1,652	(598)	94,712	94,712	-	x	-	-	Correct.
Alexandria	6,375	8,273	1,898	21,186	18,954	(2,232)	13,043	14,083	1,040	4,999	4,294	(705)	45,603	45,604	1	-	x	-	Includes part of Dakahlia, but excludes Ameriya.
Suez	1,283	1,981	698	52,790	52,110	(680)	7,859	8,095	236	7,838	7,584	(254)	69,770	69,770	-	-	-	x	West and south desert areas excluded. Includes sea as water.
Port Said	1,993	2,058	65	8,882	9,259	377	128	148	20	2,828	2,366	(462)	13,831	13,831	-	-	x	-	Includes sea as water.
Ismailia	3,151	4,729	1,578	191,606	189,663	(1,943)	27,680	29,635	1,955	30,395	28,805	(1,590)	252,832	252,832	-	x	-	-	Includes parts of Sharkia Governorate as west and south.
Menoufia	7,606	10,280	2,674	1,744	2,119	375	145,811	143,501	(2,310)	1,617	877	(740)	156,778	156,777	(1)	x(1972)	x(1978)	-	Correct.
Beheira	18,761	18,799	38	25,853	26,060	207	365,323	383,866	18,543	124,954	106,166	(18,788)	534,891	534,891	-	x	-	-	West and south desert areas excluded.
Kafr El Sheikh	6,365	8,413	2,048	100,327	90,631	(9,696)	220,259	242,950	22,691	90,574	75,531	(15,043)	417,525	417,525	-	x	-	-	Includes sea as water.
Gharbia	7,651	9,594	1,943	180	180	--	184,779	182,820	(1,959)	1,642	1,658	16	194,252	194,252	-	x	-	-	Correct.
Dakahlia	12,618	15,703	3,085	43,981	36,259	(7,722)	305,584	318,023	12,439	53,473	45,672	(7,801)	415,656	425,657	(1)	x	-	-	Includes sea area as water.
Damietta	2,432	3,173	741	22,401	15,611	(6,790)	44,477	50,606	6,129	42,045	41,965	(80)	111,355	111,355	-	x	-	-	Includes sea as water.
Sharkia	6,981	8,384	1,403	40,050	30,164	(9,886)	325,808	325,312	(496)	106,241	111,220	8,979	475,080	475,080	-	x(1978)	x(1972)	-	Includes water as barren.
Fayoum	6,123	6,583	460	24,580	27,698	3,118	159,111	144,615	(5,496)	152,267	154,185	1,918	333,081	333,081	-	-	x(1973)	x(1978)	Includes excessive desert area.
Beni Suef	7,161	7,676	606	71,805	70,585	(1,220)	114,280	114,940	660	2,909	2,863	(46)	196,155	196,155	-	x(1978)	x(1973)	-	Includes excessive desert area.
Minia	1,609	2,091	482	6,686	6,587	(99)	200,370	185,397	(14,973)	244,886	198,774	(46,112)	453,551	392,849	(60,702)	x(1973)	-	x(1978)	Includes excessive desert area.
Assiut	8,563	13,250	4,687	5,696	6,347	651	142,234	132,790	(9,444)	296,553	271,102	(25,451)	453,046	423,489	(29,557)	x(1972)	-	x(1978)	Includes excessive desert area.
Sohag	5,945	9,492	3,547	6,667	7,213	546	141,271	101,178	(40,093)	180,780	118,852	(61,928)	334,663	236,735	(97,928)	x(1972)	-	x(1978)	Includes excessive desert area.
Qena	7,659	8,717	1,058	11,827	11,437	(390)	152,633	160,883	8,250	395,015	386,097	(8,918)	567,134	567,134	-	-	-	x	Includes excessive desert area.
Aswan	1,909	3,124	1,215	9,961	6,869	(3,092)	46,128	39,522	(6,606)	463,894	293,088	(170,806)	521,892	342,603	(179,289)	-	x(1972)	x(1978)	Includes excessive desert area.
TOTAL	144,612	179,668	35,056	649,068	610,171	(38,897)	2,752,541	2,739,572	(12,969)	2,238,319	1,887,467	(350,852)	5,784,540	5,416,878	(367,662)	-	-	-	

1/ Changes in total area by governorate for 1972-1978 are due to incomplete LANDSAT data.

2/ "High" means most reliable data, etc. Unless otherwise stated, designation refers to both years 1972 and 1978.

SOURCE: NUPS Analysis of LANDSAT Data.

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TABLE IV-3
DATA BY URBAN SETTLEMENT, 1972-1978 1/
SUMMARY OF LANDSAT LAND DISTRIBUTION

SETTLEMENT	URBAN (Ha)			WATER (Ha)			AGRICULTURE (Ha)			BARREN (Ha)			TOTAL (Ha)			RELIABILITY OF LANDSAT DATA 2/		
	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	1972	1978	Change 1972-1978	High	Medium	Low
CAIRO	11,249	13,531	2,282	508	508	--	2,382	2,290	(92)	16,133	13,944	(2,189)	30,272	30,272	--	x	-	-
ALEXANDRIA	6,375	8,273	1,898	21,186	18,954	(2,232)	13,043	14,083	1,040	4,999	4,294	(705)	45,603	45,603	--	-	x	-
PORT SAID	1,993	2,058	65	8,882	9,259	377	128	148	20	2,828	2,366	(462)	13,831	13,831	--	-	x	-
ISMAILIA	422	799	377	3,352	3,248	(104)	1,323	1,030	(293)	717	737	20	5,814	5,814	--	x	-	-
SUEZ	596	959	363	4,108	4,135	27	1,167	832	(335)	1,796	1,741	(55)	7,667	7,667	--	-	x	-
SHOUBRA EL KHEIMA	345	1,123	278	9	14	5	2,556	2,299	(257)	62	35	(27)	3,472	3,471	--	x	-	-
BENHA	513	624	111	159	110	(49)	2,416	2,366	(50)	17	5	(12)	3,105	3,105	--	x	-	-
QALYUB	209	246	37	--	--	--	788	749	(39)	3	5	2	1,000	1,000	--	x	-	-
ZAGAZIG	557	853	296	--	--	--	4,424	4,132	(292)	87	83	(4)	5,068	5,068	--	x	-	-
BELBEIS	181	191	10	--	--	--	761	756	(5)	87	82	(5)	1,029	1,029	--	-	x	-
MANSOURA	1,316	1,591	275	153	134	(19)	5,050	4,796	(254)	69	67	(2)	6,588	6,589	--	x	-	-
MATARIA	214	319	105	229	229	--	229	363	134	504	265	(239)	1,176	1,175	--	x(1978)	x(1972)	-
DAMIETTA	485	637	152	24	19	(5)	1,029	878	(151)	65	69	4	1,603	1,603	--	x(1972)	x(1978)	-
SHEBIN EL KOM	391	633	242	11	22	11	2,237	1,989	(248)	28	24	(4)	2,667	2,668	--	x(1972)	x(1978)	-
TANTA	1,051	1,290	239	--	--	--	4,228	3,987	(241)	17	19	2	5,296	5,296	--	x	-	-
EL MAHALLA	975	1,098	123	--	--	--	2,838	2,713	(125)	40	42	2	3,853	3,853	--	x	-	-
KAFR EL SHEIKH	343	441	98	--	--	--	864	766	(98)	--	--	--	1,207	1,207	--	x	-	-
DAMANHOUR	485	509	24	--	--	--	1,278	1,269	(9)	66	51	(15)	1,829	1,829	--	x	-	-
GIZA	3,411	4,399	988	808	806	(2)	8,389	7,414	(975)	89	78	(11)	12,697	12,697	--	x	-	-
FAYOUM	314	376	62	--	--	--	1,407	1,326	(81)	71	90	19	1,792	1,792	--	x(1978)	x(1973)	-
BENI SUEF	333	353	20	32	42	10	1,157	1,128	(29)	123	122	(1)	1,645	1,645	--	x(1978)	x(1973)	-
MINIA	634	905	271	673	756	83	12,048	11,809	(239)	1,392	1,278	(114)	14,747	14,743	--	x(1978)	x(1973)	-
MALLAWI	165	212	47	57	67	10	1,239	1,177	(62)	3	8	5	1,464	1,464	--	-	-	x
ASSUIT	232	855	623	374	392	18	2,646	1,921	(725)	108	191	83	3,360	3,359	--	x(1978)	-	x(1972)
ASWAN	143	156	13	235	224	(11)	130	237	107	1,590	1,481	(109)	2,098	2,098	--	x	-	-
TOTAL	33,432	42,431	8,999	40,800	38,919	(1,881)	73,757	70,458	(3,299)	30,894	27,077	(3,817)	178,883	178,885	--	--	-	-

1/ "Total" area of urban settlement refers to an arbitrary boundary which includes the urban centers and a part of its rural hinterland.

2/ "High" means most reliable data, etc. Unless otherwise stated, designation refers to both years 1972 and 1978.

SOURCE: NUPS Analysis of LANDSAT Data.

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5. Results

The classification of land cover in the Delta and Nile River Valley has been completed and the results can be found in the following section. Twenty-one governorates and 25 cities have been classified for two dates and the change of agriculture to urban and barren to urban has been mapped. The area in hectares for each class and change are also provided for the following list of classified governorates and cities, in addition to the "timing" of LANDSAT coverage. (Table IV-1)

C. Analysis of LANDSAT Accuracy

Subsequent NUPS analyses of LANDSAT data have shown that although most of the data is judged reliable a number of factors have influenced the LANDSAT results. These include:

i) Difficulty in distinguishing between local environment, particularly in desert and sandbar areas, and urban development due to similarities in materials. This problem was observed to have occurred in Dakhalia (west of Alexandria), in Port Said and Suez. It also occurred in northern coastal areas off the governorates of Kafr El Sheikh, Damietta, and Dakahlia.

ii) Difficulty in distinguishing between fallow areas, barren areas and urban development. 1972 data for Assuit Governorate, for example, are unreliable because the LANDSAT coverage coincided with a cropped or fallow season. It is, thus, important that LANDSAT coverage be used only during optimal periods before harvesting has occurred and when atmospheric interference is minimal (i.e., the Khamseen period would also interfere with LANDSAT results).

iii) Difficulty in distinguishing between agricultural areas and lake surface or submerged vegetation. Data, for example, for governorates with large bodies of water (Edku, Maryut, Burullus and Manzala) do not accurately reflect actual increases in arable land although land reclamation and drainage of the lake has been underway for sometime. Differences in agricultural "intensity" are obvious from LANDSAT photos with 100 percent of data denoting differences in soil fertility. Thus, it would be possible to classify vegetation according to type and identify those less fertile areas where urban expansion is preferable.

iv) Difficulty in distinguishing between disturbed areas where conversion to urban uses has begun but is not yet complete. In Cairo Governorate, for example, a good deal of disturbed areas to the east (Nasr City and Suez Road) were identified. However, as these areas are not actually built-up yet or at low density, they tend to exaggerate growth trends to the east. Nevertheless, as disturbed urban areas are indicative of existing trends, this is not perceived as an error.

v) Difficulty in distinguishing between lakes (water areas) and depressions occurred in Fayoum Governorate. In addition, sections in the eastern desert read as a water area.

vi) Difficulty in distinguishing between agricultural areas and disturbed desert occurred in the Suez Governorate. A large area on the eastern desert plateau southwest of Suez, for example, appeared as agriculture.

For future reference regarding the use of LANDSAT data, the following lessons from this innovative experiment should also be kept in mind:

i) In the future, LANDSAT data should be collected only at those optimum times when atmospheric conditions are best and cropping or harvesting is not going on.

ii) In comparing LANDSAT data with map data or census data, for example, it is important to note that LANDSAT boundaries as indicated on the printouts should be used as a base. Though an attempt was made to identify accurate governorate boundaries, particularly in the Delta or among contiguous governorates, boundary areas are often in error. Also, Nile Valley Governorates or those including large desert areas were not entirely covered. Finally, complete LANDSAT coverage was not possible for the Governorate of Aswan, Sohag, Assuit and Minia, even though several sets of data were merged. Thus, areas regarding change were given only within the area for which 1972 and 1978 coverage was available.

iii) When comparing LANDSAT to map data it is important to use the same types of classification. In Cairo Governorate, for example, large military areas and parts of airports which are relatively undisturbed will be classified by LANDSAT as "barren". However, a mapping classification may designate these as non-vacant "service" areas. Nevertheless, if the nature of the LANDSAT interpretation is kept in mind, very close correlation between mapping and LANDSAT data can be obtained. Despite differences in boundaries employed and in interpretation of land use classification, NUPS has found, for example, that when the 1978 LANDSAT printout for Tanta was enlarged to correspond to the map of the city, new development areas corresponded very closely to those identified by LANDSAT. This facilitated creation of an up-to-date map of the city for planning purposes. As a rule, the settlement data is viewed as reliable.

iv) Refinement of spectral analysis in Egypt could lead to differentiation between vegetation and basic indications regarding soil fertility. LANDSAT data for parts of Alexandria and Beheira Governorates, for example, indicate a large "barren" area south of Lake Maryut. This area has actually been reclaimed for agricultural purposes, although crop growth is

decidedly poor. For this reason, NUPS selected this area as a long term potential urban development area to accommodate urbanization which might otherwise occur in more fertile agricultural areas.

As a final note, NUPS has concluded that the LANDSAT results are very indicative of growth trends at both the settlement and the governorate levels. Some of the data, however, should be used with care due to the classification difficulties described previously. In order to assist the reader, the following tables (Tables IV-2 and 3) provide a preliminary assessment of LANDSAT data and reliability.

Generally, most of the settlement and governorate data for the Delta is judged reliable, while that for northern and, particularly southern Upper Egypt, is not. Finally, the lack of reliable data for Upper Egypt is primarily due to the timing of the coverage — at times when harvesting was going on. This fact was unknown to the remote sensing consultants.

D. Results and Conclusions for LANDSAT Data

The consultant's two main purposes in undertaking the present LANDSAT analysis were to determine the amount of agricultural land being converted to non-agricultural uses and to detect growth trends of Egypt's main urban centers. Tables IV-2 and 3 summarize the changes in the distribution of broad land use categories by governorate and major urban settlement over the peirod 1972-1978 (the years for which LANDSAT data were available). For future LANDSAT analyses, it would be interesting to indicate the composition of urban growth by governorate and urban center broken down by land use category (i.e., water, agriculture and barren). This information was not requested of the present analysis; generating such data at this later date would have required redesign of the computer program which processed the raw LANDSAT data.

The "agricultural" column from Table IV-2 notes that there was a net loss of agricultural land over the 1972-1978 period of almost 13,000 hectares or 31,000 feddans. This net loss takes into consideration the amount of land reclaimed by government programs. Based on Weidemann's "The Agricultural Resource Base: Status and Expectations,"[1] it is estimated that approximately 100,000 hectares (238,000 feddans) were reclaimed over the six-year period. Subtracting this figure from the previously-mentioned net loss of 13,000 hectares gives a total loss of agricultural land of approximately 113,000 hectares. On an average yearly basis, this loss of agricultural land ranges from approximately 15,000 to 20,000 hectares per year.

Table IV-2 points out that loss of agricultural land is not simply a problem of Cairo, Alexandria and the rest of the Delta, but rather is common throughout the entire country. The Upper Egypt governorates of Minia, Assuit, Sohag and Aswan all experienced substantial net losses of agricultural land over the period.

Furthermore, loss of agricultural land is not only occurring on the periphery of the country's main urban centers. For example, the entries for Gharbia Governorate and its main urban settlements of Tanta and El Mahalla (see Tables IV-2 and 3) listed under the agricultural column highlight this point. Over the period 1972-1978, Gharbia lost over 1,950 hectares of agricultural land. The two main centers of Tanta and El Mahalla account for only 366 hectares or 19 percent of this loss. The remainder of the agricultural loss can be attributed to severe growth pressures in the governorate's smaller urban centers (i.e., Kafr El Zayat and Zefta) and rural agricultural villages.

Annex 1 of the Tanta Illustrative Development Project details how the LANDSAT data was used, in conjunction with CAPMAS census information and existing mapping, to detect and analyze the physical growth trends of a major urban settlement. The results are summarized in this section.

Superimposing the city's boundary on the LANDSAT printout maps, it was possible to calculate the amount of agricultural land remaining within the city boundaries, the rate at which agricultural land was converted to urban uses over the six-year period, where that growth has occurred and who were the main users (through field checks). As of 1978, Tanta had 493 hectares of agricultural land remaining within the city's boundaries. The urban area grew at an annual rate of 3.67 percent over the period 1972-1978. Agricultural land actually converted to urban uses totalled almost 190 hectares. This figure agrees quite closely with the LANDSAT estimates for agricultural conversion for Tanta and a part of its agricultural hinterland (241 hectares). The above-mentioned analysis determined the city's directional growth for 1972-1978 and served as the main underpinning for the Physical Concept Plan recommendations contained in the Illustrative Development Project.

The maps on the following pages were produced for PADCO by the Technology Application Center at the University of New Mexico. The purpose of presenting the maps is to show the expansion of 25 selected urban areas onto agricultureal land. The maps contrast urban areas in 1972 (and a few in 1973) with those same areas in 1978.

FOOTNOTE
(Section D)

1 Weidemann in the NUPS Working Paper, The Agricultural Resource Base: Status and Expectations, December 1980, mentions that between 1967 and 1978 the only major new land reclamation project initiated was a 300,000 feddan (126,050 hectare) area west of Nubariya (western Delta). Without detailing how much of this project was actually implemented, he lists in tabular form that 812.3 thousand and 21.0 thousand feddans were reclaimed, respectively, between 1960-1970 and 1970-1975. The yearly amount of reclaimed land to 1978 was estimated on the basis of the average amount reclaimed between 1960 and 1970.

GØVERNØRATE- CAIRØ

KEY

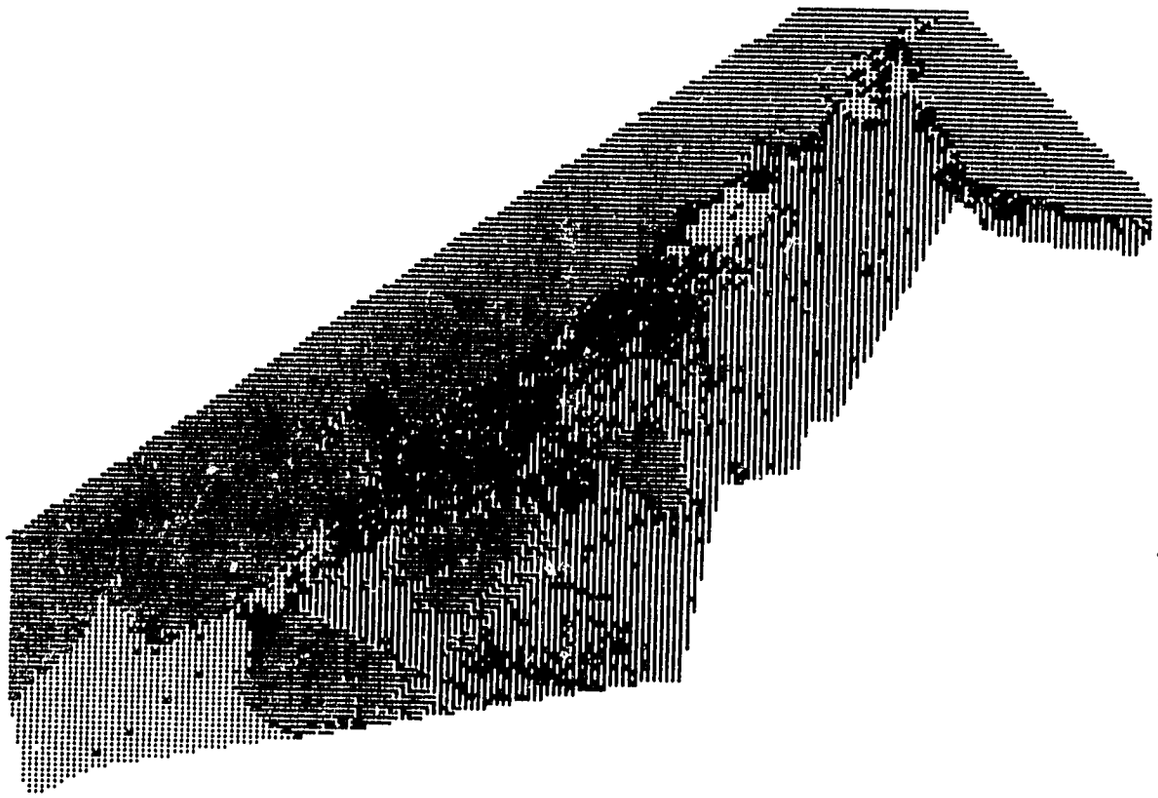
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 250,000

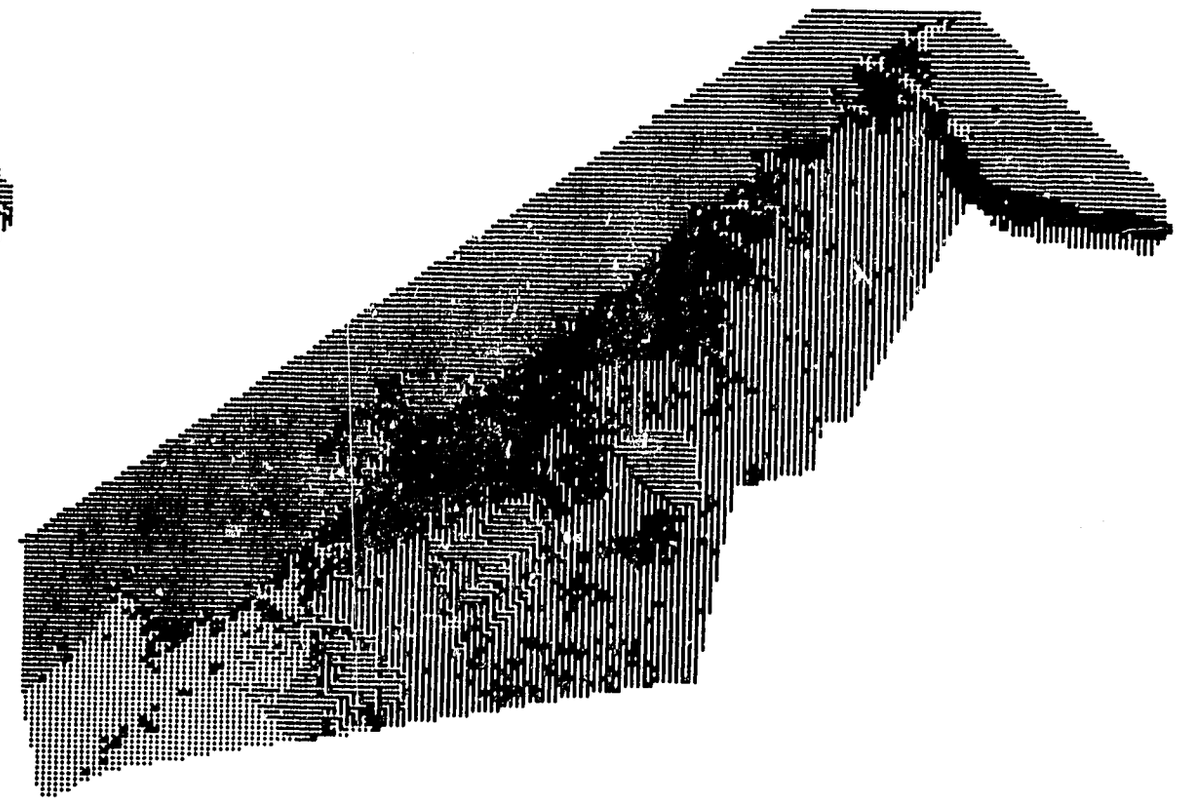
URBAN EXPANSIØN

KEY

- URBAN
- ØTHER



1972



1978

GØVERNØRATE- ALEXANDRIA

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 250,000

URBAN EXPANSIØN

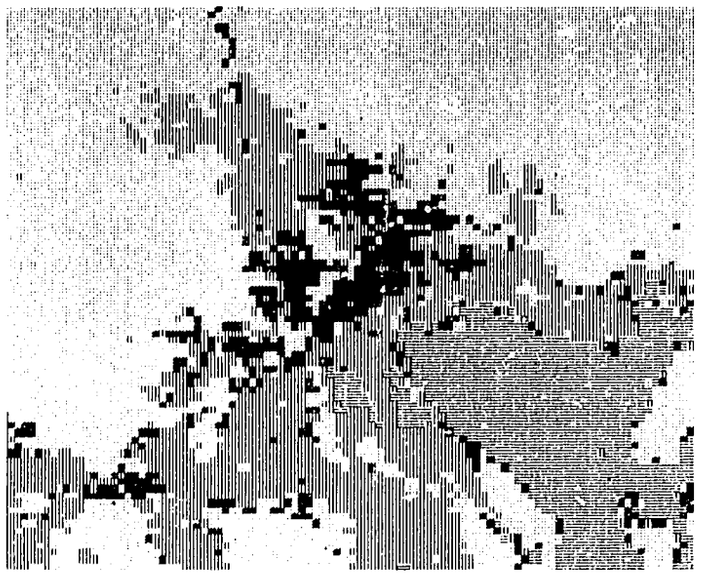
KEY

- URBAN
- ØTHER

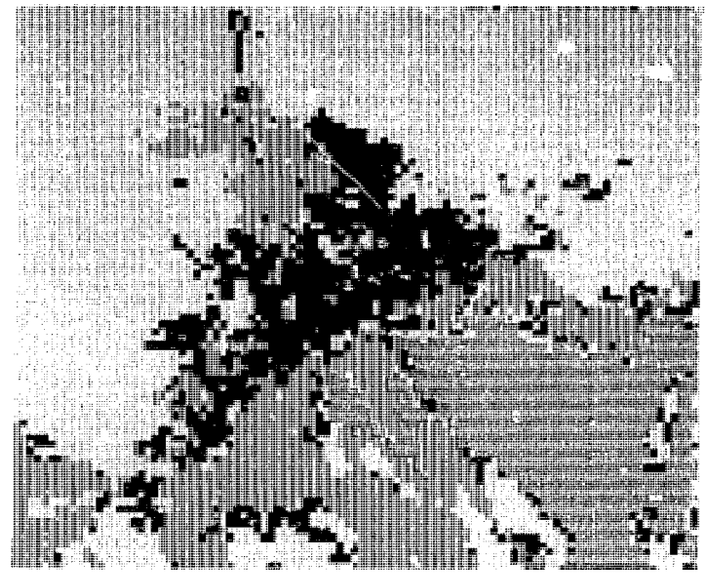
1972/78

611

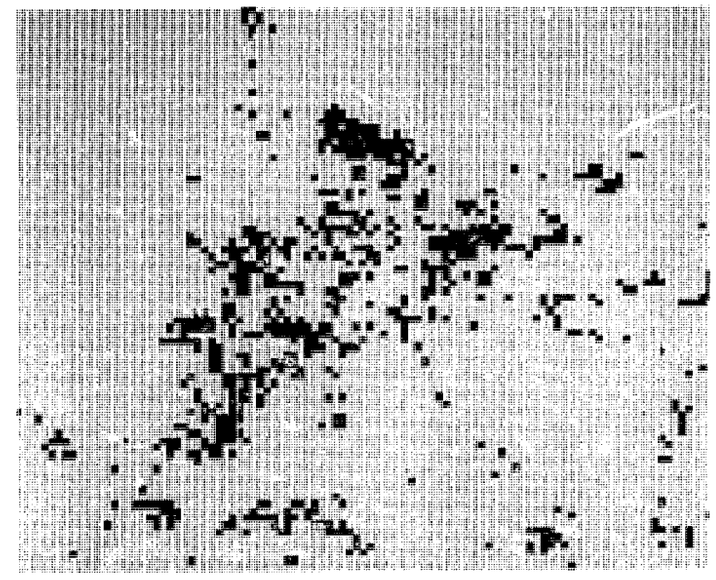
612



1972



1978



1972/78

ISMAELIA

GØVERNØRATE- ISMAELIA

KEY

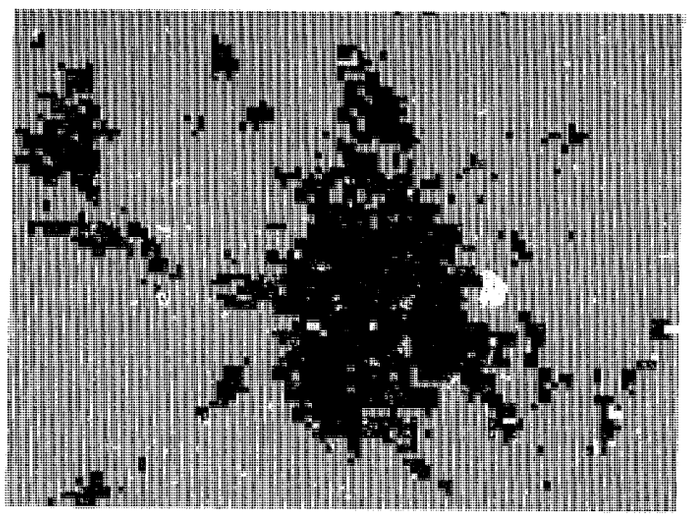
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 100,000

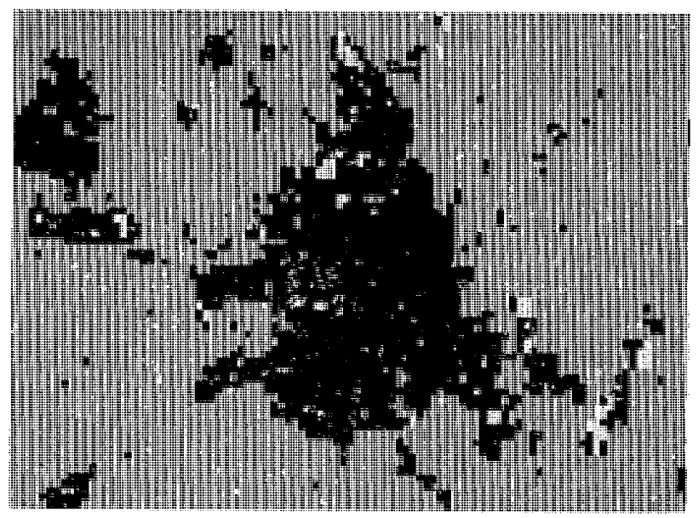
URBAN EXPANSIØN

KEY

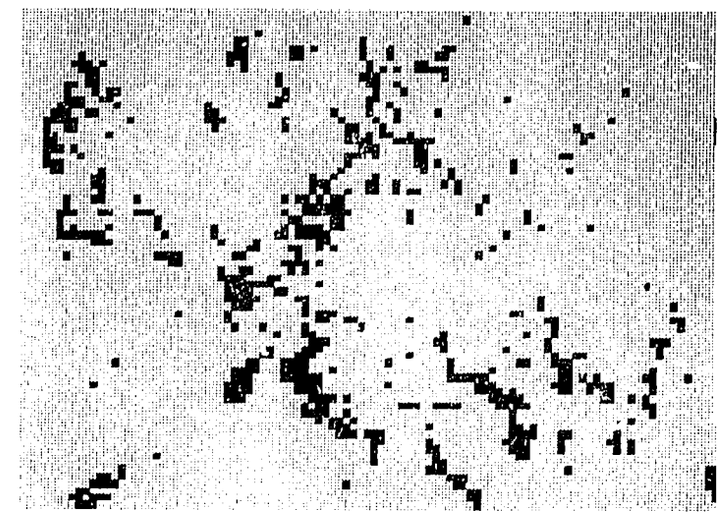
- URBAN
- ØTHER



1972



1978



1972/78

TANTA
GØVERNØRATE- GHARBIA

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

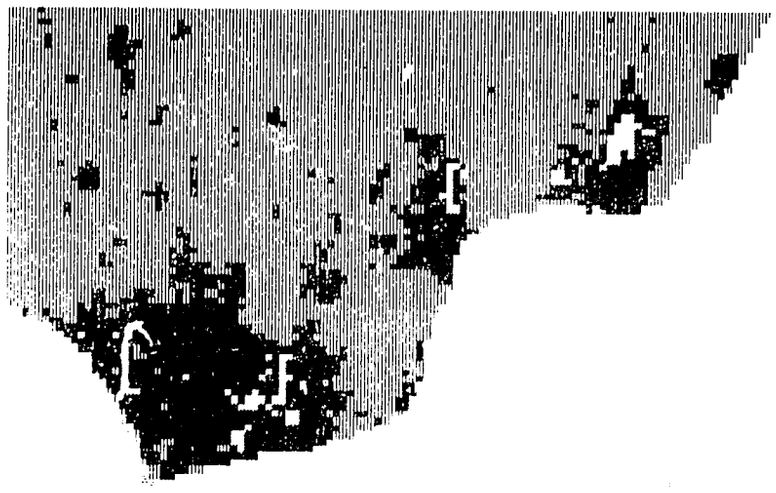
SCALE- 1 TØ 100,000

URBAN EXPANSIØN

KEY
- URBAN
- ØTHER

615

616



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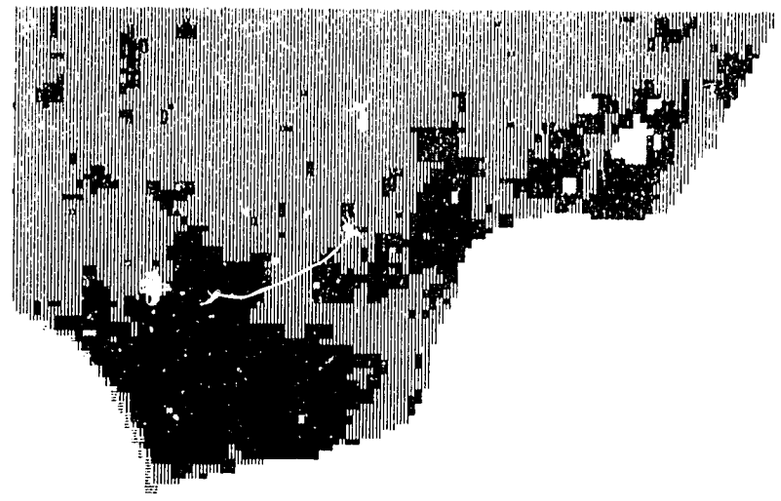


1978

1972/78

SHØUBRA EL KHEIMA

GØVERNØRATE KALYØUBIA

KEY

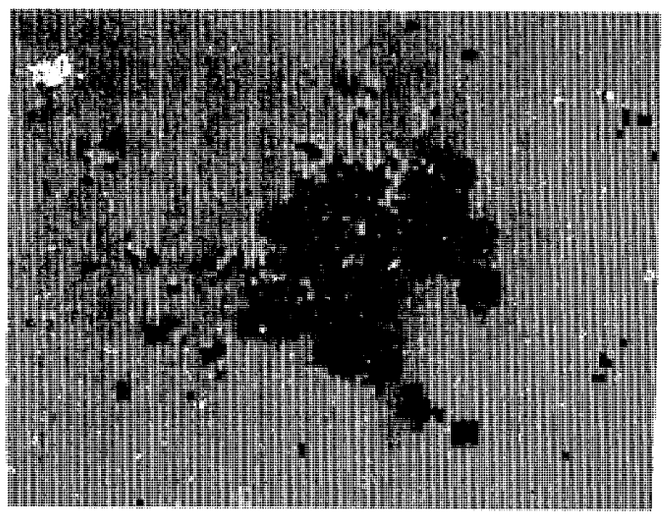
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 100,000

URBAN EXPANSIØN

KEY

- URBAN
- ØTHER



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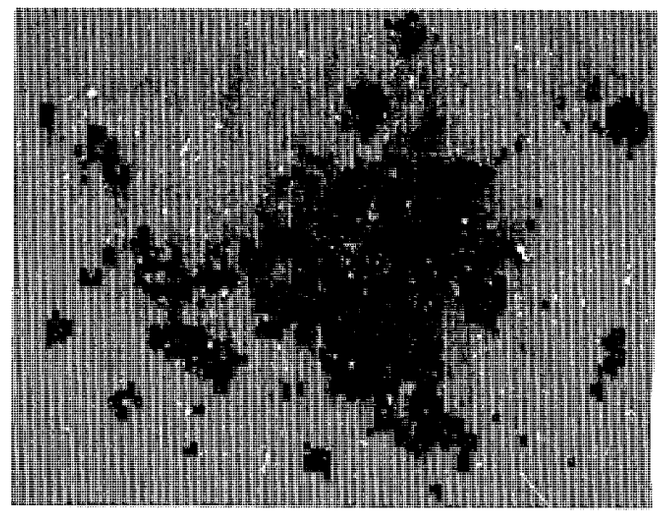

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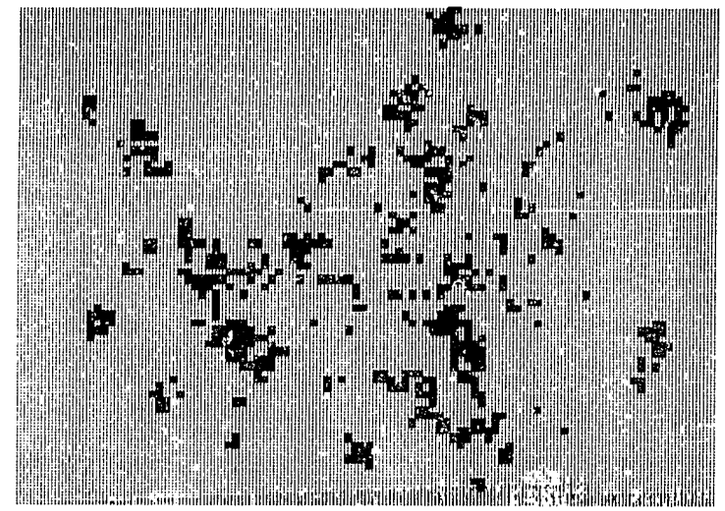


1972/78

ZAGAZIG
GØVERNØRATE- SHARKIA

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

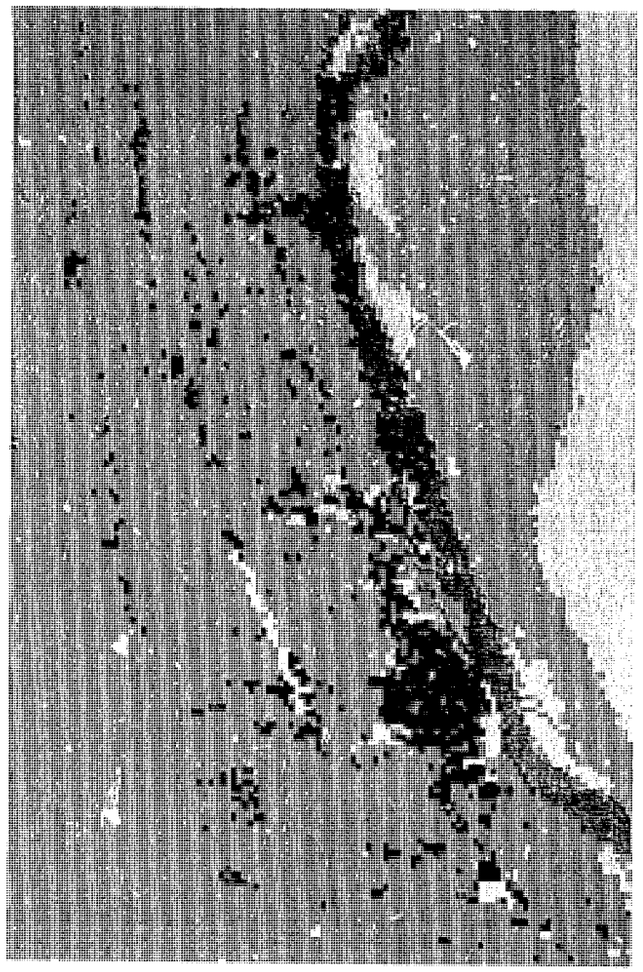
SCALE- 1 TØ 100,000

URBAN EXPANSIØN

KEY
- URBAN
- ØTHER

619

620



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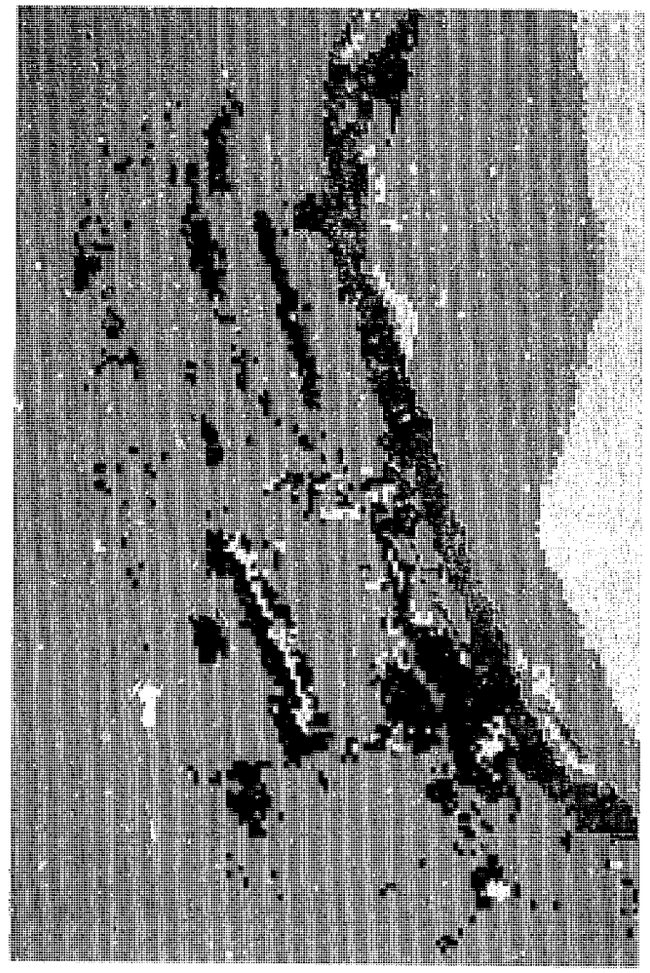


1978

1973/78

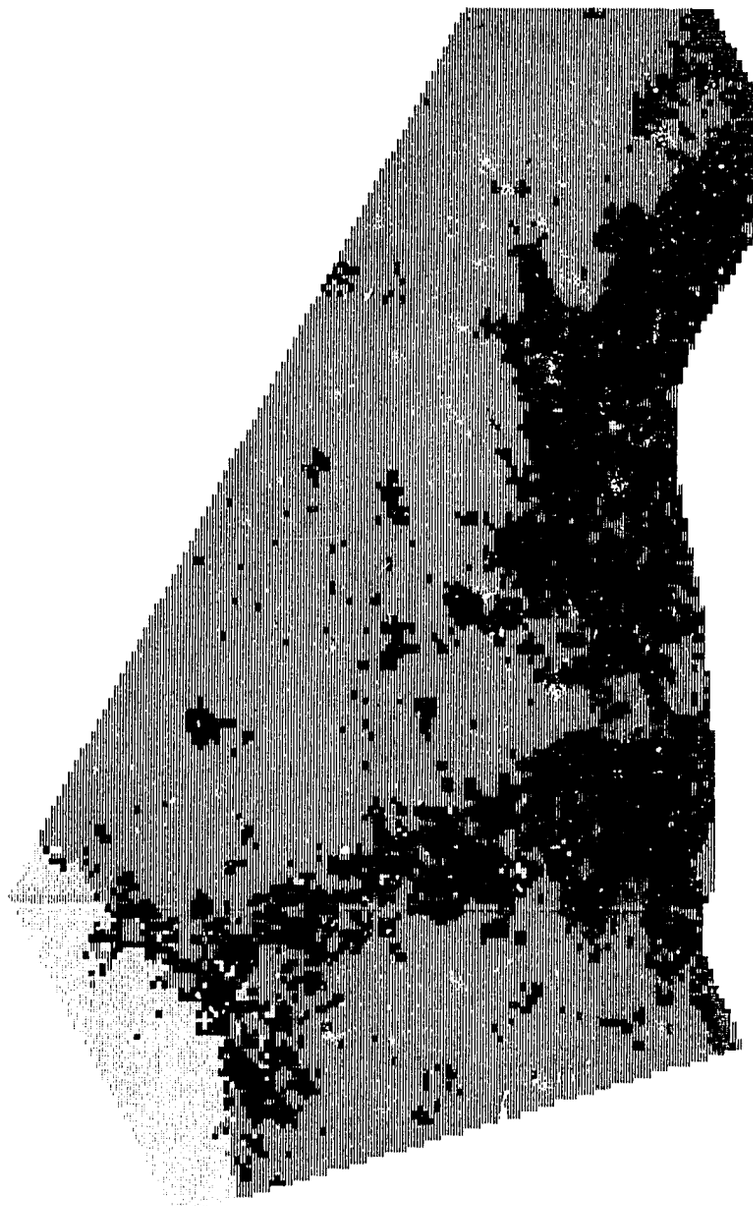
MENIAH
GØVERNØRATE— MENIAH

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 100,000

URBAN EXPANSIØN

KEY
- URBAN
- ØTHER



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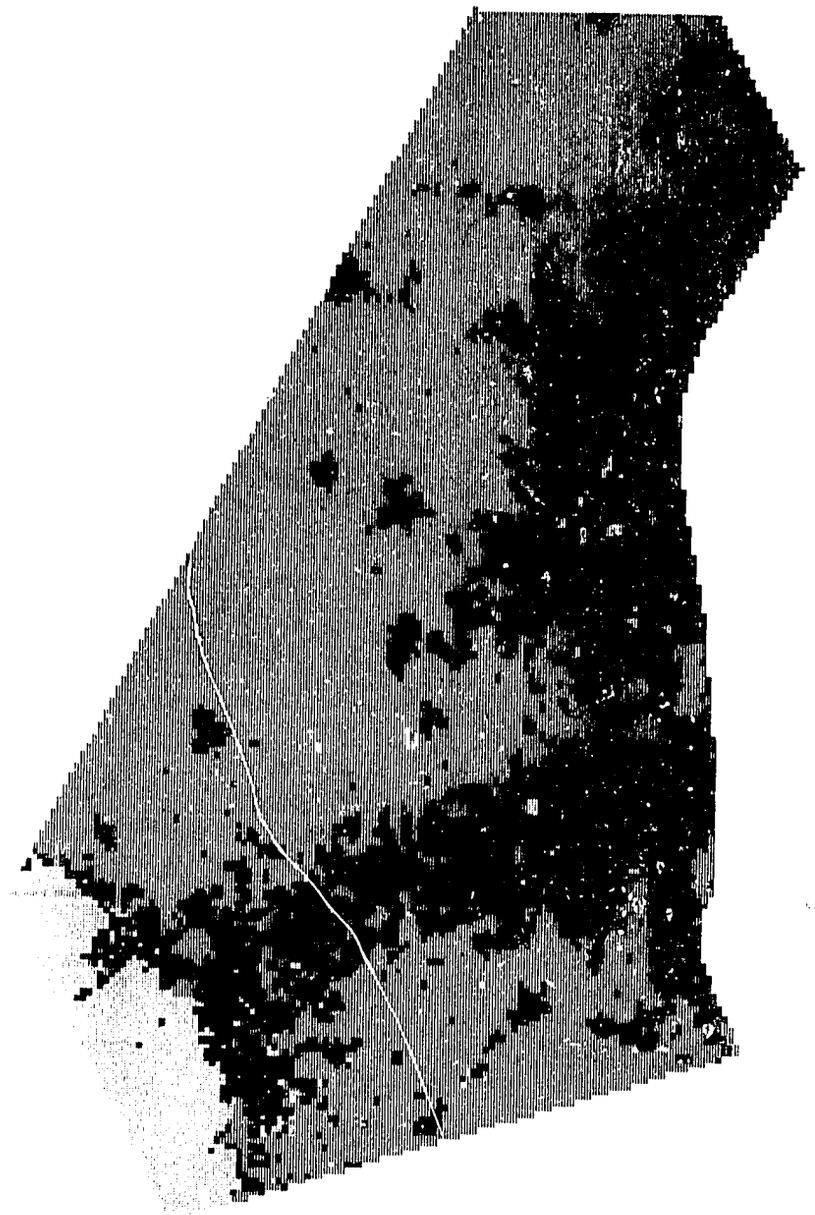


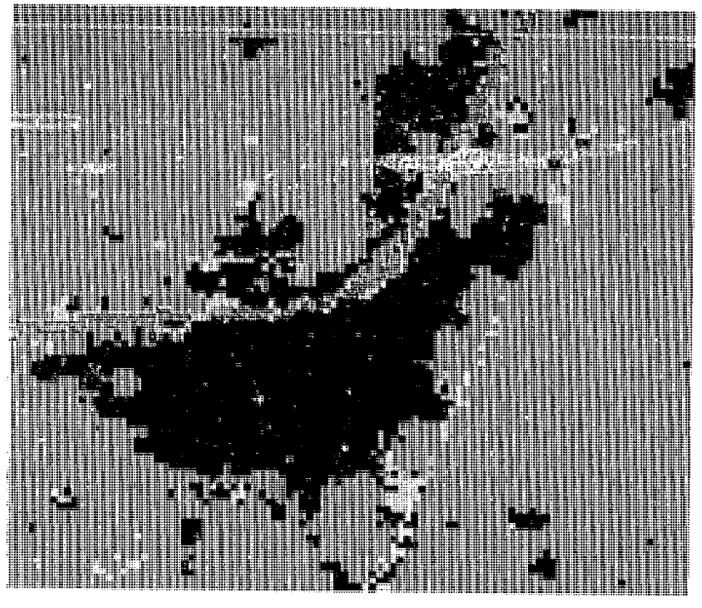
1978

1972/78

GIZA
GØVERNØRATE GIZA
KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 100,000

URBAN EXPANSIØN
KEY
- URBAN
- ØTHER



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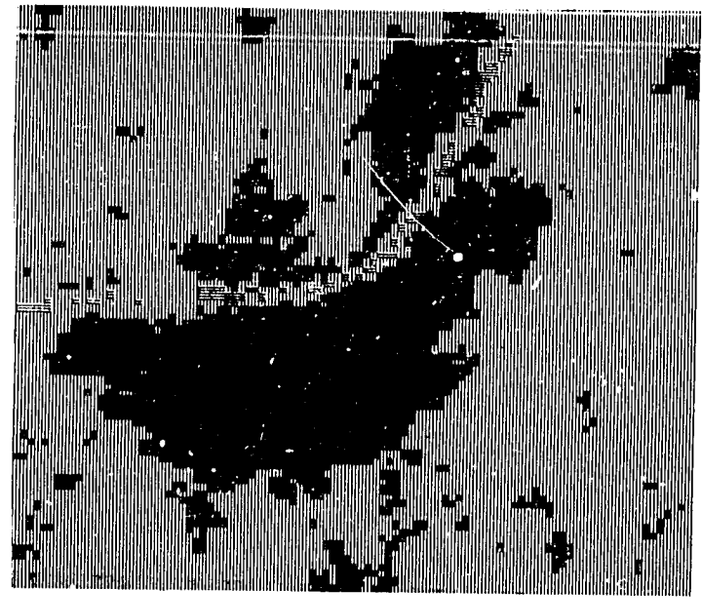

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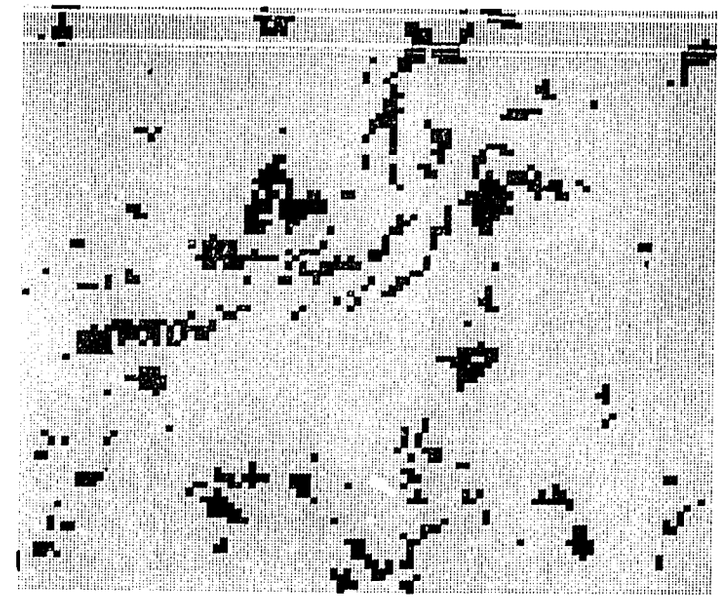


1972/78

MANSØURA

GØVERNØRATE- DAKAHLIA

KEY

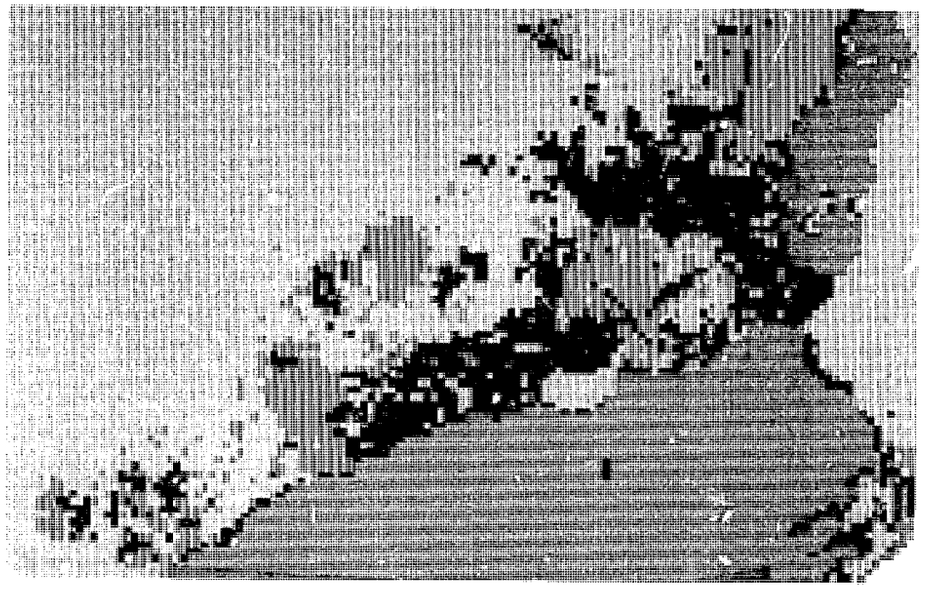
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE-1 TØ 100,000

URBAN EXPANSIØN

KEY

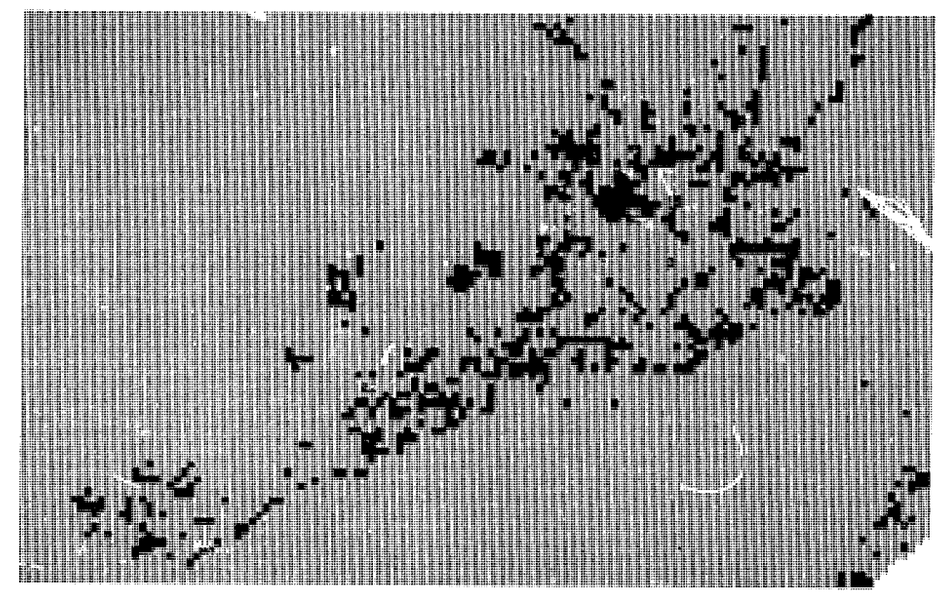
- URBAN
- ØTHER



1972

1978

1972/78



CITY- SUEZ
GØVERNØRATE- SUEZ,

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

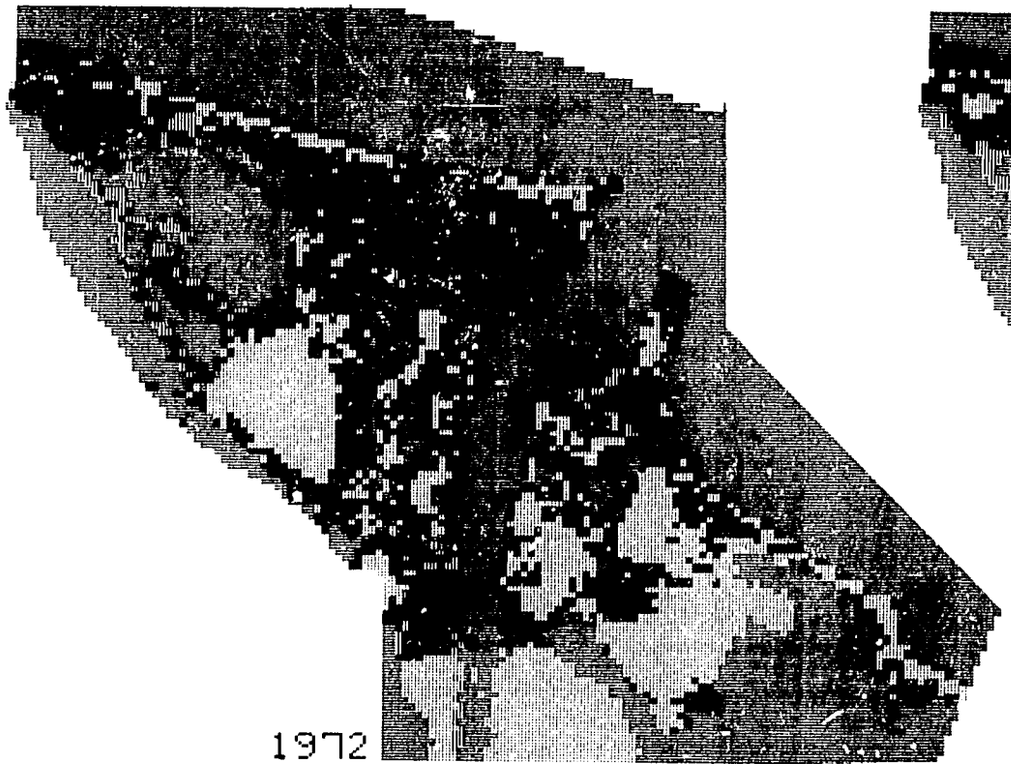
SCALE-1 TØ 100,000

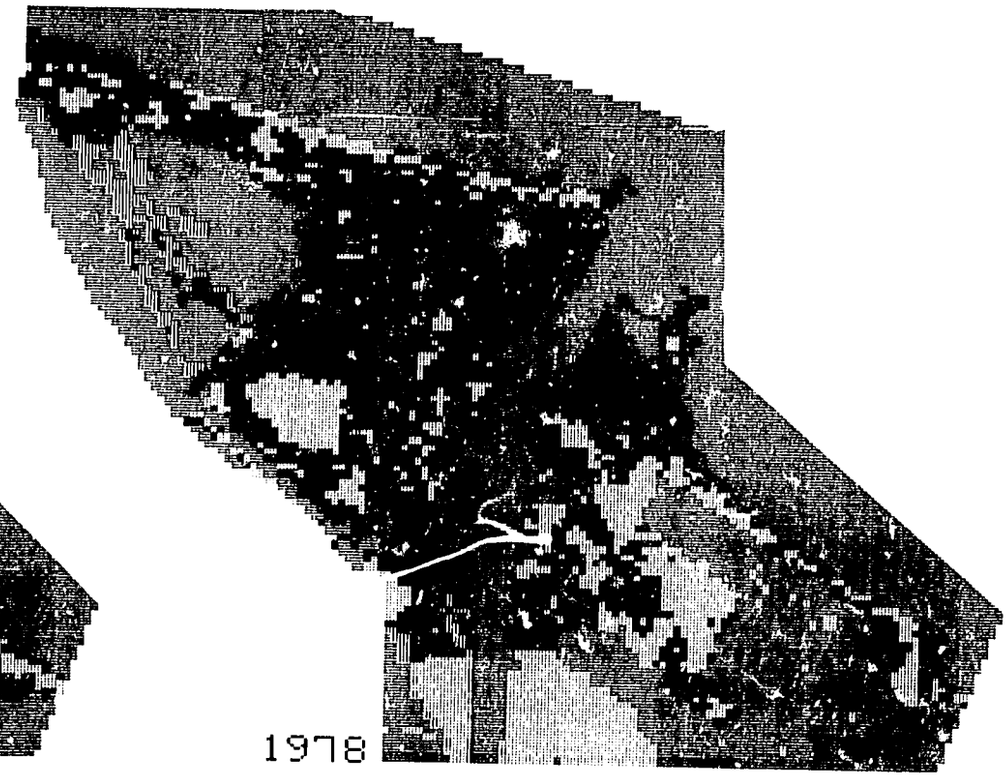
URBAN EXPANSIØN

KEY
- URBAN
- ØTHER

627

628



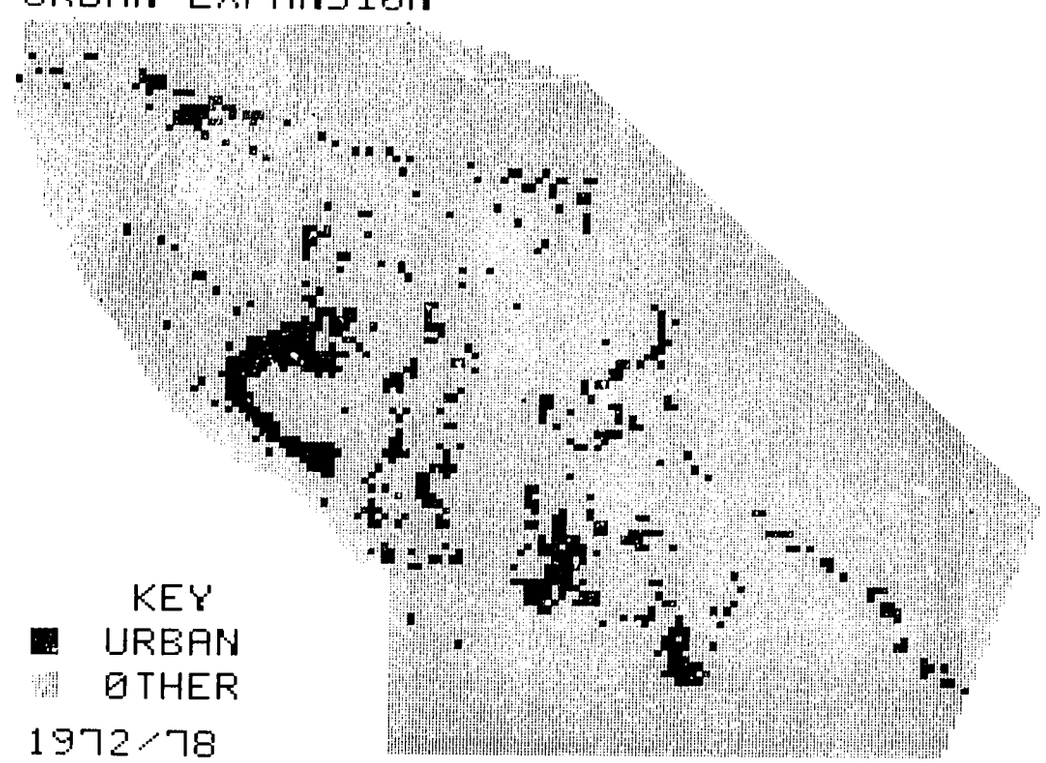


PØRT SAID
GØVERNØRATE-

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

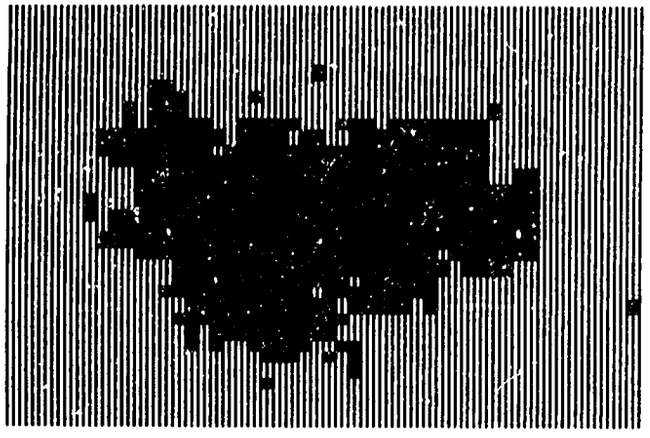
SCALE-1 TØ 100,000

URBAN EXPANSIØN



KEY
- URBAN
- ØTHER

1972/78



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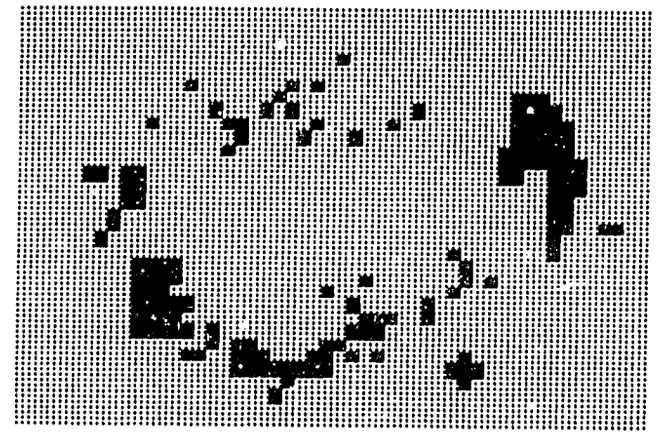


1972/78

KAFR EL SHEIKH

GØVERNØRATE- KAFR EL SHEIKH

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

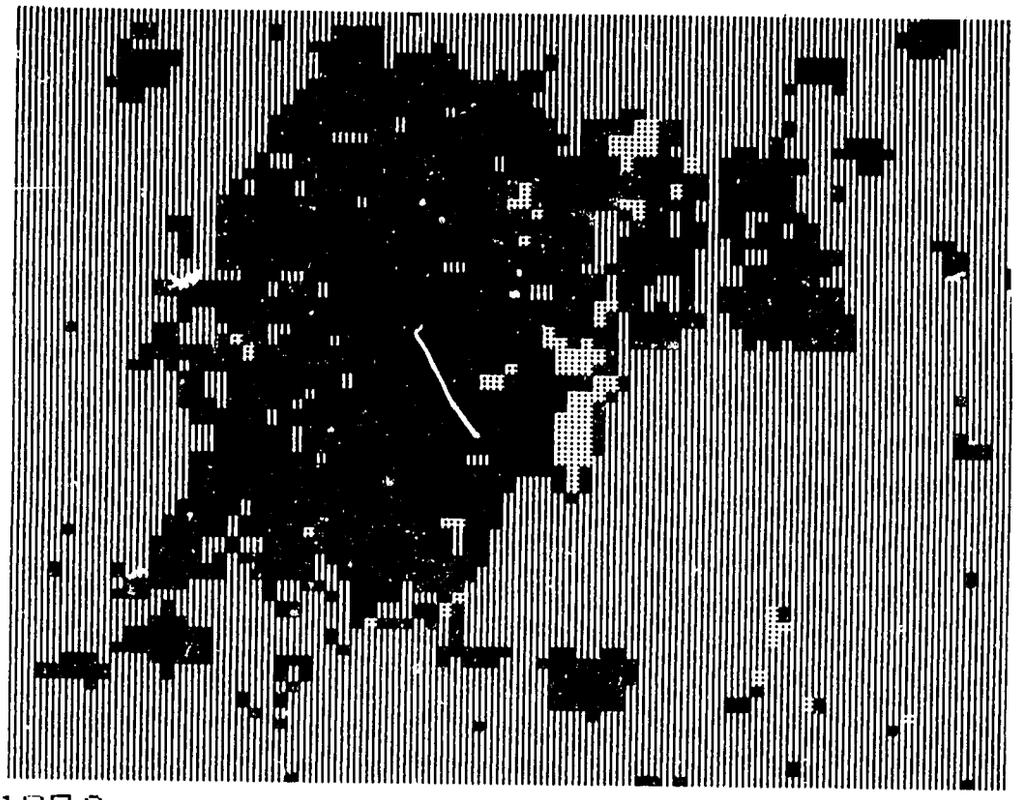
URBAN EXPANSIØN

KEY

- URBAN
- ØTHER

631

632



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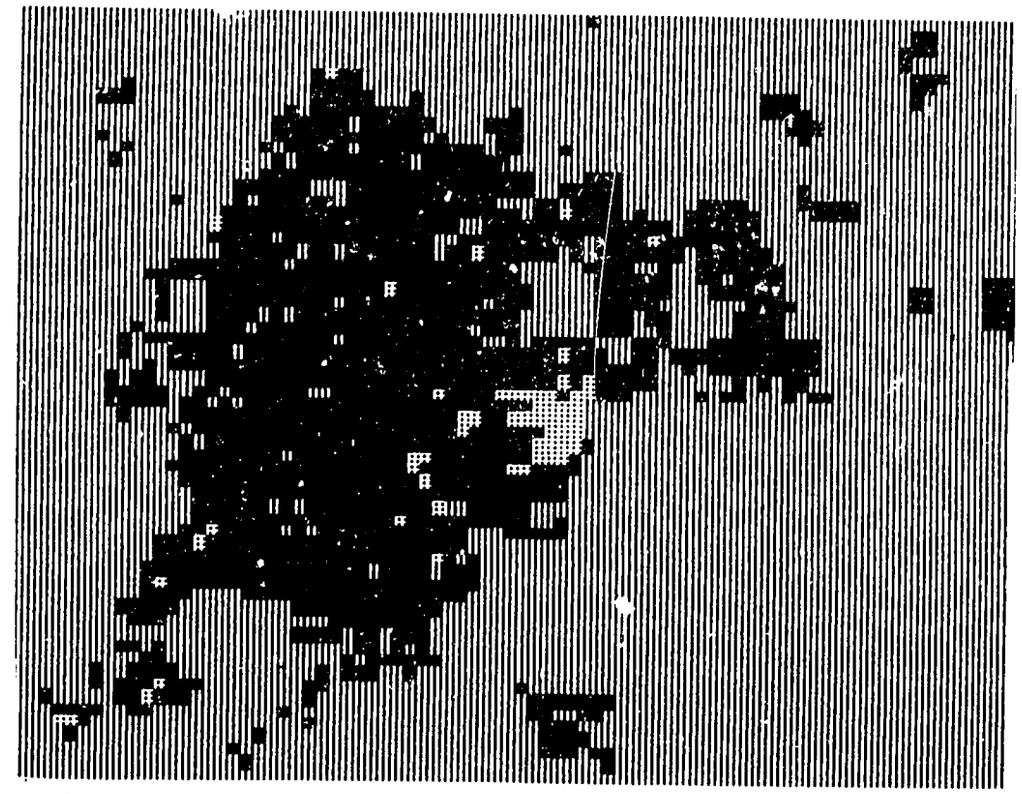


1978

EL MAHALLA
GØVERNØRATE-GHARBIA

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

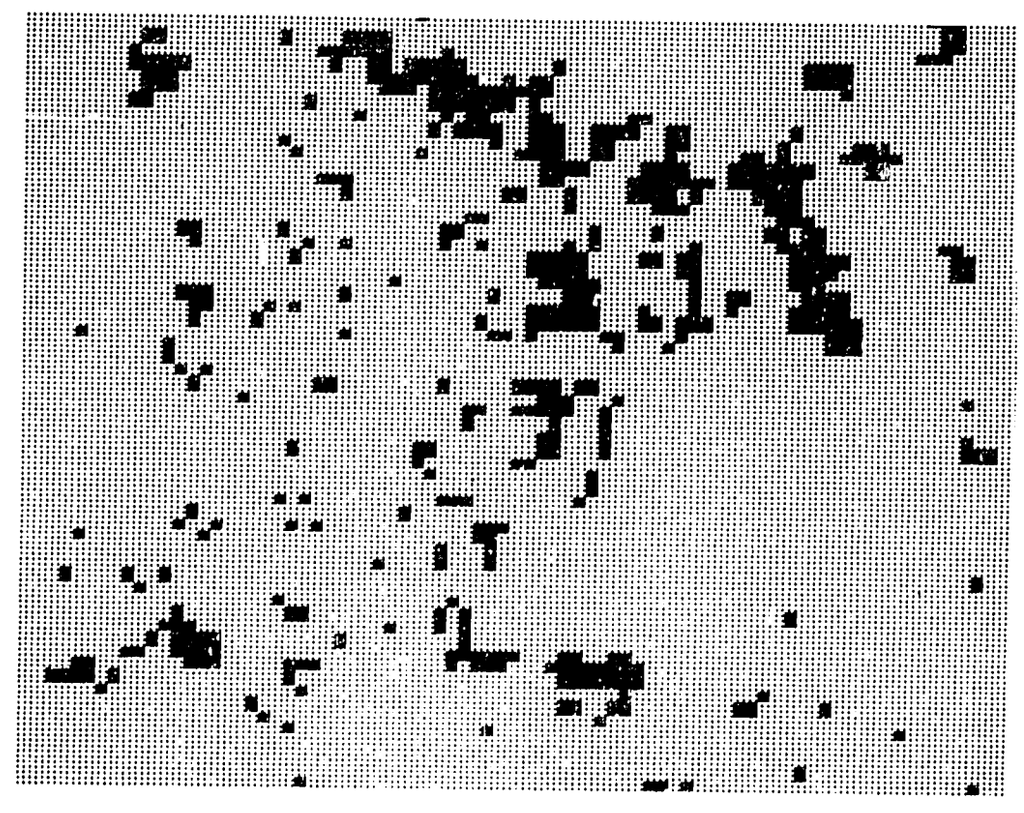
SCALE- 1 TØ 50,000

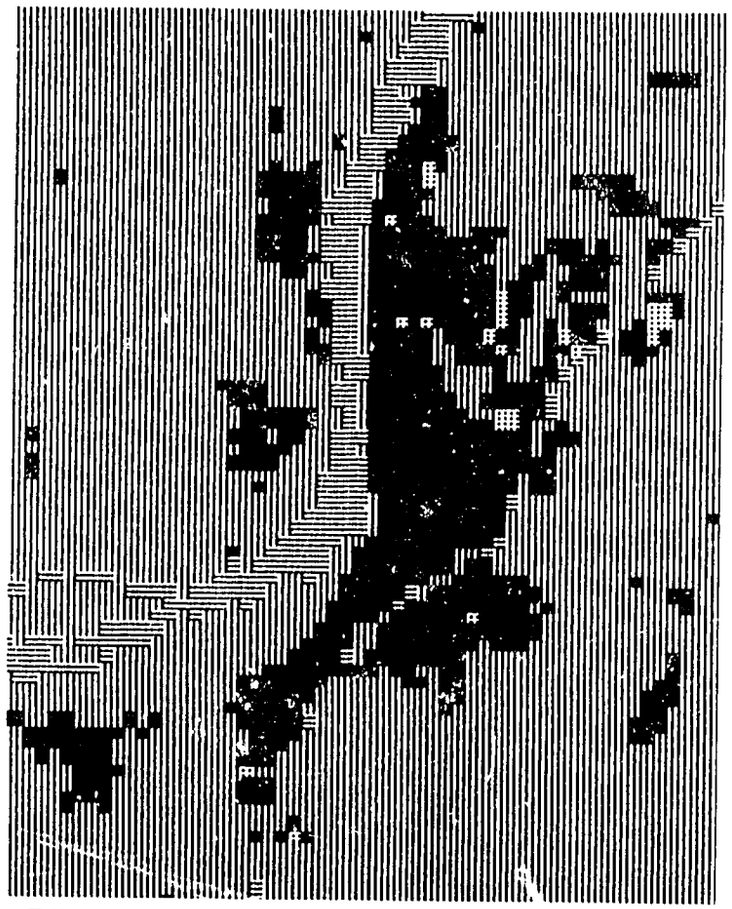
URBAN EXPANSIØN

KEY

- URBAN
- ØTHER

1972/78





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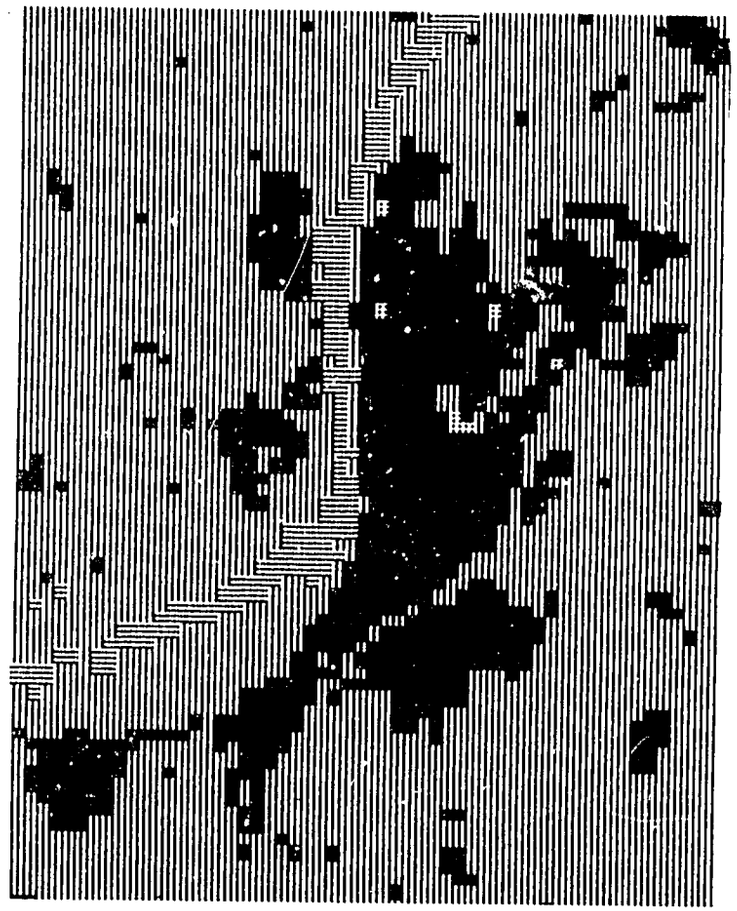

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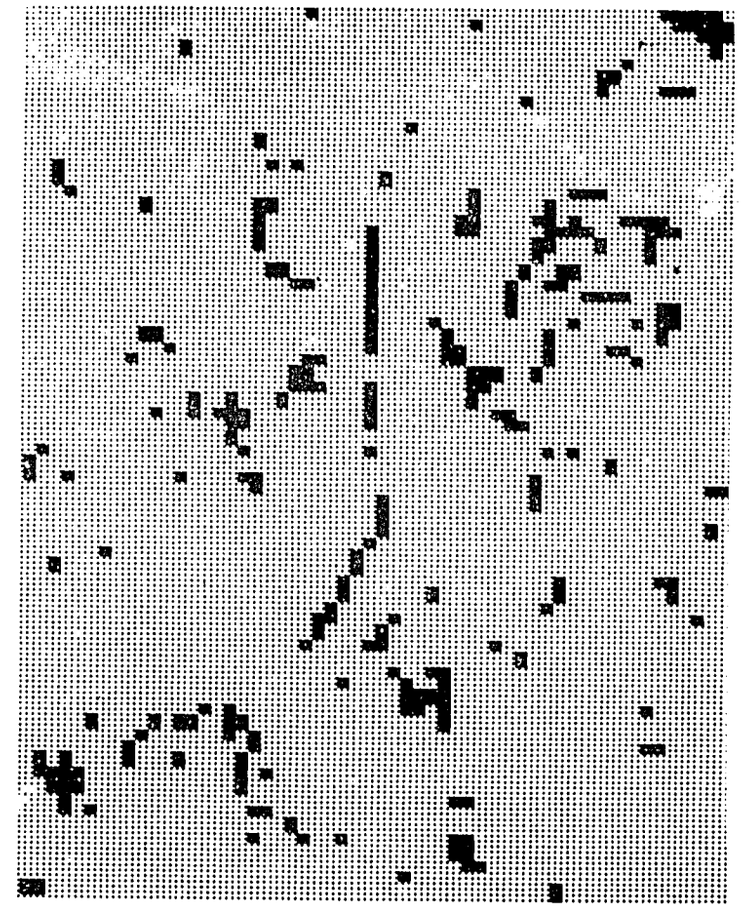


1972/78

BENHA
GØVERNØRATE- KALYØUBIA

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

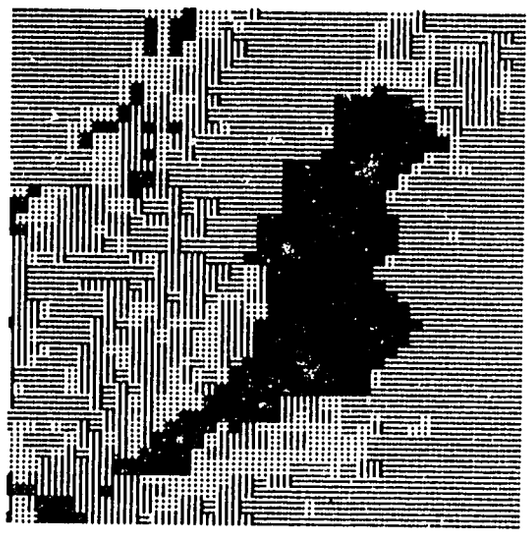
URBAN EXPANSIØN

KEY

- URBAN
- ØTHER

635

634



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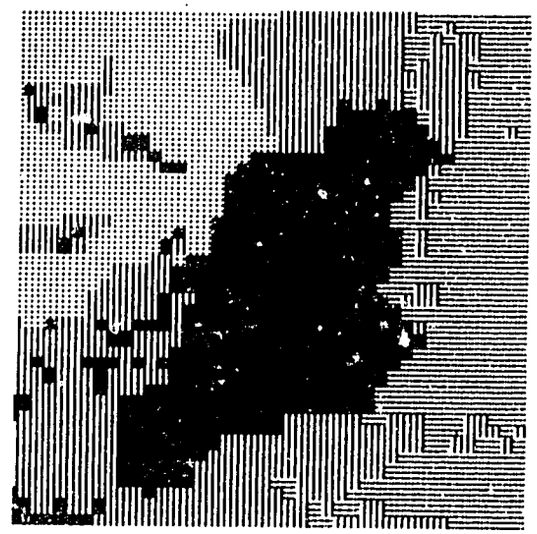

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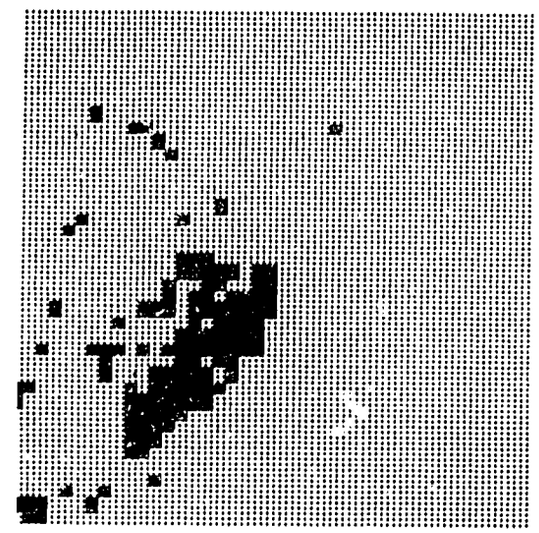

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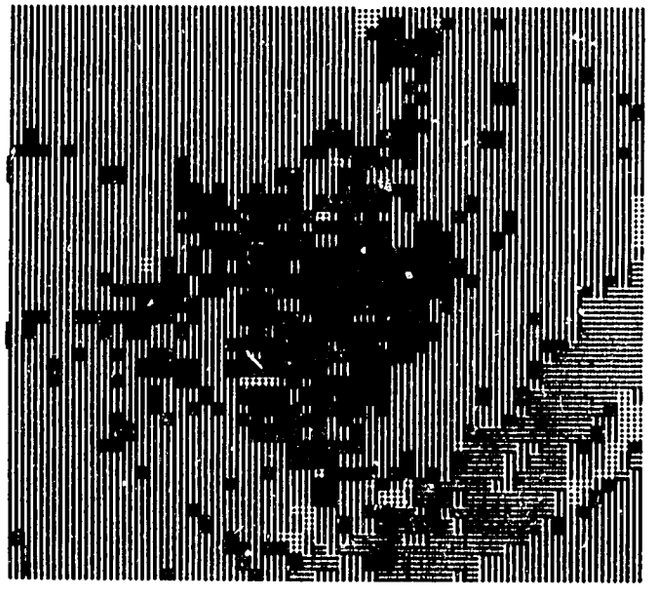
MATARIA
GØVERNØRATE- DAKAHLIA

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN

KEY
- URBAN
- ØTHER



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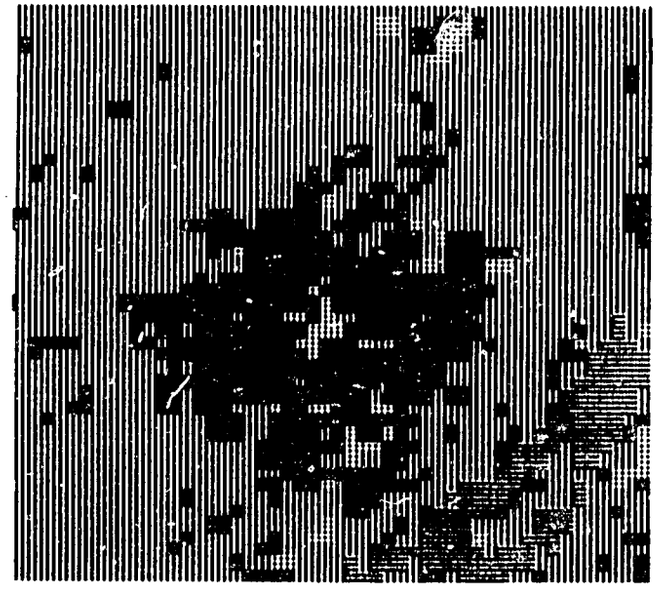

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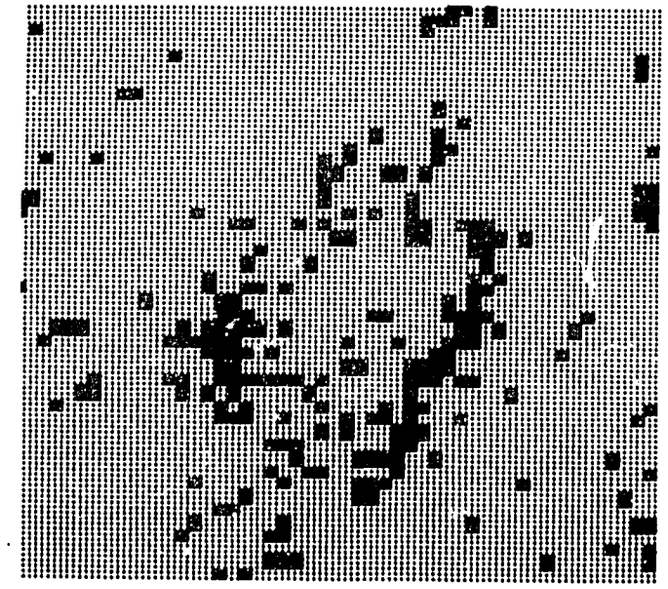


1973/78

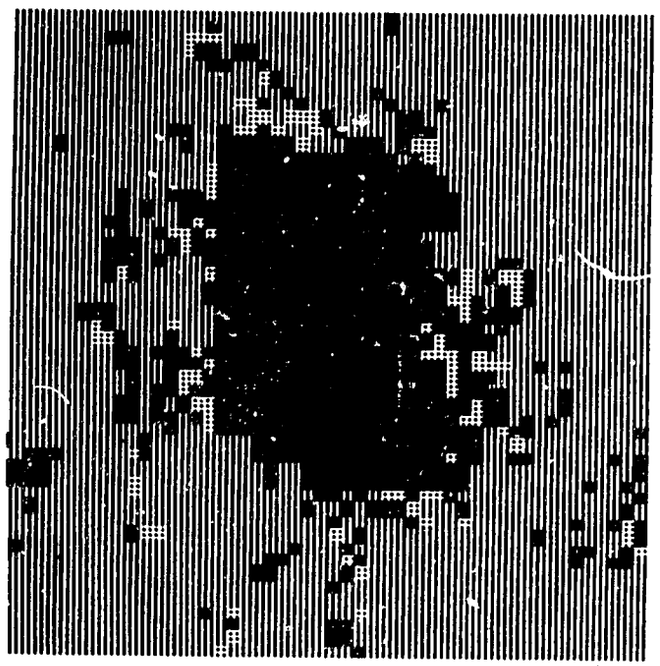
BENI SUEF
GØVERNØRATE- BENI SUEF

KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN

KEY
- URBAN
- ØTHER



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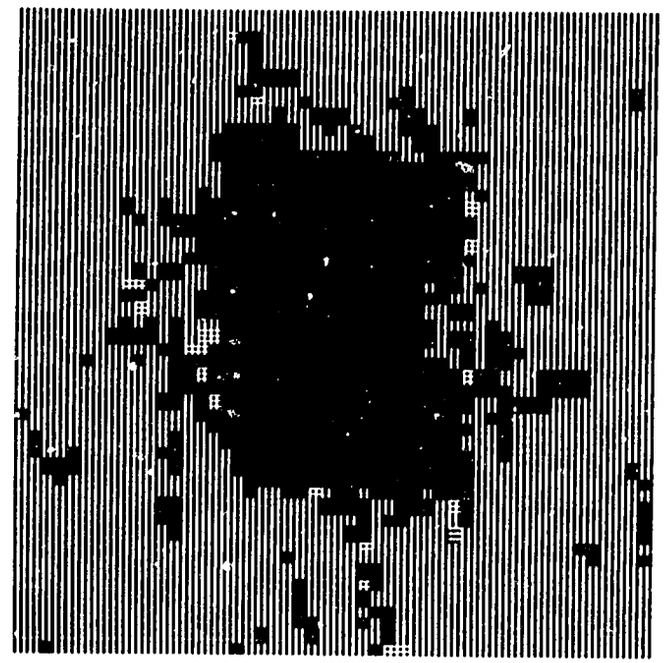

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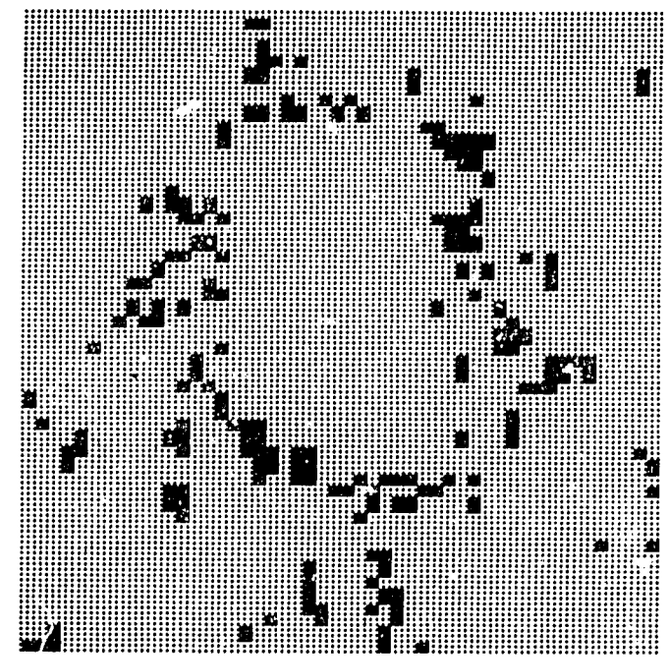

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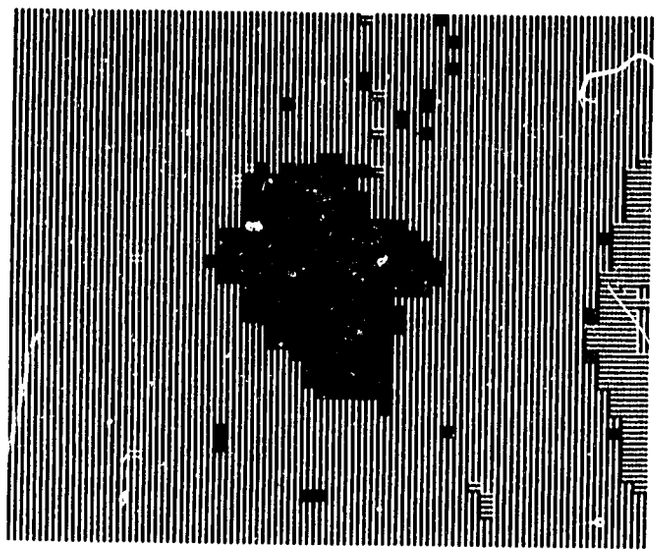
CITY- DAMANHØUR
GØVERNØRATE- BEHEIRA
KEY
URBAN
AGRICULTURE
BARREN
WATER
SCALE- 1 TØ 50,000

URBAN EXPANSIØN
KEY
URBAN
ØTHER



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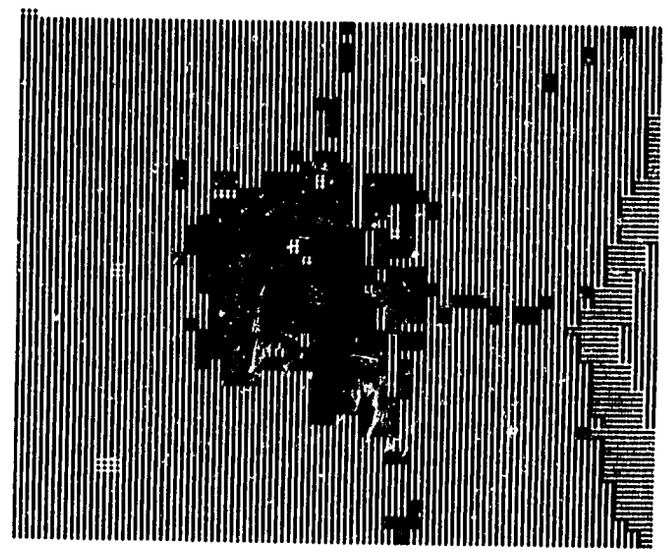

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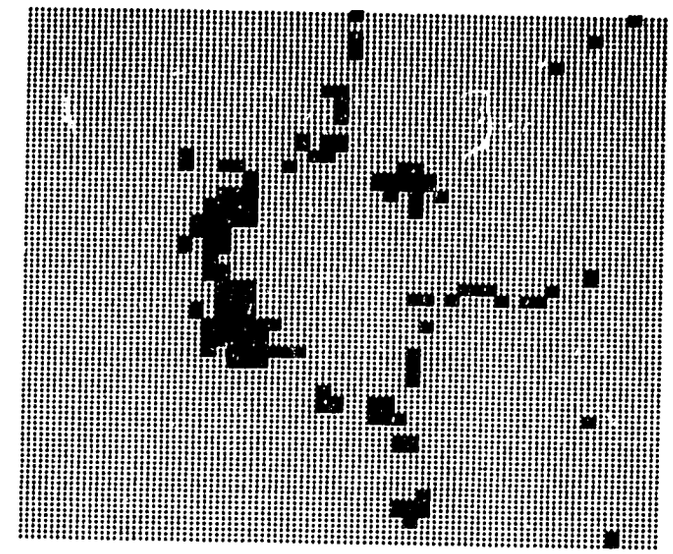


1972/78

MALLAWI
GØVERNØRATE- MENIAH

KEY

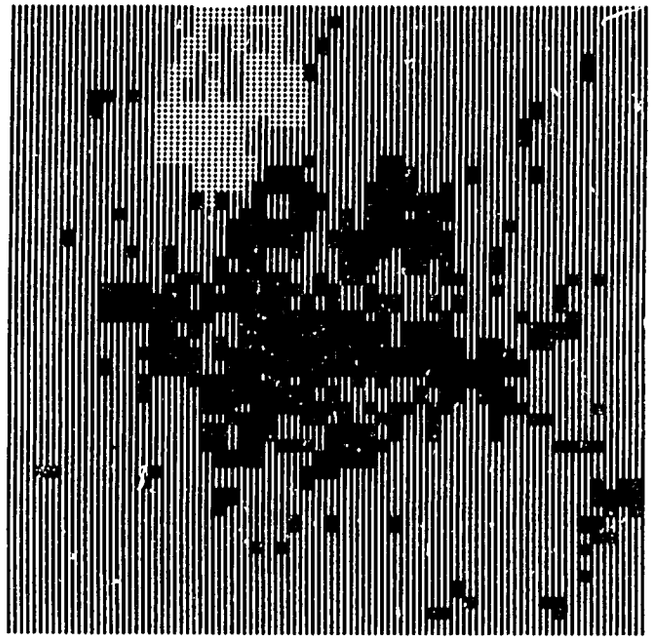
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN

KEY

- URBAN
- ØTHER



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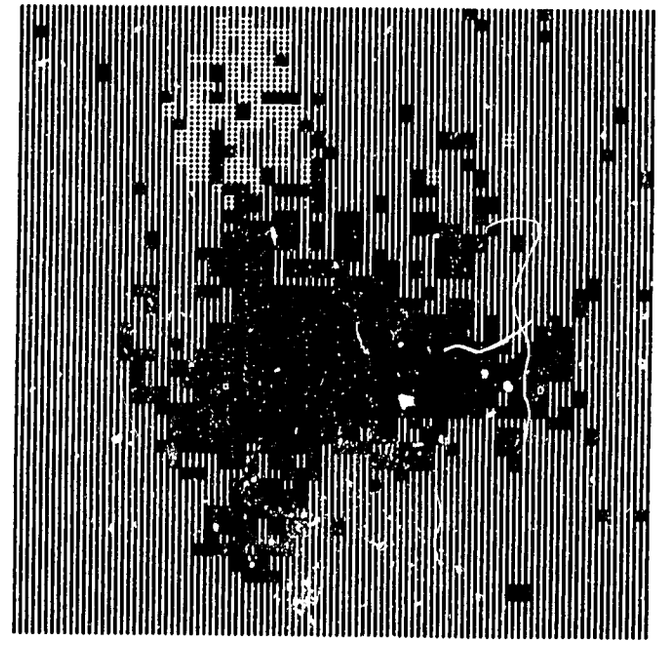

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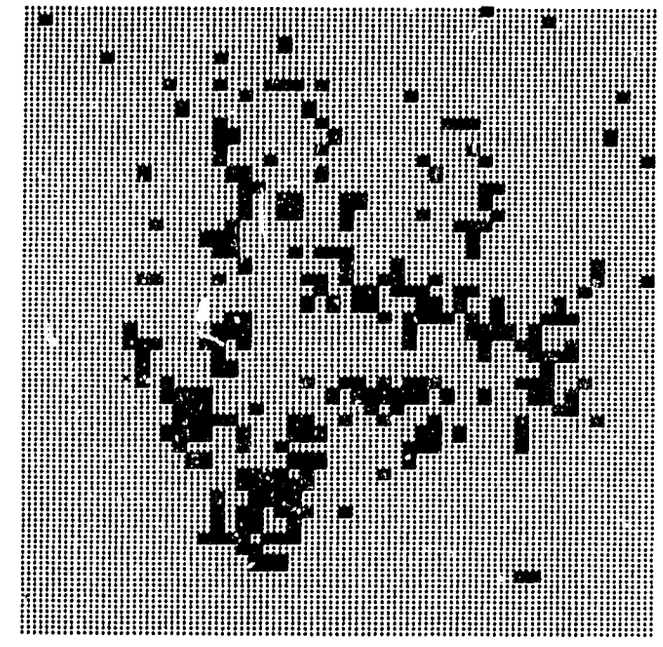


1972/78

FAYØUM

GØVERNØRATE- FAYØUM

KEY

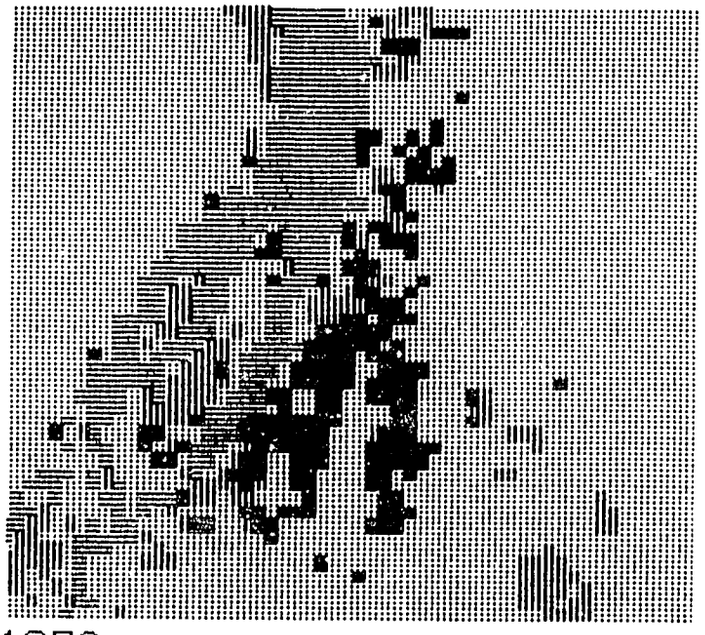
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN

KEY

- URBAN
- ØTHER



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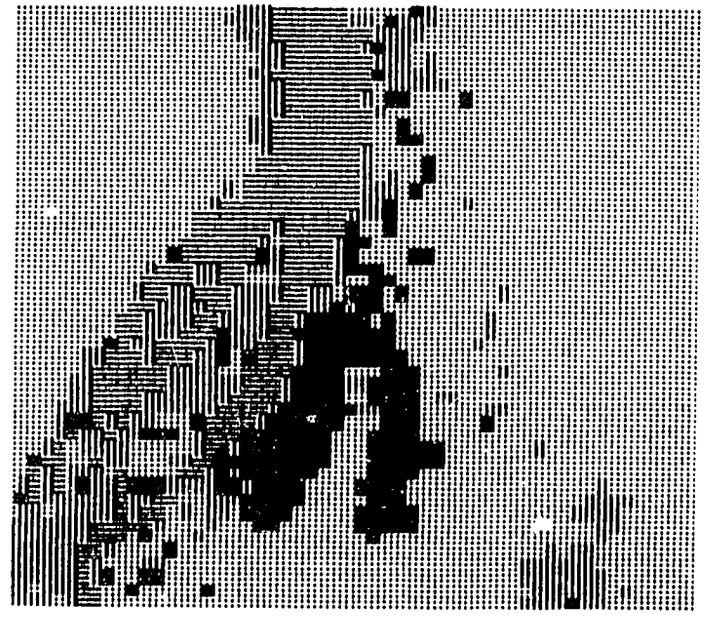

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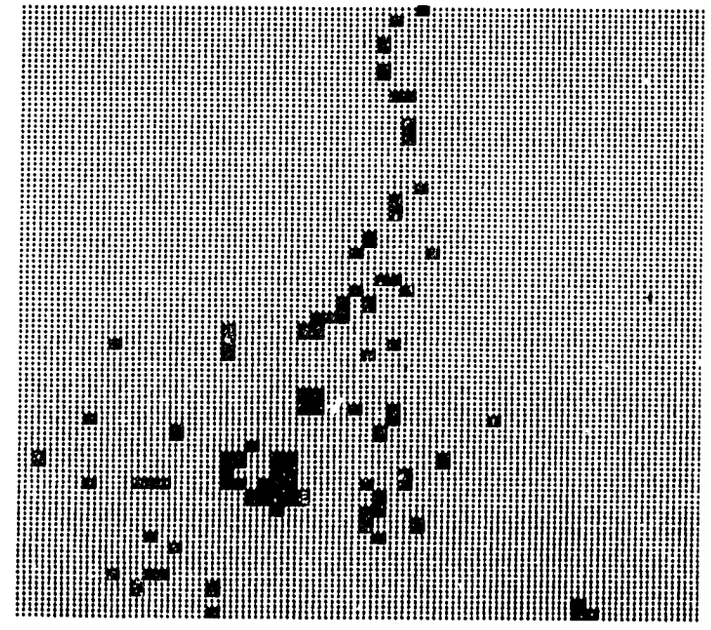


1972/78

ASWAN
GØVERNØRATE- ASWAN

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

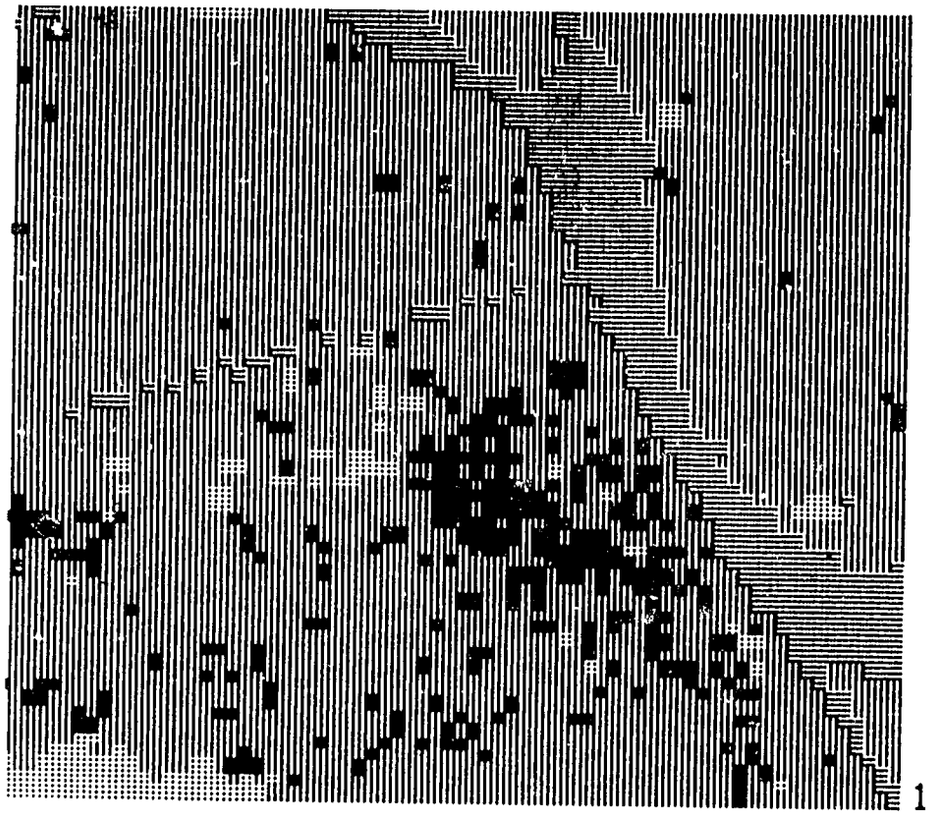
URBAN EXPANSIØN

KEY

- URBAN
- ØTHER

647

648



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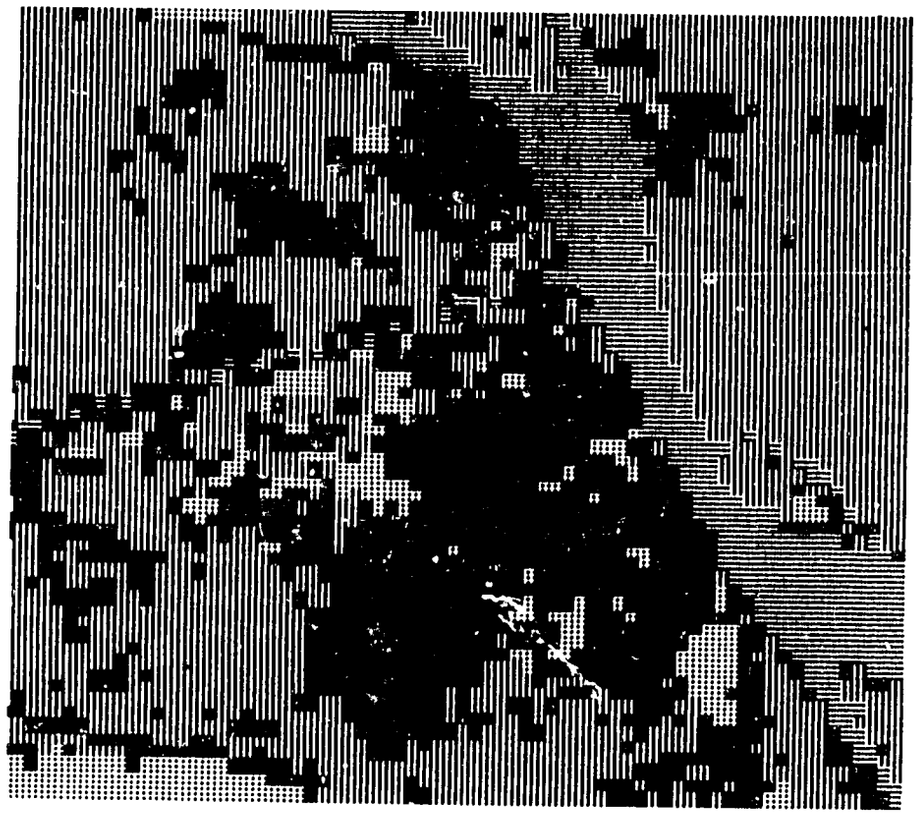

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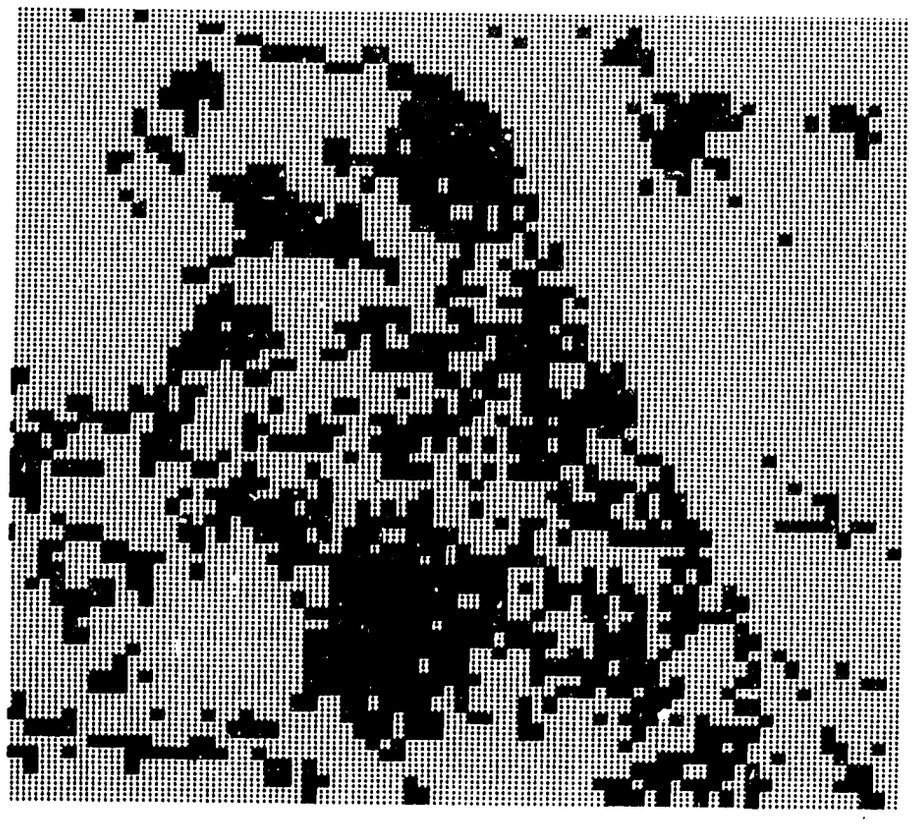


ASSIUT
GØVERNØRATE- ASSIUT

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN

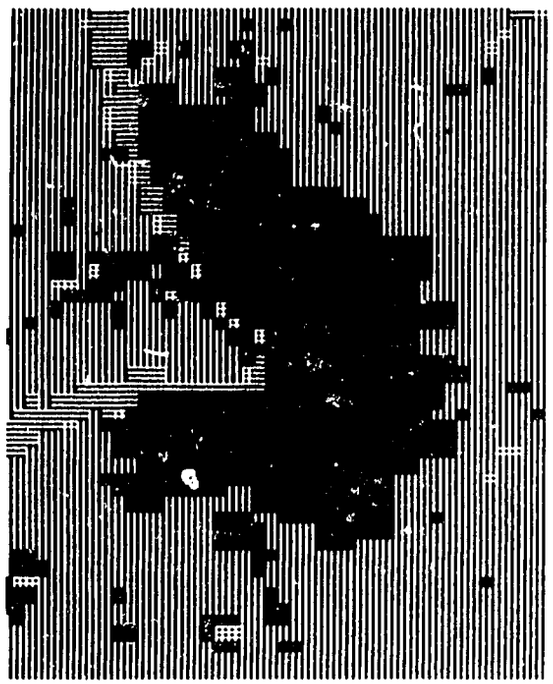
KEY

- URBAN
- ØTHER

1972/78

649

650



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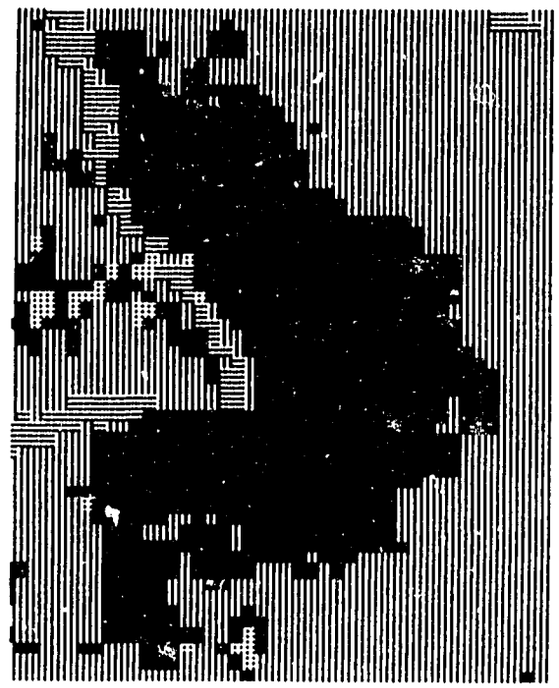

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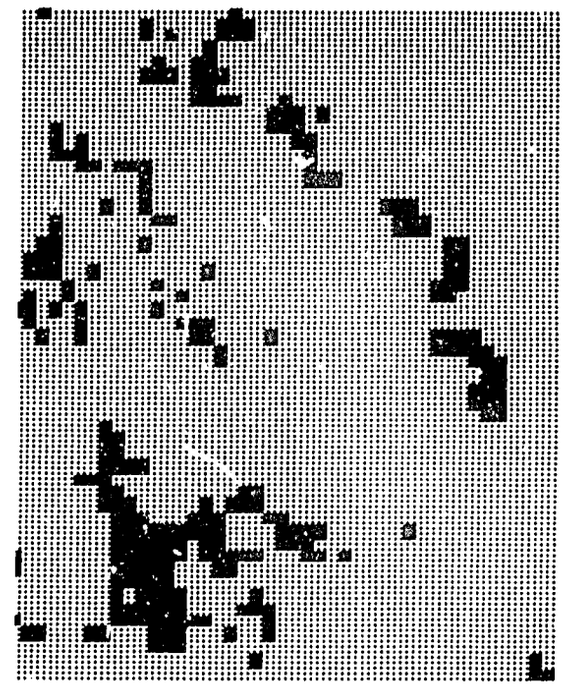


1972/78

DAMIETTA
GØVERNØRATE- DAMIETTA

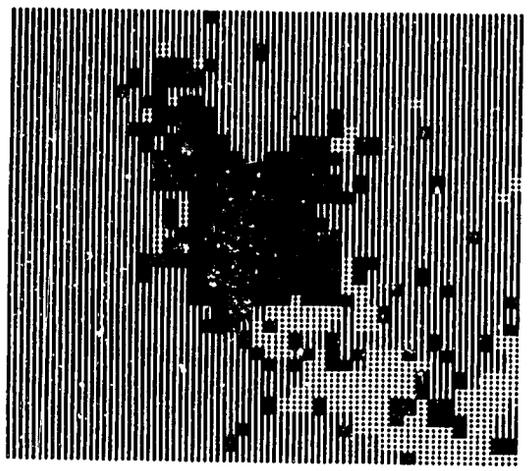
KEY
- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN
KEY
- URBAN
- ØTHER

651

652



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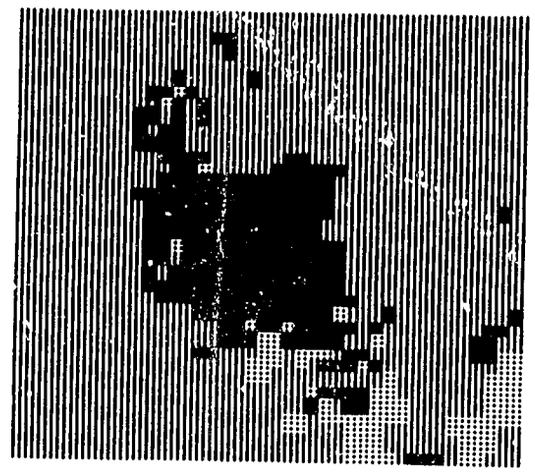
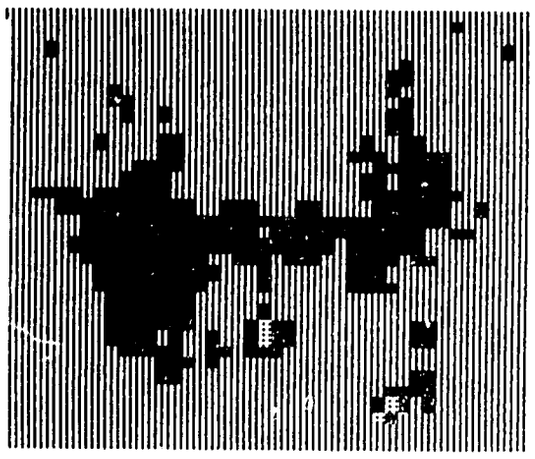


1978

1972/78

BELBEIS
GØVERNØRATE- SHARKIA
KEY
URBAN
AGRICULTURE
BARREN
WATER
SCALE- 1 TØ 50,000

URBAN EXPANSIØN
KEY
URBAN
ØTHER



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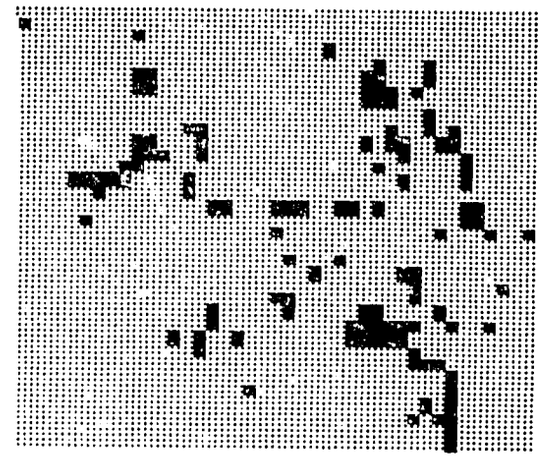

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KALY0UB

G0VERN0RATE- KALY0UBIA

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

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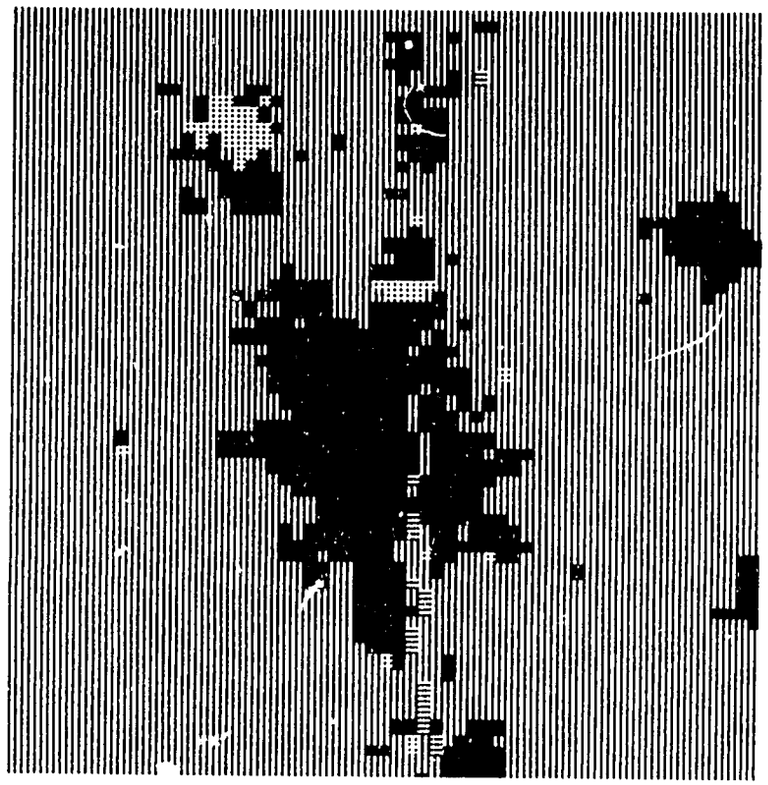

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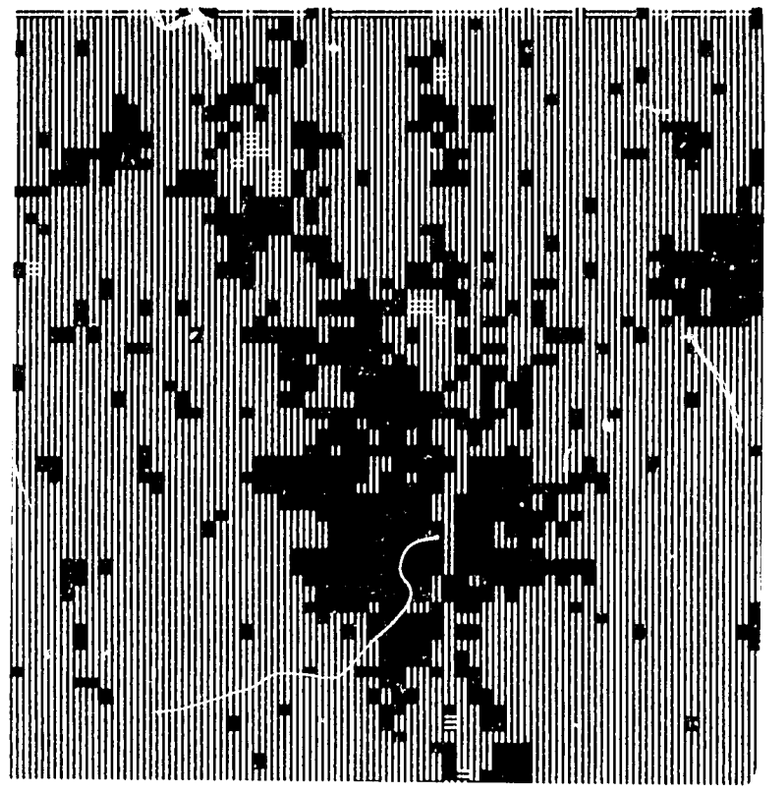

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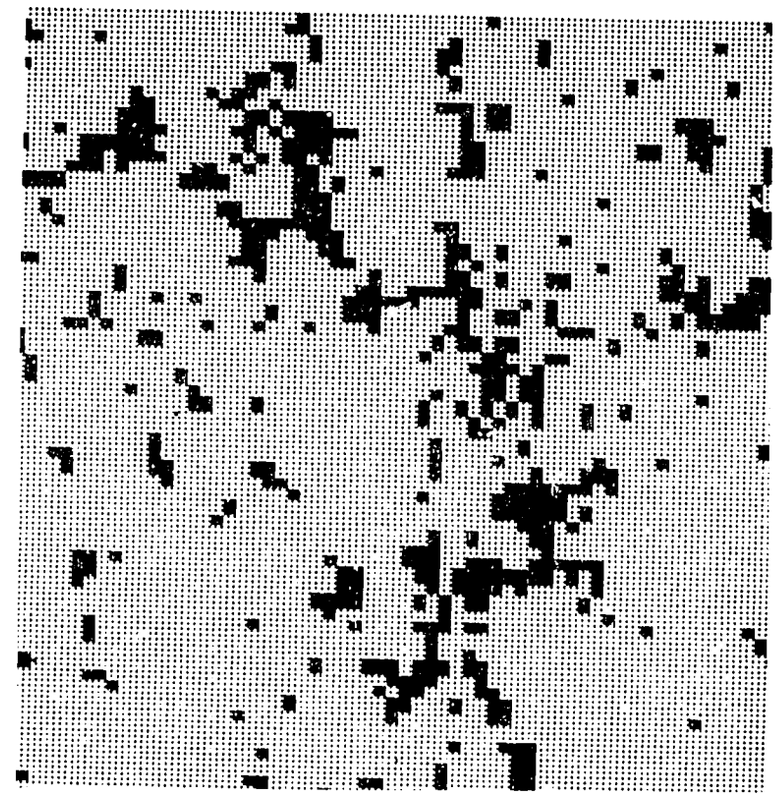

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SHEBIN EL KØUM
GØVERNØRATE- MENØUFIA

KEY

- URBAN
- AGRICULTURE
- BARREN
- WATER

SCALE- 1 TØ 50,000

URBAN EXPANSIØN

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- URBAN
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V. PROFILES OF GOVERNORATES AND SETTLEMENTS

A. Growth Potential and Absorption Capacity

1. Introduction

This analysis addresses the questions of where the most promising places are to locate investment with a reasonable chance of economic return with the capacity of a settlement to absorb future population without intruding on arable land or unnecessarily increasing infrastructure costs.

Attention was focused on settlements of over 50,000 population in 1976. (Table V-1) These had 88 percent of the urban population at that time. The data available are coupled with field visits sufficient to provide suggestive indicators, but not definitive answers to the issues of where population should be located.

Settlement growth potential was measured by indicators of access to required non-labor inputs and markets for its output plus recent population growth as a proxy for employment growth (which is only available at the governorate level). It was assumed that the better the access and the higher the population growth rate, the higher the overall economic development potential of the settlement.

The ability of a settlement to absorb population growth without exceeding capacity constraints of infrastructure or intrusion on arable land is a major modifier of economic growth potential. The measures used to establish the ability of settlements to absorb population growth included:

i) The potential to increase densities within the existing boundaries by relating existing densities of a settlement with a range of densities already achieved in other urban settlements;

ii) The potential of a settlement to expand beyond its boundaries on non-arable land;

iii) A modification of the above on the basis of existing infrastructure capacity in the water and sewer systems and their potential per capita costs for expansion.

Finally, an overall assessment is made to rank the existing settlements according to a combined index of economic development potential and absorption capacity.

TABLE V-1
SETTLEMENTS WITH POPULATION OVER 50,000

POPULATION	SETTLEMENT
Greater than 1,000,000	Alexandria Greater Cairo
100,000 - 999,999	Assiut Beni Suef Damanhour Fayoum Mahalla Mansoura Minia Port Said Shebin El Kom Sohag Tanta Zagazig
50,000 - 99,999	Abu Kebir Belbeis Belkas Benha Damietta Dessouk Edku Ekhmim Gerga Kafr El Sheikh Kafr El Zayat Luxor Mallavi Mataria Matruh Menouf Mit Ghamr Naga Hamadi Qalyub Qena Zefta

SOURCE: NUPS.

2. Economic Growth Potential of Major Settlements

Using the two indicators of recent population growth and access, a ranking of development potential of the major settlements relative to each other was made.

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a. Population and Employment Growth of Settlements. The settlement population growth rates between 1960 and 1976 are shown in Table V-2. These rates have also been ranked according to their relationship with growth rates of the other settlements. The growth rates of the Canal cities show very low or even negative rates because of the war. Therefore, in ranking the cities, the projected growth rates from their master plans have been used as proxies to give a more realistic picture.

b. Settlement Access to Markets and Non-Labor Inputs. The data used was assembled from the 1980 origin and destination surveys of the National Transportation Study of the Ministry of Transport for road transport. It reflects only tonnage flows of major commodities at the governorate level. Overall, the data shows the large impact of Cairo and Alexandria upon the economic activities of smaller settlements. (Table V-3)

TABLE V-2
MAJOR SETTLEMENT POPULATION GROWTH INDEX

SETTLEMENT POPULATION SIZE RANGE 2/	PERCENT OF ANNUAL POPULATION INCREASE 1960-1976				
	2.41	2.41 - 3.0	3.1 - 3.4	3.41 - 4.0	4.0
VALUE	0	1	2	3	4
2 Greater than 1,000,000		Alexandria		Greater Cairo	
Index Value	2	3	4	5	6
1 100,000 - 999,999		Tanta Mansour 1/ Minia Beni Suef	Mahalla Assiut Zagazig Fayoum Sohag	Port Said 1/ Damanhour Shebin El Kom	Suez 1/ Kafr El Dawar Ismailia* Aswan
Index Value	1	2	3	4	5
0 Less than 100,000	Damietta Mallawi Qalyub Gerga Ekhmim	Dessouk Abu Kebir Zefta Kafr El Zayat	Qena Benha Belkas	Mit Ghamr Belbeis Mataria	Luxor Kafr El Sheikh Edku Menouf Matruh Naga Hamadi
Index Value	0	1	2	3	4

1/ Master Plan Projected Growth Rates (1976-2000)

2/ The values assigned by settlement size correspond to absolute increases in population between 1960-1976 as follows:

Those cities with population in 1976 of --
(1) Greater than 1,000,000 = absolute increase greater than 800,000
(2) 100,000 - 999,999 = absolute increase 40,000 - 200,000
(3) Less than 100,000 = absolute increase less than 40,000.

SOURCE: NUPS analysis.

The actual formula which was developed by NUPS for the assessment is as follows:

Access Index Formula

$$T_i = \frac{P_i \; P_j}{(D_{ij})2} \quad (W_{ij})$$

$$j = 1, 2, 3$$

WHERE:

P_i = Settlement population

P_j = Urban population of governorates representing the three principal markets, or sources of input (j=1,2,3)

D_{ij} = Time distance in minutes, between the settlement and the capital of the governorates representing the three principal markets, or sources of inputs

$$W_{ij} = \frac{T_{ij}}{T}$$

T_{ij} = Trade, measured in tonnage, of "All Products" between the settlement and the governorate of its markets or sources of inputs

T = Total trade, measured in tonnage, of "All Products" exchanged between all governorates

W_{ij} = Reflects the importance of each market or source of inputs relative to the total production exchanged in the country

T_i = Index of access potential for each settlement

The final ranking of the settlement economic growth potential is presented in matrix form in Figure V-1. Population increase is measured vertically and access potential horizontally.

Cairo and Kafr El Dawar have the highest overall indicies while Gerga and Ekhmim received the lowest. The settlements in the upper left quadrant can be considered to have the highest economic growth potential and those in the lower right quadrant the lowest. The settlements in the upper right quadrant have enjoyed high rates of population growth but have generally poorer access to markets and non-labor inputs. Those in the lower left quadrant have good access potential, but have experienced low population growth.

It is significant to note that practically all of the Delta Zone settlements have medium high or high growth potential; only four do not. The Upper Egypt settlements ranked much lower largely because of distance to their markets. The characteristics of the individual settlements are discussed within the framework of their settlement zones in zone profiles at the end of this chapter.

TABLE V-3

OVERALL ACCESS INDICES OF SETTLEMENTS TO SOURCES OF NON-LABOR INPUTS AND MARKETS

SETTLEMENT	INDEX 1/ ACCESS TO SOURCES OF NON-LABOR INPUTS	ASSIGNED VALUE (A) 0 - 8	INDEX 1/ ACCESS TO MARKETS	ASSIGNED VALUE (B) 0 - 8	SUM OF VALUES (A) + (B) 0 - 16	OVERALL ACCESS INDEX 0 - 5
Greater Cairo	4,136	8	3,103	7	15	5
Alexandria	1,828	7	5,632	8	15	5
Kafr El Dawar	4,720	8	2,923	7	15	5
Qalyub	1,383	7	518	5	12	4
Mahalla	375	5	1,072	6	11	4
Damanhour	815	6	500	5	11	4
Benha	789	6	299	5	11	4
Zagazig	262	5	441	5	10	4
Shebin El Kom	326	5	219	5	10	4
Tanta	134	4	294	5	9	3
Belbeis	105	4	201	5	9	3
Edku	203	5	128	4	9	3
Mit Ghamr	608	6	47	3	9	3
Fayoum	104	4	107	4	8	3
Port Said	4	2	80	4	8	3
Mansoura	187	5	53	3	3	3
Zefta	24	3	105	4	7	3
Suez	28	3	93	4	7	3
Menoufia	110	4	48	3	7	3
Kafr El Zayat	31	3	48	3	6	2
Abu Kebir	32	3	48	3	6	2
Dessouk	35	3	5	3	6	2
Kafr El Sheikh	51	3	33	3	6	2
Beni Suef	2	2	58	3	5	2
Minia	6	2	20	3	5	2
Belkas	27	3	8	2	5	2
Mataria	27	3	4	2	5	2
Damietta	36	3	2	2	5	2
Mallawi	2	2	7	2	4	1
Ismailia	10	2	7	2	4	1
Assiut	2	2	6	2	4	1
Aswan	0	0	1	2	2	0
Sohag	1	2	0	0	2	0
Qena	4	2	0	0	2	0
Luxor	1	2	0	0	2	0
Gerga	0	0	0	0	0	0
Naga Hamadi	0	0	0	0	0	0
Ekhmim	0	0	0	0	0	0

1/ See Appendix II for index data.

SOURCE: NUPS.

3. Absorption Capacity of Major Settlements

"Absorption capacity" is based on absorption capacity within settlements, horizontal absorption capacity outside of settlement boundaries and absorption capacity of infrastructure networks.

a. Absorption Capacity Within Settlements. The capacity of settlements to absorb additional population within their boundaries is their ability to expand by infilling areas presently vacant or underutilized and vertically by adding additional floors or replacing old buildings with new higher storey buildings. A gross density measure was applied using census

FIGURE V-1

MATRIX OF MAJOR SETTLEMENTS ECONOMIC GROWTH POTENTIAL

Access Potential

Population Growth	5	4	3	2	1	0
5	Cairo Kafr El Dawar 10	9	Suez 8	7	Ismailia 6	Aswan 5
4	9	Damanhour Shebin El Kom 8	Port Said Edku Menouf 7	Kafr El Sheikh 6	Matruh 5	Naga Hamadi Luxor 4
3	Alexandria 8	Mahalla Zagazig 7	Mit Ghamr Belbeis Fayoum 6	Mataria 5	Assiut 4	Sohag 3
2	7	Benha 6	Tanta Mansoura 5	Belkas Minia Beni Suef 4	3	Qena 2
1	6	5	Zefta 4	Dessouk Abu Kebir Kafr El Zayat 3	2	1
0	5	Qalyubia 4	3	Damietta 2	Mallawi 1	Gerga Ekhmim 0

SOURCE: NUPS

TABLE V-4

POPULATION ABSORPTION CAPACITIES WITHIN THE 1976 BOUNDARIES OF URBAN SETTLEMENTS WITH A 1976 POPULATION SIZE OF 50,000 OR MORE

SETTLEMENTS AT 1976 DENSITY GROUPS	SETTLEMENT NAME	1976 POPULATION (000's)	1976 AREA Sq. Km.	1976 GROSS DENSITY PERS/ Sq. Km.	NET URBAN POPULATION ABSORPTION CAPACITIES (000's) HIGH 40,500 PERS/ Sq. Km.	MEDIUM/HIGH 28,000 PERS/ Sq. Km.	NATIONAL AVERAGE 14,000 PERS/ Sq. Km.	MEDIUM/LOW 9,200 PERS/ Sq. Km.	LOW 3,400 PERS/ Sq. Km.
1. LOW DENSITIES	Edku	62.2	238.0	261	9,577	6,604	3,271	2,157	747.1
	Suez	190.2	74.6	2,500	2,837	1,904	859	500	65.5
	Kafr El Zayat	45.2	13.2	3,300	503	334	145	80	1.0
	Port Said	262.2	72.1	3,600	2,659	1,759	749	403	29.0
	Qena	93.8	18.9	5,000	671	434	170	79	--
	Naga Hamadi	19.8	3.5	5,600	122	78	29	13	--
	SUBTOTAL	673.8	420.3	--	16,369	11,111	5,222	3,202	842.6
2. MEDIUM/LOW DENSITIES	Zefta	50.4	7.8	6,500	266	168	59	21	--
	Benha	89.0	11.2	8,000	363	223	67	13	--
	Damietta	93.4	11.0	8,500	352	121	60	8	--
	Kafr El Sheikh	77.5	8.8	8,800	280	170	46	4	--
	Qalyubia	62.5	6.6	9,500	206	123	30	--	--
	Aswan	144.4	15.1	9,600	465	277	66	--	--
	Ismailia	190.4	14.7	10,200	446	262	56	--	--
	Mansoura	257.9	24.8	10,400	748	437	89	--	--
	Dessouk	58.6	5.4	10,800	161	93	17	--	--
	SUBTOTAL	1,024.1	105.4	--	3,287	1,874	490	46	--
3. DENSITIES AT NATIONAL URBAN AVERAGE	Beni Suef	118.1	10.0	11,800	287	162	22	--	--
	Alexandria	2,318.6	192.6	12,000	5,496	3,086	386	--	--
	Menoufia	55.1	4.6	12,000	131	74	9	--	--
	Luxor	92.7	7.4	12,000	207	115	11	--	--
	Gerga	51.1	3.9	13,000	108	60	3	--	--
	Fayoum	167.1	12.8	13,100	350	191	12	--	--
	Shoubra El Kheim	393.7	29.6	13,300	805	435	21	--	--
	Minia	146.4	10.9	13,400	297	160	7	--	--
	Belkas	50.1	3.7	13,600	99	53	--	--	--
	Mit Ghamr	72.2	5.1	14,200	134	70	--	--	--
	Belbeis	69.3	4.8	14,300	127	66	--	--	--
	Mahalla	292.8	19.2	15,200	487	246	--	--	--
	Shebin El Kom	102.8	6.6	15,600	164	82	--	--	--
	Giza	1,232.7	76.6	16,100	1,870	912	--	--	--
	Ekhmim	53.2	3.1	17,300	71	33	--	--	--
	Millawi	74.3	3.9	19,200	83	34	--	--	--
	SUBTOTAL	5,290.2	394.8	--	10,716	5,779	471	--	--
4. MEDIUM/ HIGH DENSITIES	Mitaria	61.2	2.9	20,800	58	21	--	--	--
	Assiut	213.9	9.6	22,300	174	55	--	--	--
	Cairo	5,084.5	220.6	23,300	3,861	1,103	--	--	--
	Zagazig	202.6	7.9	25,700	117	18	--	--	--
	Sohag	101.8	3.9	26,100	58	10	--	--	--
	Kafr El Dawar	160.6	5.6	28,800	65	--	--	--	--
	Abu Kebir	54.8	1.8	31,200	16	--	--	--	--
	Tanta	284.6	8.8	32,300	72	--	--	--	--
	Damietta	93.5	11.0	35,000	58	--	--	--	--
	SUBTOTAL	6,257.5	272.1	--	4,479	1,207	--	--	--
5. HIGH DENSITIES	Damnhour	188.9	4.7	40,500	--	--	--	--	--
TOTAL ALL GROUPS		13,434.5	1,197.3	--	34,851	19,971	6,183	3,248	842.6

SOURCE: NUPS.

data and observation to rank settlements relative to each other. Five groupings of gross density were established as shown in Figure V-2 and the potential absorption at the various density levels was determined as shown in Tables V-4 and 5.

The density groups were determined by using known existing densities in various settlements as follows:

i) High density group (45,000 persons per square kilometer) was equivalent to the existing density in Damanhour (188,927 persons in 4.67 square kilometers or 40,500 persons per square kilometer). At this density (assuming that 55 percent of the area is in non-residential uses), the population could be located on plots of 111 square meters with a structure of two floors containing two dwelling units.

ii) Medium/high density ranges from 20,000 to 40,000 persons per square kilometer with an average of 28,000. Cairo falls within this group with a gross density of 20,000. Also assuming 55 percent non-residential land use, this density means 125 square meter plots with two dwelling units per plot.

iii) Average density group is 14,000 persons per square kilometer. This is the present national urban average gross density. Again, if 55 percent of the land area were non-residential, the population could be accommodated on plots of 188 square meters with an average of 1.5 dwelling units per plot.

iv) Medium/low density group has densities in the range of 6,500 to 10,000 persons per square kilometer. The average is 9,200. The new towns are planned to have densities in this range. If 65 percent of the land area were non-residential the population could still be accommodated on 190 square meter plots with only one family per plot. If cities in this range grew to the average medium/high density level they could absorb an additional 1.7 million persons or almost two times their present population.

TABLE V-5
RANKING OF SETTLEMENTS' ABSOLUTE ABSORPTION CAPACITY

Settlement	Net Absorption Capacity At Medium High Densities (000's)	Ranking
A. 1,000,000 and more		
Edku[1/]	6,602	5
Alexandria	3,086	5
Greater Cairo	2,450	5
Suez	1,904	5
Port Said	1,759	5
B. 400,000 to 999,999		
Mansoura	437	4
Qena	434	4
C. 200,000 to 399,999		
Kafr El Zayat	334	3
Aswan	277	3
Ismailia	262	3
Mahalla	246	3
Benha	223	3
D. 100,000 to 199,999		
Fayoum	191	2
Kafr El Sheikh	170	2
Zefta	168	2
Beni Suef	162	2
Minia	160	2
Qalyubia	123	2
Damietta	121	2
Luxor	115	2
E. 1 to 99,999		
Dessouk	93	1
Shebin El Kom	82	1
Naga Hamadi	78	1
Menouf	74	1
Mit Ghamr	70	1
Belbeis	66	1
Gerga	60	1
Assiut	55	1
Belkas	53	1
Mallawi	34	1
Ekhmim	33	1
Mataria	21	1
Zagazig	18	1
Sohag	10	1
F. Zero Absorption Capacity		
Kafr El Dawar	0	0
Tanta	0	0
Abu Kebir	0	0
Damanhour	0	0

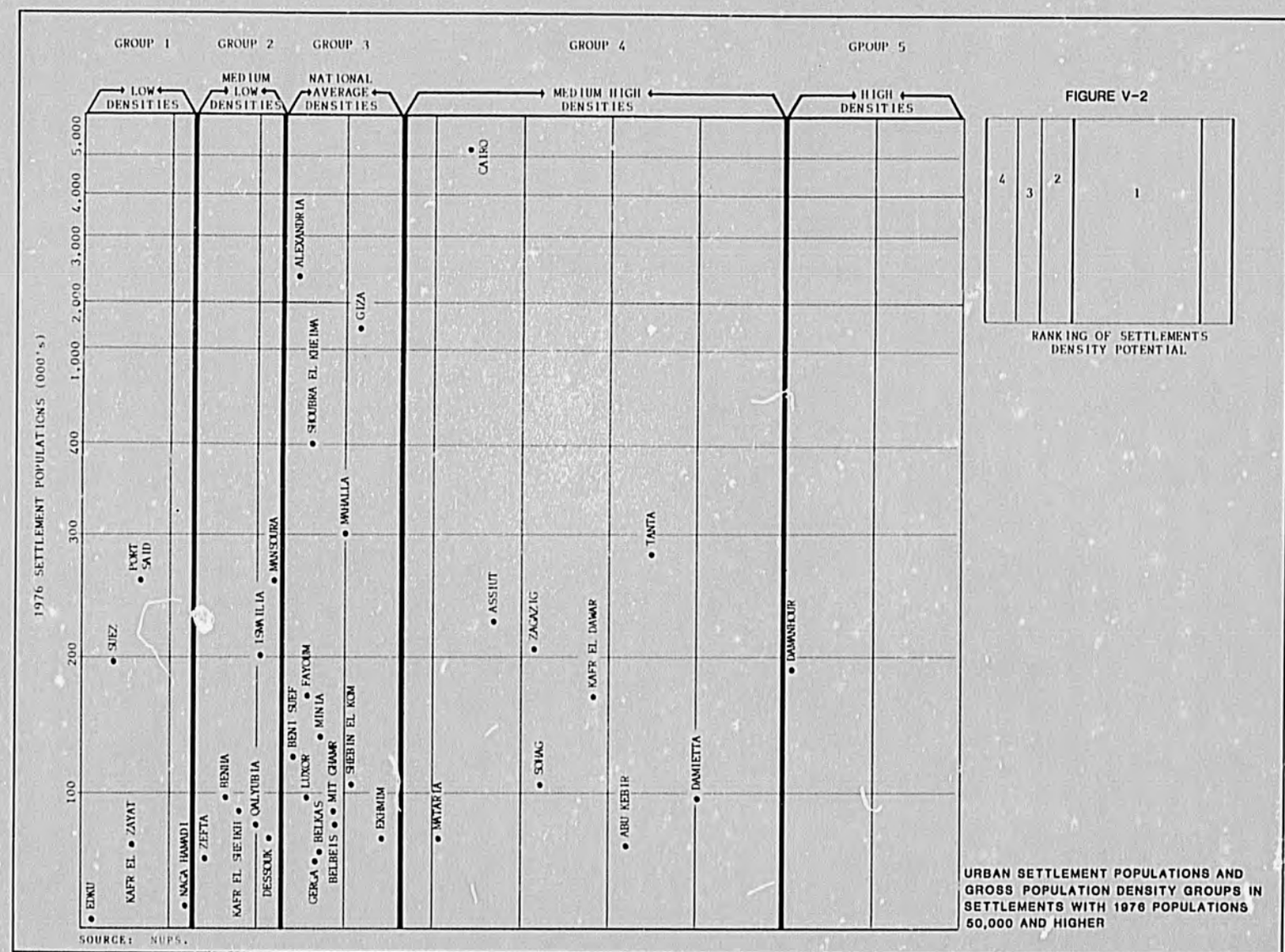
1/ Edku's net population absorption capacity is so great because it has an area which is greater than the area of Greater Cairo, but a small population.

SOURCE: NUPS.

v) The low density group has an average of 3,400 persons per square kilometer. They obviously have a high potential absorption capacity. As a group, cities in this range had a 1976 total population of 673,000 and therefore could absorb 16 times this population if they increased to the medium/high density range.

Table V-5 shows the ranking of the net absolute population absorption capacity at medium/high densities of the various settlements. The ranking divides the settlements into six groups ranging from capacities greater than one million persons to no additional absorption capacity. The first group has significantly higher absorption capacities than any of the others. This capacity is over 14 million: the capacity of the next highest group is only 1.2 million. There is a group of Delta cities which have no absorption capacity at the medium/high density standard and, therefore, could only expand outside their boundaries on arable land.

b. Horizontal Absorption Capacity Outside Settlement Boundaries. The primary constraints to horizontal expansion, of settlements beyond their present boundaries are physical — such as bodies of water, mountains, or



URBAN SETTLEMENT POPULATIONS AND GROSS POPULATION DENSITY GROUPS IN SETTLEMENTS WITH 1976 POPULATIONS 50,000 AND HIGHER

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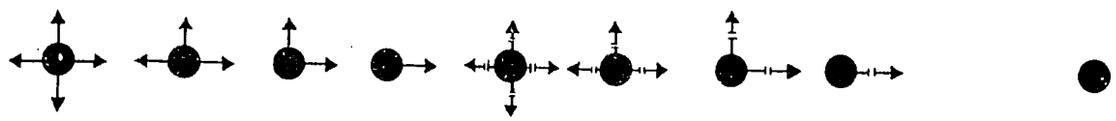
other drastic changes in terrain plus the objective of preventing expansion onto arable land. Settlements without any of these constraints can absorb population much easier than those which are constrained. The cities have been ranked according to the number of potential growth axes which they have and the ease with which this development can occur. The ranking also shows those cities which are constrained by intermediate barriers to expansion on non-arable land or strips of arable land which growth could leap over. Finally, settlements which are totally surrounded by arable land are indicated. The ranking is shown in Figure V-3.

c. Absorption Capacity of Infrastructure Systems. In order for a settlement to absorb more population, it must be able to provide for required urban services through excess capacities in its existing infrastructure networks, expand those systems, or build new systems. Where serious present deficits exist, a settlement's capacity to absorb more population is constrained, as it must not only provide for the new growth, but overcome the service deficit to the existing population. Water and sewer systems were selected for analysis as indicative of infrastructure capacity. The data was primarily derived from the Provincial Water Supplies Project of the General Organization for Potable Water. In addition, the projected standards of consumption adopted by the master plans for Cairo, Alexandria, and the Canal cities were used to measure capacities in these larger cities. Standards for sewer flows were established by subtracting estimated losses and consumption from stand pipes from the water supply standards. Table V-6 shows both water and sewer standards.

FIGURE V-3

PHYSICAL EXPANSION OPTIONS OF THE BOUNDARIES OF EXISTING SETTLEMENTS WITH 1976 POPULATIONS OF 50,000 OR MORE

EXPANSION OPTIONS	SETTLEMENTS WITH NO PHYSICAL BARRIERS TO EXPANSION ON NON-ARABLE LAND				SETTLEMENTS WITH INTERMEDIATE PHYSICAL BARRIERS TO EXPANSION OF NON-ARABLE LAND				SETTLEMENTS WITH NO EXPANSION OPTIONS EXCEPT ON ARABLE LAND
SETTLEMENT SYMBOL									
NO. OF DIRECTIONS OF EXPANSION	4	3	2	1	4	3	2	1	0
RANKING		5	4	3			2	1	0
SETTLEMENT NAMES	-	SUEZ	CAIRO ALEXANDRIA ISMAILIA NAGA HAMADI	ASWAN QENA DAMIETTA EDKU	-	-	PORT SAID ASSIUT MINIA BENI SUEF MALLAWI	GIZA SOHAG BELBEIS MATARIA	SHOUBRA EL KHEIMA MAHALLA TANTA MANSOURA EKHMIM ZAGAZIG DAMANHOUR FAYOUM KAFR EL DAWAR SHEBIN EL KOM LUXOR BENHA KAFR EL SHEIKH MIT GHAMR QUALYUB DESSOUK ABU KEBIR MENOUF GERGA ZEFTA BELKAS KAFR EL ZAYAT

SOURCE: NUPS.

Once the existing design capacity was determined, it was measured against the population absorption capacity. Though measurement of plant capacity does give an indication of the number of persons that could be served, it does not indicate the number of persons actually served. Census data on the number of connections was used as a measure of the system distribution.

In Figures V-4 and 5, the settlements' maximum adequate water and sewerage capacity, measured in percent of the potential population served, are compared with the percent of the families connected to the system. This overall indication of the absorption capacities of urban water and sewerage systems was used to rank the cities according to the highest levels of capacity and distribution of their systems. It was assumed that a city with an excess capacity and a high level of connections is probably in a better position to absorb additional population than a city with a deficit capacity and low number of connections. (Table V-7)

A rough approximation of costs of water and sewer capacity and distribution increases to serve additional population using a per capita measure plus overcoming existing deficits is shown. The variations in costs are due to the relative size of the present deficits compared to potential new population, plus regional variations in costs.

It is more desirable to locate additional population in cities where the least costs per capita are incurred. Cities were, therefore, ranked according to their population absorption

TABLE V-6
MINIMUM WATER AND SEWERAGE CONSUMPTION STANDARDS BY SETTLEMENT SIZE

CONSUMER CLASS	SETTLEMENT SIZE: LESS THAN 50,000		50,000-75,000		75,000-150,000		150,000-250,000	
	%	m^3/d	%	m^3/d	%	m^3/d	%	m^3/d
WATER								
Domestic:								
High Standard	--	--	6	810	6	1,620	6	1,620
Middle Standard	12	600	20	1,875	20	3,450	21	6,360
Low Standard	48	2,160	54	3,645	54	7,290	58	16,058
Stand Pipes	40	800	20	600	20	1,200	15	1,000
Subtotal	100	3,560	100	6,930	100	13,560	100	25,038
Small Trades		500		750		1,356		2,504
Institutional		609		1,152		2,237		4,131
Industrial						1,492		3,580
TOTAL		4,669		8,832		18,645		35,253
Losses	33	1,541	33	2,915	42	7,831	42	14,806
GRAND TOTAL		6,210		11,747		26,476		50,059
GRAND TOTAL PER CAPITA (c/d)		124.2		156.6		176.5		200.0
SEWERAGE								
Percent of Water	59		70		66		68	
Per Capita (c/d)		73.3		109.8		116.3		137.0

SOURCE: NUPS elaboration.

PRESENT HOUSING POLICIES PLACE CONSIDERABLE EMPHASIS ON NEW COMMUNITIES

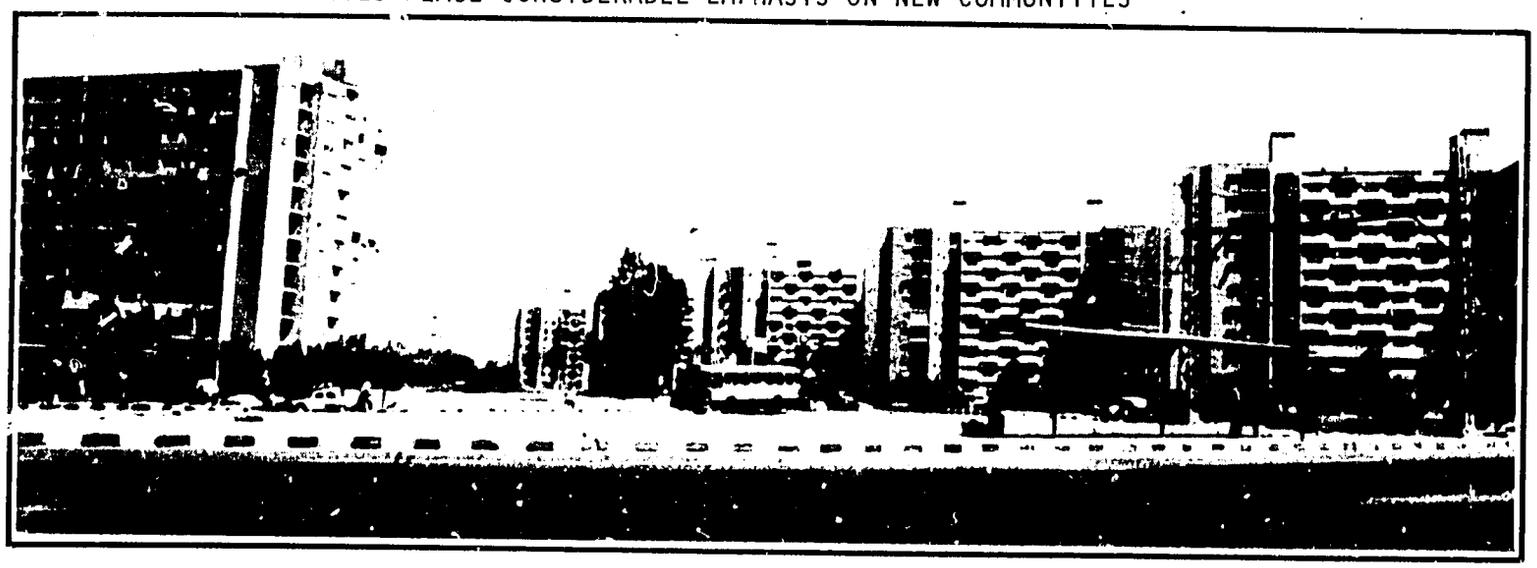


TABLE V-7
RANKING OF INFRASTRUCTURE MODIFIERS OF ABSORPTION CAPACITY

SETTLEMENT	WATER	SEWERAGE	PER CAPITA COSTS	COMBINED
Kafr El Zayat	8	6	7	21
Benha	8	5	6	19
Suez	5	3	7	15
Beni Suef	6	3	7	15
Shebin El Kom	6	4	5	15
Kafr El Sheikh	8	(5)	5	8
Minia	6	(7)	5	4
Naga Hamadi	6	(8)	5	3
Menoufia	6	(8)	5	3
Alexandria	(1)	(3)	7	3
Gerga	7	(8)	3	2
Sohag	8	(8)	2	2
Port Said	(3)	(3)	7	1
Aswan	4	(8)	5	1
Damietta	(2)	(1)	4	1
Mit Ghamr	2	(6)	5	1
Belbeis	5	(8)	4	1
Greater Cairo	(3)	(3)	6	0
Mallawi	4	(8)	4	0
Luxor	4	(8)	4	0
Mansoura	(1)	(4)	4	(1)
Assiut	5	(8)	2	(1)
Ekhmim	4	(8)	3	(1)
Mahalla	(2)	(5)	5	(2)
Zagazig	(1)	(4)	2	(3)
Abu Kebir	4	(8)	0*	(4)
Ismailia	(5)	(5)	5	(5)
Zefta	(3)	(8)	6	(5)
Qena	(3)	(8)	5	(6)
Dessouk	(2)	(8)	4	(6)
Edku	(4)	(8)	5	(7)
Fayoum	(4)	(6)	3	(7)
Qalyubia	(5)	(8)	5	(8)
Mataria	(2)	(8)	2	(8)
Belkas	(8)	(6)	5	(9)
Kafr El Dawar	(2)	(8)	0*	(10)
Damanhour	(2)	(8)	0*	(10)
Tanta	(3)	(8)	0*	(11)

* Since these settlements have no population absorption capacities, they were given zero scores in ranking the costs of expansion of their infrastructural systems.

SOURCE: NUPS.

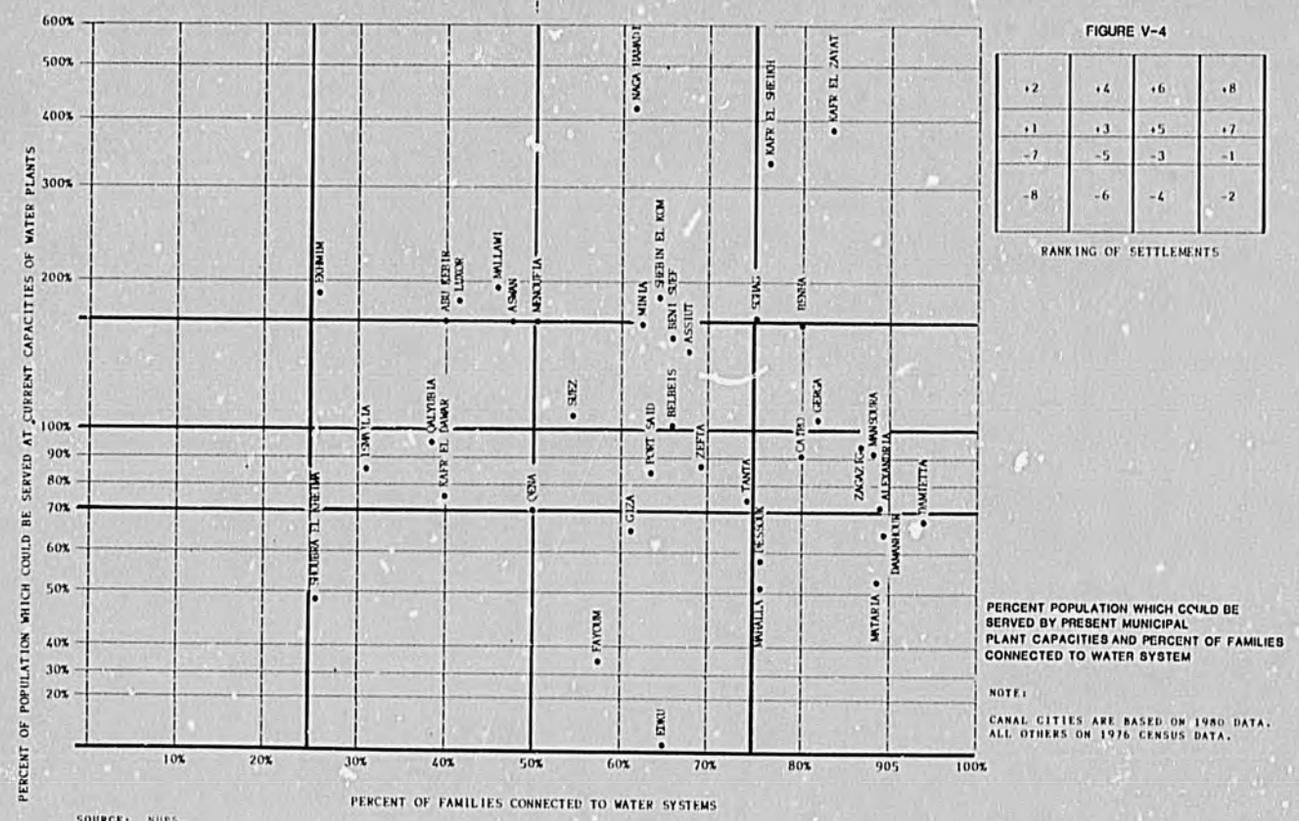


FIGURE V-4

+2	+4	+6	+8
+1	+3	+5	+7
-7	-5	-3	-1
-8	-6	-4	-2

RANKING OF SETTLEMENTS

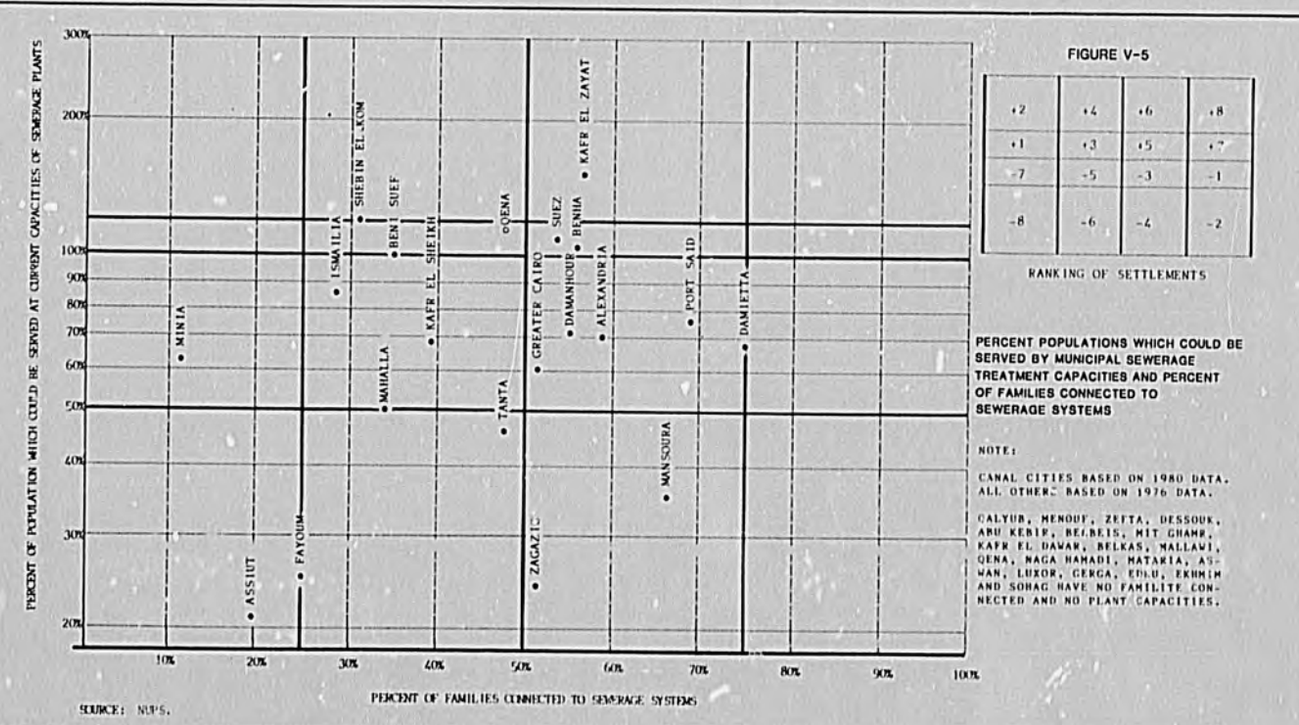


FIGURE V-5

+2	+4	+6	+8
+1	+3	+5	+7
-7	-5	-3	-1
-8	-6	-4	-2

RANKING OF SETTLEMENTS

capacities at medium/high densities and the per capita costs of providing water and sewerage for those populations. This ranking is shown in Figure V-6.

d. Ranking of Settlement's Absorption Capacity. The combined ranking of a settlement's relative ease of population absorption through horizontal expansion beyond its boundaries and its absorption capacity within its boundaries at medium high densities is shown in matrix form in Figure V 7. The matrix also indicates those settlements which are likely to have significant infrastructure deficits and, thus, greater costs when adding new population.

The upper left quadrant shows seven settlements with high absorption capacity both within and outside their boundaries. They have a combined absorption capacity in excess of 12 million. The upper right quadrant indicates settlements with high absorption capacity within their boundaries, but with limited expansion potential outside without development of arable land. The lower left quadrant includes settlements with limited internal absorption capacity, but good prospects for expansion outside their present boundaries. The lower right quadrant is the group of cities with both low internal absorption capacity and no horizontal expansion potential, except at the expense of arable land.

4. Combined Ranking of Urban Settlements' Economic Growth Potential and Population Absorption Capacity

The combined ranking of economic growth potential and population absorption capacity is shown on the matrix in Figure V-8.

Four major groups of settlements result from this final ranking. These groups can be categorized as follows:

a. Settlements With High Development Potential And Absorption Capacity (Upper Left Quadrant). This group includes Greater Cairo and Alexandria, The Canal cities and Edku (in reality an extension of the Alexandria region). This group is likely to continue to grow both in economic function and population given their present momentum and potential.

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b. Settlements In Which Development Inducements May Be Required (Upper Right Quadrant). This group of several settlements have a high potential for population absorption, but relatively weak economic growth potential. Therefore, special inducements would probably be required to stimulate their growth.

c. Settlements In Which Positive Development Constraints Are Required (Lower Left Quandrant). These settlements, largely the Delta cities and Fayoum, have high economic growth potential, but little population absorption capacity except through expansion onto arable land. In the absence of positive development constraints, it can be assumed that these cities will grow through continued urbanization of arable land in spite of national policy to the contrary.

d. Settlements With Limited Growth Potential Or Absorption Capacity (Lower Right Quadrant). All of these settlements are either in the Delta or within the Nile Valley and can only expand on arable land, but they also record low economic growth potential and, therefore, should experience little pressure for growth. Two settlements deserve special comment. Luxor, of course, has economic growth potential in the tourism industry which would not show up strongly in the indices selected for economic growth potential. Its tourism potential should be exploited, while minimizing population growth. Kafr El Zayat is an industrial center, but its further expansion would generate pressure to urbanize the Delta corridor between Cairo and Alexandria. In this sense, it is more like the group 3 settlements than group 4.

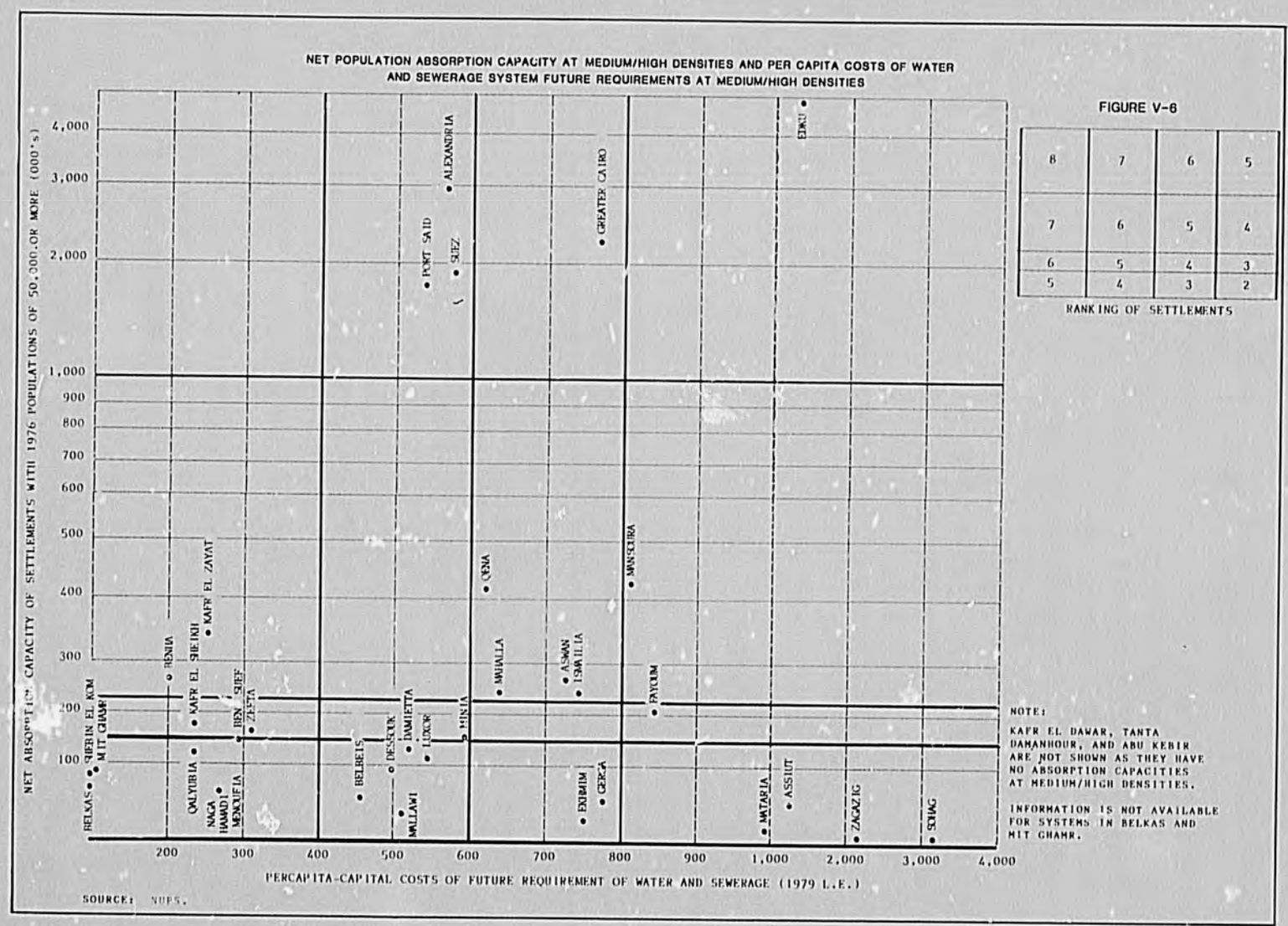

FIGURE V-6

8	7	6	5
7	6	5	4
6	5	4	3
5	4	3	2

RANKING OF SETTLEMENTS

B. Notes on Governorate and Settlement Profiles

In the following pages a data profile of each governorate and each major settlement over 50,000 population is provided. The profiles present basic data on each. The sources of the data and the basic analytical process for preparing the profiles are presented below.

1. Governorate Profiles

a. Section: Major Physical Characteristics. Topographic features describe in general terms the governorate's location and identifies its main land features.

Source: Gamal Hamdan, Shakhsiet Misr, Alam El Kotob Press, Cairo, 1980.

b. Giza, Fayoum; Department of Georgraphy, Cairo University. Areas of governorate, urban land, agricultural land.

Source: Regions Statistical Indicators (1967 Data), CAPMAS Cairo, 1978.

Assessment of reclaimable land, built-up land, loss of arable land.

Source: Performed for PADCO by the Technology Application Center, University of New Mexico, Washington D.C., U.S.A.. 1981.

c. Section: Population.

Source: Regions Statistical Indicators (1976 Data), CAPMAS Cairo, 1978. Rates of population change (r) computed from:

$$P_n = P_o (1 + r)^n.$$

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FIGURE V-7

MATRIX OF MAJOR SETTLEMENTS POPULATION ABSORPTION CAPACITY

ABSOLUTE NET POPULATION ABSORPTION CAPACITY WITHIN SETTLEMENT BOUNDARIES

EASE OF HORIZONTAL EXPANSION OUTSIDE SETTLEMENT BOUNDARIES	5	4	3	2	1	0
5	Suez					
4	Cairo Alexandria Edku*	Ismailia*			Naga Hamadi	
3		Qena*	Aswan	Damietta		
2	Port Said			Beni Suef Minia	Assiut*	
1					Belbeis	
0		Mansoura	Kafr El Zayat Mahalla Benha	Fayoum* Kafr El Shiekh Zefta Qalyubia* Luxor	Dessouk* Shebin El Kom Menoufia Mit Ghamr Belkas Mallawi Ekhmim Mataria Zagazig* Sohag Gerga	Kafr El Dawar* Tanta* Abu Kebir Damanhour*

*Indicates settlements where substantial per capita costs may be incurred in adding new population to water and sewerage systems.

SOURCE: NUPS.

d. Section: Migration. Computed from Population and Housing Census of 1976, for the Governorates of Cairo, Alexandria, Port Said, Suez, Ismailia, CAPMAS, 1978.

e. Section: Settlement Distribution and Absorption Capacities. Settlement Distribution compiled from Regions Statistical Indicators (1976 Data) CAPMAS, Cairo, 1978. Net Urban Population Absorption Capacity: Data compiled and computed. For source and methodology, refer to Part Three, Section V.A.3.

f. Section: Establishments. Number of establishments and number of employed.

Source: Regions Statistical Indicators (1976 Data), CAPMAS, Cairo, 1978.

Percentage change in establishments and in employed computed from above data for the discrete periods shown in table, where the percentage change for each period is based on the value in the initial year of that period. Distribution of establishments by private and public sectors.

Source: Regions Statistical Indicators (1967 Data) CAPMAS, Cairo, 1978.

g. Section: Current Economic Activities.

Agriculture: Identifies principal crops produced in the governorate.

Source: Regions Statistical Indicators (1976 Data), CAPMAS, Cairo, 1978.

Extraction: Identifies principal resources under exploitation.

Source: NUPS staff field trips, interview of governorate officials supplemented by CAPMAS Statistical Indicators of Governorates' Economic Production, 1976 Data.

Services: Identifies the unique activities for which the governorate is known. Source of data from NUPS staff field trips, observations and interviews with governorate officials supplemented by NUPS national consultants.

Industry: Identifies principal manufacturing industries by category: Capital industries at the two digit level, Intermediate and Consumer industries at the two and three digit levels.

Source: Data is based on NUPS staff paper "Spatial Distribution of Industry of Egypt", compiled from Mohamed Ahmed Abdallah "Planning the Industrial Districts of Egypt," Journal of the Society of Engineers, Cairo, No. 4, 1976; supplemented by Regions Statistics Indicators (1976 Data), CAPMAS 1978 and CAPMAS Quarterly Census of Industrial Production for 1972, 1975, 1977; and NUPS Staff field trips observation 1980-1981.

FIGURE V-8

MATRIX OF ECONOMIC GROWTH POTENTIAL AND POPULATION ABSORPTION CAPACITY FOR MAJOR SETTLEMENTS IN EGYPT

POPULATION ABSORPTION CAPACITY \ ECONOMIC GROWTH POTENTIAL	10	9	8	7	6	5	4	3	2	1
10			Suez							
9	Cairo		Alexandria	Edku*						
8					Ismailia					
7				Port Said					Qena*	
6						Aswan				
5							Naga Hamdi		Damietta	
4						Mansoura	Beni Suef Minia			
3				Mahalla	Benha		Assiut	Kafr El Zayat		
2					Fayoum Kafr El Sheikh Belbeis		Zefta Qalyub Luxor			
1	Kafr El Dawar		Shebin El Kom Damanhour*	Menoufia Zagazig*	Mit Ghamr	Mitaria Tanta*	Belkas	Dessouk Sohag Abu Kebir		Millawi Gerga Ekhmim

* Indicates settlements where substantial per capita costs may be incurred in adding new population to water and sewerage systems.

SOURCE: NUPS.

h. Section: Employment. Identifies those employed, aged between 12 and 64 years old.

Source: Compiled from Labor Statistics by Sample for 1964, 1970, 1975, CAPMAS, Cairo, published between 1968 and 1977. Percentage of Employed Population, all percent values refer to Total Number of Employees as the (100 percent) base. All sectors percent in urban add to urban percent of total. All sectors percents in rural add to rural percent of total. Urban percent and rural percent of employment add to total 100 percent. Rates of change (r) computed from $E_n = E_o (1 + r)^n$, and reflect change in number of employed and NOT change in percentage of employed.

2. Urban Settlement Profile

a. Section: Principal Functions of the Settlement. Lists the principal functions for which the settlement is best known. Data based on NUPS staff compilation from field trips, interviews and opinions of national consultants.

b. Section: Population. Data from Regions Statistical Indicators, (1976 Data) CAPMAS, Cairo, 1978. Rate of population change (5) computed from:

$$P_n = P_o (1 + r)^n$$

1980 population projection is based on above formula and is not compared or verified against any 1980 actual enumerations.

c. Section: Area. Data from Census of Buildings and Residential Units, General Census for Population and Housing, 1976 Data, CAPMAS, March 1978.

d. Section: Gross Density. Computed from 1976 data on settlement population, area and total population.

e. Section: Net Population Absorption Capacity. Shows possible additional population within the present boundary of the settlement, computed for densities higher than the present gross density of the settlement.

For data source and methodology, refer to Part Three, Section V.A.3.

f. **Section: Ease of Horizontal Expansion without Encroaching on Arable Land.** This is NUPS staff judgement based on their assessment of settlement's environment from field trips and survey maps.

g. **Section: Infrastructure.** All data except those listed below are from General Census of Buildings and Residential Units, General Census of Population and Housing, 1976 Data, CAPMAS, March 1978. Exceptions:

i. Percentage of Households Connected to Water and Power Data from Regions Statistical Indicators (1976 Data), CAPMAS, Cairo 1978.

ii. The following three items were computed by NUPS Staff, refer to Part Three, Section V.A.3.

1) Maximum number of population which could be served at capacity of existing system.

2) Percent of 1976 Population (Excess or Deficit) connected.

3) Per capita cost for expanding infrastructure systems to meet needs at medium/high density.

h. **Section: Access to Major Sources of Inputs and to Major Markets.** This is data used in a basic gravity model to measure the relative accessibilities of settlements to their major sources of non-labor inputs and to their major markets.

For sources, methodology and computations refer to Part Three, Section V.A.2.

i. **Section: Assessment of Settlement Potential.** The shaded blocks represent a summary of the rankings determined from the assessment of the settlement's present combined potentials of economic growth and population absorption as presented in Tables V-2, 3, 5 and 7 and Figure V-3. The overall assessment of a settlement's potential — as indicated by a dot in the appropriate box — is a reduced version of the information contained in Figure V-8.

3. Data Profiles

Table V-8 lists all governorates and settlements for which profiles are provided and indicates the order in which they appear. Profiles have been grouped by region and governorate.

TABLE V-8
GOVERNORATE AND SETTLEMENT PROFILES

GOVERNORATE	SETTLEMENT	GOVERNORATE	SETTLEMENT	GOVERNORATE	SETTLEMENT
Greater Cairo Region:		Assiut Region:		North Upper Egypt Region:	
Cairo	Greater Cairo	Assiut	Assiut	Beni Suef	Beni Suef
Giza		New Valley		El Fayoum	El Fayoum
Qalyubia	Benha Qalyub	Alexandria Region:		Minia	Mallawi Minia
Delta Region:		Alexandria	Alexandria	South Upper Egypt Region:	
Dakahlia	Bandar El Mataria Belkas Mansoura Mit Ghamr	Beheira	Damanhour Edku Kafr El Dawar	Aswan	Aswan
Damietta	Damietta	Suez Canal Region:		Qena	Luxor Naga Hamadi Qena
Gharbia	Kafr El Zayat Mahalia El Kubra Tanta Zefta	Ismailia	Ismailia	Sohag	Ekhmim Gerga Sohag
Kafr El Shiekh	Dessouk Kafr El Sheikh	Red Sea		Matruh Region:	
Menoufia	Menouf Shebin El Kom	Port Said	Port Said	Matruh	
		Sharkia	Abu Kebir Belbeis Zagazig		
		Suez	Suez		

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

CAIRO Governorate is located on the eastern bank of the Nile, 25 km south of the Nile Delta apex. The northern part of the Governorate is generally a flat plain; the central area, which is south east of Greater Cairo and the remaining southern area of the Governorate, rise to a high plateau reaching an elevation of 400 m above sea level. This plateau cascades towards the Nile Valley forming on its east bank a narrow strip of agricultural land.

AREA OF GOVERNORATE: 552.0 Sq.Km.
AREA OF URBAN LAND : 179.1 Sq.Km.
AREA OF AGRICULTURAL LAND:
Cultivated : 4,441 Ha.
Land Region : _____ Ha.
Reclaimed : _____ Ha.

ASSESSED % OF RECLAIMABLE LAND : --

ASSESSED % OF BUILT-UP LAND
1972 : 27.0
1978 : 32.4

LOSS OF ARABLE LAND: 645 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	3,348,779	100	4,219,853	100	5,084,463	100	3.93	1.88	2.64
RURAL	-	-	-	-	-	-	-	-	-
TOTAL	3,348,779	100	4,219,853	100	5,084,463	100	3.93	1.88	2.64

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	-	6,204	11,957	38,270	14,322	70,753
RURAL	-	-	-	-	-	-
TOTAL	-	6,204	11,957	38,270	14,322	70,753

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	5,084,463	3,861	1,103	-		-
URBAN LESS THAN 50,000	-	-	-	-	-	-	-
VILLAGES			(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	106,978	113,617	123,207	141,967	165,432
NO. OF EMPLOYED	393,180	495,485	527,800	640,654	702,819
% CHANGE IN ESTABLISHMENTS		6.2	8.4	15.2	16.5
% CHANGE IN EMPLOYED		26.0	6.5	21.38	9.7

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	2,498	278,025	162,934	424,794	165,432	702,819
RURAL	-	-	-	-	-	-
TOTAL	2,498	278,025	162,934	424,794	165,432	702,819

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

Very limited on the fringes in Giza

EXTRACTION:

Limestone Quarries

SERVICES :

Seat of national government
Concentration of banks, trade centers and related professional services

OTHER :

Four universities - Center for extensive & intensive tourist industry

INDUSTRY :

CAPITAL :

Various machinery - Electric and electronic equipment - Iron and steel

INTERMEDIATE :

Petroleum products - Steel products - Cement and ceramics - Chemicals & chemical products - Construction materials & services - Leather processing & products

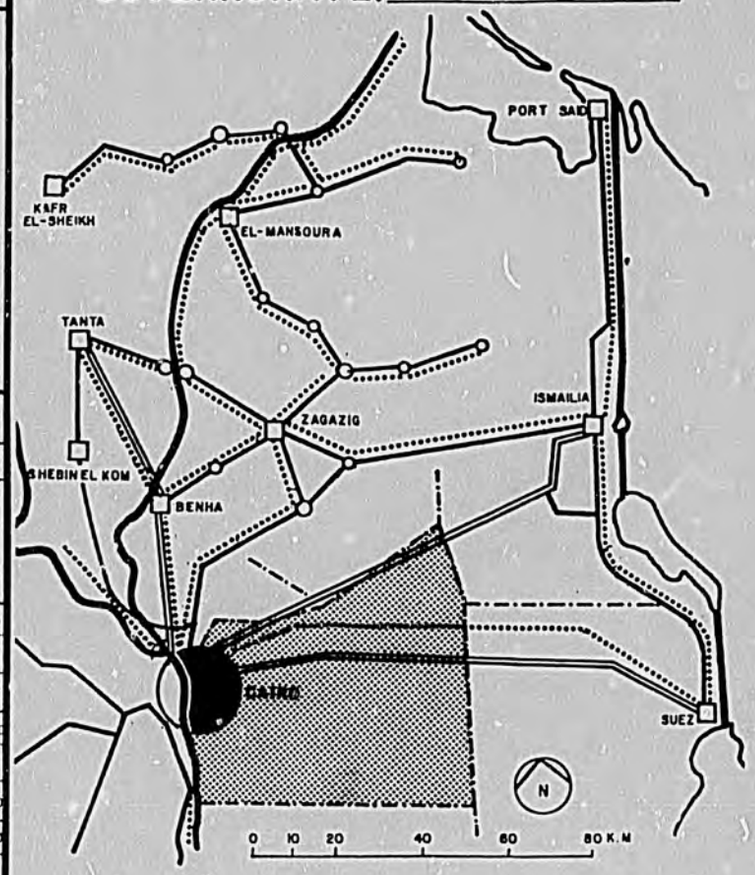
CONSUMER :

Textile
Spinning & weaving
Printing
Synthetics

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTURE INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	22.65	100	8421.4	88.4	19.4	2054	357.1	26.9	1464.5	3691.9	692.2	26.9
		RURAL												
		TOTAL	22.65	100	8421.4	88.4	19.4	2054	357.1	26.9	1464.5	3691.9	692.2	26.9
	1970	URBAN	26.30	100	12068	264.0	41.0	3752	681.0	202.0	1922	3798.0	1034.0	374.0
		RURAL												
		TOTAL	26.30	100	12068	264.0	41.0	3752	681.0	202.0	1922	3798.0	1034.0	374.0
	1975	URBAN	29.5	100	14932	178.0	24.0	4681	903.0	128.0	2294	4949.0	1345.0	430.0
		RURAL												
		TOTAL	29.5	100	14932	178.0	24.0	4681	903.0	128.0	2294	4949.0	1345.0	430.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	22.65	100		1.05	0.23	24.39	4.24	0.32	17.39	43.84	8.22	0.32
		RURAL												
		TOTAL	22.65	100		1.05	0.23	24.39	4.24	0.32	17.39	43.84	8.22	0.32
	1970	URBAN	26.30	100		2.19	0.34	31.09	5.64	1.67	15.93	31.42	8.57	3.10
		RURAL												
		TOTAL	26.30	100		2.19	0.34	31.09	5.64	1.67	15.93	31.42	8.57	3.10
	1975	URBAN	29.5	100		1.20	0.16	31.35	6.05	0.86	15.36	33.15	9.0	2.87
		RURAL												
		TOTAL	29.5	100		1.20	0.16	31.35	6.05	0.86	15.36	33.15	9.0	2.87
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			6.00	18.23	12.50	10.04	10.76	33.57	4.53	0.47	6.69	43.84
		RURAL												
		TOTAL			6.00	18.23	12.50	10.04	10.76	33.57	4.53	0.47	6.69	43.84
	1964-1975	URBAN			5.21	6.36	1.95	7.49	8.43	14.16	4.08	2.66	6.04	25.18
		RURAL												
		TOTAL			5.21	6.36	1.95	7.49	8.43	14.16	4.08	2.66	6.04	25.18
	1970-1975	URBAN			4.26	-7.88	-10.71	4.42	5.64	-9.12	3.54	5.29	5.26	2.79
		RURAL												
		TOTAL			4.26	-7.88	-10.71	4.42	5.64	-9.12	3.54	5.29	5.26	2.79

GOVERNORATE: CAIRO



- National Capital
- Governorate Capital
- Other Main Urban Settlements
- Governorate Boundary
- Main Waterway
- Highway
- Highway (Dual carriageway)
- Railway

Note: Legend applies to all other governorate maps

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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Seat of national government - Seat of government for Cairo and Giza governorates - Main center for capital, intermediate consumer industries - Main center for professional, business and commercial services - Main center for higher education including four universities - Main center for transportation, tourism and archaeology.

Greater Cairo includes the cities of Cairo, Giza and Shoubra El Kheima.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
3,852.2	4,963.8	6,710.9	3.57%	7,721.8

AREA OF SETTLEMENT 326.85 sq km

GROSS DENSITY 236.3 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
5,515.6	3,430.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

Northeast and Southwest Axis.
New communities being developed within a radius of 45 km, are: 10th of Ramadan, 15th of May, 6th of October, El Obour, El Amal.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.8	1,409,457	1,442,679	373,574	417,846

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	(a) 73.9	(b) 54.2	(a) 81.9
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	5,525.7	4,150.3	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	82 D (18)	62 D (38)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	290.53 (1979 L.E)	469.9 (1979 L.E)	N.A. (1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	221	192	64.0	4136	0-4720
	Sharkia	530.4	Zagazig	83	73	21.2		
	Minia	146.4	Minia	241	260	13.1		
MAJOR MARKETS	Qalyubia	290.9	Benha	49	43	21.9	3103	0-5632
	Sharkia	530.4	Zagazig	83	73	8.7		
	Beheira	653.5	Damanhour	156	134	8.6		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH	●							
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

GIZA Governorate is located between the Delta and the Nile Valley of Upper Egypt. It extends in the south west to include the Beheira Oasis in the Western Desert and becomes surrounded to the west by Matruh and New Valley Governorates. Around the Nile, the terrain is generally flat, sloping from a southern elevation of 24m to a northern one of 13m; it also slopes from a western elevation of 20m to an eastern one of 16m above sea level. The Beheira Oasis is an oval-shaped depression 100m below sea level located in the southwestern corner of the governorate at the edge of 100-200m plateau which extends from the pyramids.

AREA OF GOVERNORATE: 1,009.6 Sq.Km.
AREA OF URBAN LAND : 113.64 Sq.Km.
AREA OF AGRICULTURAL LAND:
Cultivated : 72,261 Ha.
Land Region : 1,797 Ha.
Reclaimed : 143 Ha.

ASSESSED % OF RECLAIMABLE LAN : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 3.5
1978 : 4.5

LOSS OF ARABLE LAND: 2,649 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	423,625	31.7	647,226	39.2	1,379,277	57.0	7.3	7.9	7.7
RURAL	902,793	68.3	1,003,155	60.8	1,039,970	43.0	1.8	0.4	0.9
TOTAL	1,336,418	100	1,650,381	100	2,419,247	100	3.6	3.9	3.8

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	10,919	1,108	2,756	14,397	3,843	33,023
RURAL	4,850	147	264	2,372	991	8,624
TOTAL	15,769	1,255	3,020	16,769	4,834	41,647

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	1,232,654	1,870	912			
URBAN LESS THAN 50,000	5	146,623			379.7		
VILLAGES	171	1,039,970	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr. -				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	20,265	23,706	28,531	35,703	48,077
NO. OF EMPLOYED	64,263	96,784	106,027	104,149	133,814
% CHANGE IN ESTABLISHMENTS		16.98	20.35	25.13	34.66
% CHANGE IN EMPLOYED		50.61	9.55	-1.8	28.48

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	328	42,819	30,495	58,800	30,823	101,619
RURAL	29	4,262	17,225	27,933	17,254	32,195
TOTAL	357	47,081	47,720	86,733	48,077	133,814

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE: Maize, Vegetable, Fruits Wheat, Sugar cane

EXTRACTION:

SERVICES: Main gate of upper Egypt of Baharia Oasis. Capital of governorate, Port of Greater Cairo, Regional/National center for trade and services

OTHER: Extensive archaeological sites, Tourism activity

INDUSTRY:

CAPITAL: Engineering industries, Heating and cooling equipments

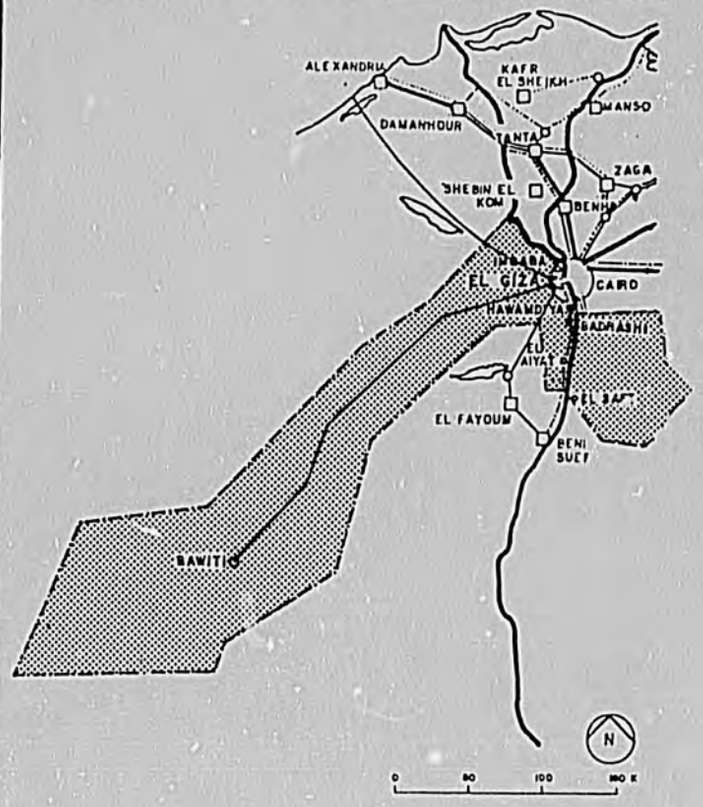
INTERMEDIATE:

CONSUMER: Food products (Tobacco, beer, dates) - Drying - By-products - Spinning and weaving - Sugar cane in Hawamdia

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	12.40	48.34	1824.0	81.1	1.1	428.6	54.7	2.3	249.8	853.5	146.0	6.8
		RURAL	13.25	51.66	1949.3	1315.4	7.2	164.9	41.9	-	191.7	384.5	34.7	9.1
		TOTAL	25.65	100	3773.4	1396.5	8.3	593.5	96.6	2.3	441.5	1038.0	180.7	15.8
	1970	URBAN	9.95	31.85	1827.0	131.0	6.0	355.0	94.0	26.0	240.0	748.0	122.0	105.0
		RURAL	21.29	68.15	3908.0	1527.0	133.0	606.0	161.0	75.0	432.0	634.0	271.0	69.0
		TOTAL	31.24	100	5735.0	1658.0	139.0	961.0	255.0	101.0	672.0	1382.0	393.0	174.0
	1975	URBAN	12.95	47.13	2743.0	153.0	18.0	644.0	195.0	28.0	388.0	1017.0	180.0	120.0
		RURAL	14.53	52.87	3077.0	1938.0	29.0	293.0	29.0	4.0	253.0	265.0	107.0	159.0
		TOTAL	27.48	100	5820.0	2091.0	47.0	937.0	224.0	32.0	641.0	1282.0	287.0	279.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.65	48.34		2.15	0.03	11.36	1.45	0.06	6.62	22.62	3.87	0.18
		RURAL	13.53	51.66		34.86	0.19	4.37	1.11	-	5.08	4.89	0.92	0.24
		TOTAL	26.18	100		37.01	0.22	15.73	2.56	0.06	11.70	27.51	4.79	0.42
	1970	URBAN	9.95	31.85		2.28	0.10	6.20	1.64	0.45	4.18	13.04	2.13	1.83
		RURAL	31.24	68.15		26.63	2.32	10.57	2.81	1.31	7.53	11.06	4.72	1.20
		TOTAL	41.19	100		28.91	2.42	16.77	4.45	1.76	11.71	24.10	6.85	3.03
	1975	URBAN	12.95	47.13		2.63	0.31	11.06	3.35	0.48	6.67	17.48	3.09	2.06
		RURAL	14.53	52.87		33.30	0.50	5.03	0.50	0.07	4.35	4.55	1.84	2.73
		TOTAL	27.48	100		35.93	0.81	16.09	3.85	0.55	11.02	22.03	4.93	4.79
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			0.26	46.25	27.82	- 3.14	9.02	40.71	-0.67	- 2.20	-3.0	45.64
		RURAL			11.59	2.49	48.67	21.69	22.44	-	13.54	20.57	34.25	33.84
		TOTAL			6.98	2.86	46.97	8.03	16.18	63.33	7.00	4.77	12.94	39.93
	1964-1975	URBAN			3.71	5.77	25.16	3.70	11.55	22.88	4.00	1.59	1.90	26.11
		RURAL			4.15	3.52	12.70	5.22	-3.34	-	2.52	3.29	10.23	26.04
		TOTAL			3.94	3.67	15.76	4.15	7.65	24.09	3.39	1.92	4.20	26.07
	1970-1975	URBAN			8.13	3.10	21.97	11.91	14.59	1.48	9.61	6.14	7.76	2.67
		RURAL			-4.78	4.77	-30.40	-14.53	-34.28	-59.41	-10.70	-17.45	-18.49	16.70
		TOTAL			0.29	4.64	-21.69	-0.51	- 2.59	-22.99	- 0.94	- 1.50	- 6.29	9.44

GOVERNORATE: GIZA



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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

QALYUBIA Governorate is located north of Cairo and west of the Delta's Damietta Branch. The terrain is flat agricultural land with no prominent topographic features. The land slopes from a southern elevation of 17 m reaching a north eastern elevation of about 12 m above sea level at the borders of Sharkia Governorate.

AREA OF GOVERNORATE 1,000.1 Sq.Km
AREA OF URBAN LAND 79.8 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 77,225 Ha.
Land Region : 4,672 Ha.
Reclaimed : 181 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 7.1
1978 : 9.4

LOSS OF ARABLE LAND: 261 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	250,510	25.35	381,542	31.49	684,586	40.9	7.26	6.02	6.49
RURAL	737,545	74.65	830,222	68.51	989,420	59.1	1.99	1.77	1.85
TOTAL	988,055	100	1,211,764	100	1,674,006	100	3.46	3.28	3.35

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	9,033	560	2,091	14,966	18,794	35,444
RURAL	7,002	208	326	2,724	9,386	19,646
TOTAL	16,035	768	2,417	17,690	28,180	55,090

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR. DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	3	545,431	1,374	781	118	17	-
URBAN LESS THAN 50,000	5	139,155			422.4		
VILLAGES	185	989,420	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	15,134	16,772	20,450	23,564	30,194
NO. OF EMPLOYED	65,586	95,661	116,316	116,643	148,438
% CHANGE IN ESTABLISHMENTS		10.82	21.93	15.23	28.14
% CHANGE IN EMPLOYED		45.86	21.59	0.28	27.26

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	249	74,635	18,518	45,131	18,767	119,766
RURAL	33	6,700	11,394	21,972	11,427	28,672
TOTAL	282	81,335	29,912	67,103	30,194	148,438

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

Intensive production of vegetables and cash crops. Cotton, linen, Peanuts, Rice, Haizu, Wheat, Clover

EXTRACTION:

SERVICES :

Benha as capital, with related business and trade services. All other settlement as local agriculture and commercial service centers to rural hinter land

OTHER :

INDUSTRY :

CAPITAL :

Electric and electronic equipment

INTERMEDIATE :

Chemicals & dyes - Construction materials - Paper - Fertilizers - Steel forming - Synthetic silk - dying & textile preparation - cotton spinning

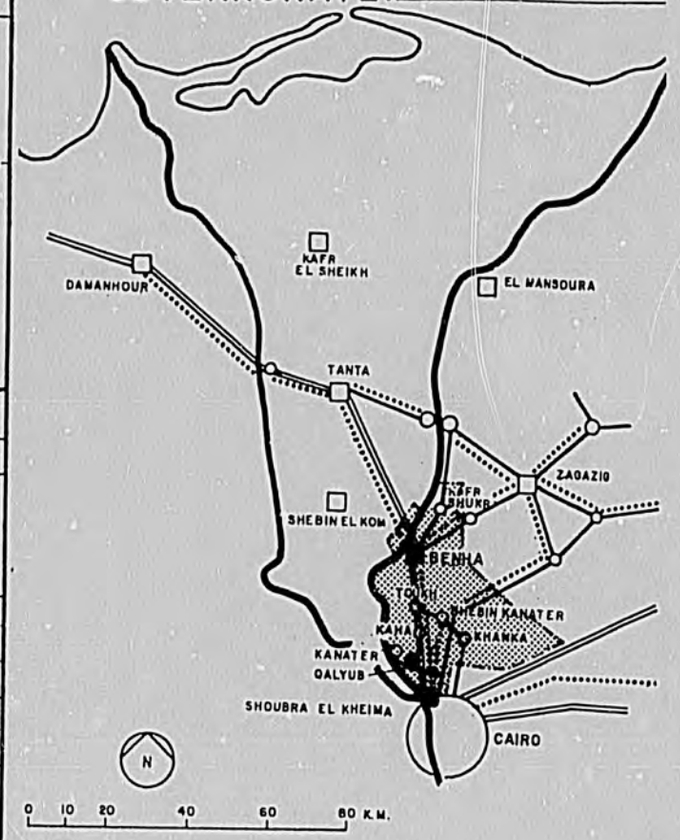
CONSUMER :

Bicycles - Spinning and weaving - Food processing and canning

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000S)	1964	URBAN	12.59	51.46	1415.7	292.7	1.65	502.6	35.5	-	165.3	339.5	71.0	7.43
		RURAL	11.82	48.54	1335.4	943.9	4.9	75.6	6.6	-	83.9	185.7	32.2	2.5
		TOTAL	24.46	100	2751.1	1236.6	6.6	578.3	42.1	-	249.2	525.2	103.2	9.9
	1970	URBAN	8.29	33.74	1117.0	171.0	4.0	371.0	25.0	8.0	133.0	261.0	115.0	29.0
		RURAL	16.29	66.26	2194.0	1342.0	-	397.0	18.0	8.0	98.0	252.0	28.0	51.0
		TOTAL	24.58	100	3311.0	1513.0	4.0	768.0	43.0	16.0	231.0	513.0	143.0	80.0
	1975	URBAN	10.10	38.19	1547.0	241.0	6.0	596.0	42.0	8.0	197.0	347.0	90.0	20.0
		RURAL	16.34	61.81	2504.0	1706.0	-	206.0	19.0	7.0	104.0	341.0	112.0	9.0
		TOTAL	26.44	100	4051.0	1947.0	6.0	802.0	61.0	15.0	301.0	688.0	202.0	29.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.59	51.46		10.64	0.06	18.27	1.29	-	6.01	12.34	2.58	0.27
		RURAL	11.87	48.54		34.31	0.18	2.75	0.24	-	3.05	6.75	1.17	0.09
		TOTAL	24.46	100		44.95	0.24	21.02	1.53	-	9.06	19.09	3.75	0.36
	1970	URBAN	8.29	33.74		5.17	0.12	11.20	0.75	0.24	4.02	7.90	3.47	0.87
		RURAL	16.29	66.26		40.53	-	12.0	0.54	0.24	2.96	7.61	0.84	1.54
		TOTAL	24.58	100		45.70	0.12	23.2	1.29	0.48	6.98	15.51	4.31	2.41
	1975	URBAN	10.10	38.19		5.95	0.15	14.71	1.03	0.2	4.86	8.56	2.22	0.49
		RURAL	16.34	61.81		42.11	-	5.08	0.47	0.2	2.57	8.42	2.76	0.22
		TOTAL	26.44	100		48.06	0.15	19.79	1.50	0.4	7.43	16.98	4.98	0.71
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			- 3.95	- 8.95	14.76	- 5.06	- 5.84	-	- 3.63	- 4.38	8.04	22.70
		RURAL			8.28	5.80	-	27.6	16.72	-	2.59	5.09	-2.32	50.46
		TOTAL			3.08	3.30	-8.35	4.73	0.35	-	- 1.26	- 0.39	5.44	34.87
	1964-1975	URBAN			0.80	- 1.77	11.74	1.55	1.53	-	1.59	0.20	2.16	9.0
		RURAL			5.72	5.38	-	9.10	9.6	-	1.95	5.52	11.33	11.75
		TOTAL			3.52	4.13	-0.87	2.79	3.37	-	1.71	2.45	6.15	-0.86
	1970-1975	URBAN			6.51	6.86	8.11	9.48	10.38	-	7.86	5.70	- 4.9	-7.43
		RURAL			2.64	4.80	-	-13.12	-	-	1.19	6.05	27.73	-34.69
		TOTAL			4.03	5.04	8.11	0.87	6.99	-	5.29	5.84	6.91	-20.29

GOVERNORATE: QALYUBIA



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URBAN SETTLEMENT: **BENHA**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Qalyubia - Center of agricultural marketing and servicing

Capital industries of electric and electronic equipment - Intermediate industry cotton, spinning - Consumer industry of electronic appliances.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
52.7	64.0	89.0	3.33/a	101.5

AREA OF SETTLEMENT 11.16 sq km. | GROSS DENSITY 79.8 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
363.0	223.0	67.0	13.0	

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.2	17,034	18,729	8,402	9,775

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	81.1 (a)	55.5 (b)	88.0 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	147.3	99.1	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	165.5 E 65.5	111.3 E 11.3	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	82.5 (1979 L.E.)	126.9 (1979 L.E.)	N.A. (1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Cairo	6,710.8	Cairo	49	45	23.8	789	0-4720
	Alexandria	2,318.7	Alexandria	172	148	21.0		
	Port Said	262.6	Port Said	197	188	5.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	49	43	8.95	299	0-5632
	Sharkia	530.4	Zagazig	38	37	2.11		
	Dakahlia	655.3	Mansoura	77	67	1.99		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	**3**	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	**0**	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	**0**		1		2											
	RATE OF POPULATION GROWTH	0	1	**2**	3	4			LOW			●					
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	**4**	5										

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URBAN SETTLEMENT: **QUALYUB**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agriculture marketing and servicing.
Food processing industries.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
43.2	49.3	62.7	2.36/a	68.8

AREA OF SETTLEMENT 6.63 sq km | GROSS DENSITY 94.57 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
206.0	123.0	30.0		

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO. OF HOUSEHOLDS	TOTAL NO. OF RESIDENTIAL UNITS	TOTAL NO. OF RESIDENTIAL BLDGS	TOTAL NO. OF ALL BUILDINGS
5.2	12,019	10,228	7,907	8,708

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	38.0 (a)	- 0 - (b)	62.0 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	604.0	- 0 - NO SYSTEM	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	96.3 D (3.7)	D (100)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	86.2 (1979 L.E.)	155.3 (1979 L.E.)	N.A. (1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Cairo	6,710.8	Cairo	15	27	23.6	1383	0-4720
	Alexandria	2,318.7	Alexandria	206	177	21.0		
	Port Said	262.6	Port Said	216	177	5.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	15	27	8.95	519	0-5632
	Sharkia	530.4	Zagazig	70	168	2.11		
	Dakahlia	655.3	Mansoura	125	125	1.99		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW					●			
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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GOVERNORATE: DAKAHLIA

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

DAKAHLIA Governorate is located north east of the Nile Delta and is bisected by its Damietta branch. The terrain is flat agricultural land with no prominent topographical feature. The land slopes from a southern elevation of 12 m in the south to reach sea level in the north and north east. Lake Manzala is situated to the east of the Governorate; it reaches a depth of 1 m with a total area of 764.7 sq km, and is separated from the Mediterranean by rock formations and sand bars.

AREA OF GOVERNORATE: 3,470.9 Sq.Km
AREA OF URBAN LAND : 157.0 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 232,059 Ha.
Land Region : 31,232 Ha.
Reclaimed : 149 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 3.0
1978 : 3.8

GAIN OF ARABLE LAND: 12,439 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	364,223	18.0	469,701	20.55	655,272	24.0	4.3	3.4	3.7
RURAL	1,650,660	82.0	1,815,631	79.45	2,077,484	76.0	1.4	1.4	1.4
TOTAL	2,014,883	100	2,285,332	100	2,732,756	100	2.1	1.8	1.9

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	11,121	2,762	54,776	8,865	15,526	92,350
RURAL	8,745	1,556	26,545	1,011	9,989	47,846
TOTAL	19,866	4,318	81,321	9,876	25,515	140,196

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	4	441,282	1,039	581			
URBAN LESS THAN 50,000	6	213,990			35.9		
VILLAGES	399	2,732,756	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	33,524	35,189	40,477	44,844	57,362
NO. OF EMPLOYED	61,416	69,543	77,313	95,582	111,295
% CHANGE IN ESTABLISHMENTS		4.97	15.03	10.79	27.92
% CHANGE IN EMPLOYED		13.23	11.17	23.63	16.44

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	300	16,235	28,739	50,161	29,039	66,396
RURAL	88	4,723	28,235	40,176	28,323	44,899
TOTAL	388	20,958	56,974	90,337	57,362	111,295

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Cotton, all staples, - Vegetables and citrus fruits - Rice

EXTRACTION:

SERVICES :
Mansoura as capital and regional center for commerce and agriculture

OTHER :
University

INDUSTRY :

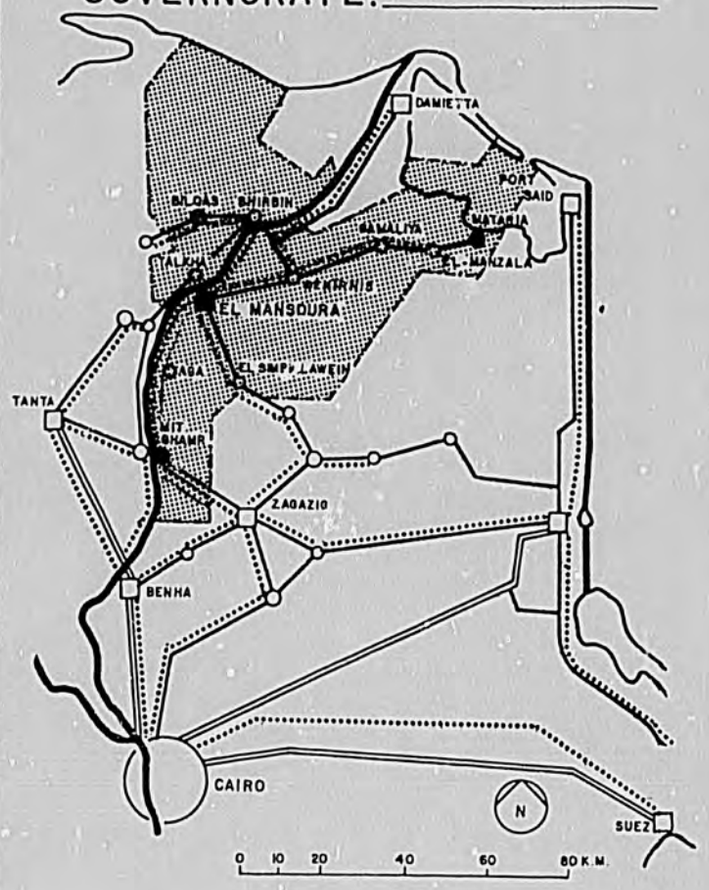
CAPITAL :

INTERMEDIATE :
Chemical industries - Cement

CONSUMER :
Fine textiles - Particle board - Food industries (milk pasteurization) - Fine weaving and spinning

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000S)	1964	URBAN	11.48	47.69	2599.5	434.4	1.6	430.1	116.6	1.6	495.5	937.0	174.4	8.2
		RURAL	12.59	52.31	2851.3	2255.5	-	87.2	36.0	-	143.3	270.0	54.5	4.9
		TOTAL	24.07	100	5450.7	2689.9	1.6	517.3	152.6	1.6	638.8	1206.8	228.9	13.1
	1970	URBAN	5.18	20.5	1313.0	303.0	3.0	303.0	27.0	8.0	200.0	327.0	97.0	45.0
		RURAL	20.02	79.5	5078.0	3866.0	-	267.0	33.0	49.0	214.0	555.0	53.0	41.0
		TOTAL	25.20	100	6391.0	4169.0	3.0	570.0	60.0	57.0	414.0	882.0	150.0	86.0
	1975	URBAN	5.15	20.4	1470.0	273.0	-	283.0	44.0	3.0	289.0	441.0	109.0	28.0
		RURAL	20.06	79.6	5725.0	4168.0	-	383.0	155.0	25.0	220.0	464.0	229.0	81.0
		TOTAL	25.21	100	7195.0	4441.0	-	666.0	199.0	28.0	509.0	905.0	338.0	109.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	11.48	47.69		7.97	0.03	7.89	2.14	0.03	9.09	17.19	3.20	0.15
		RURAL	12.59	52.31		41.38	-	1.60	0.66	-	2.63	4.95	1.0	0.09
		TOTAL	24.07	100		49.35	0.03	9.49	2.80	0.03	11.72	22.14	4.20	0.24
	1970	URBAN	5.18	20.5		4.74	0.05	7.74	0.42	0.12	3.13	5.12	1.52	0.70
		RURAL	20.02	79.5		60.50	-	4.17	0.52	0.77	3.35	8.68	0.83	0.64
		TOTAL	25.2	100		65.24	0.05	8.19	0.94	0.89	6.48	13.80	2.35	1.34
	1975	URBAN	5.15	20.4		3.79	-	3.93	0.61	0.04	4.02	6.13	1.51	0.39
		RURAL	20.06	79.6		57.93	-	5.33	2.16	0.35	3.06	6.45	3.18	1.12
		TOTAL	25.21	100		61.72	-	9.26	2.77	0.39	7.08	12.58	4.69	1.51
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			- 11.38	- 6.0	10.06	-5.84	-24.39	26.4	-15.12	-17.54	-9.78	28.42
		RURAL			9.62	8.98	-	18.65	-1.44	-	6.68	12.02	-0.47	35.37
		TOTAL			7.65	7.30	10.06	1.62	-15.56	59.14	- 7.23	- 5.22	-7.05	31.37
	1964-1975	URBAN			- 5.18	- 4.22	-	-3.80	-8.86	5.49	- 4.90	- 6.85	-4.27	11.18
		RURAL			6.34	5.58	-	13.45	13.28	-	3.69	4.93	13.04	25.48
		TOTAL			2.52	4.56	-	2.30	2.41	25.80	- 2.06	- 2.62	3.54	19.27
	1970-1975	URBAN			2.26	- 2.08	-	-1.37	9.77	-19.62	7.36	5.98	2.33	- 9.49
		RURAL			2.40	1.50	-	7.22	30.94	-13.46	0.55	- 3.58	23.27	13.62
		TOTAL			2.37	1.26	-	3.11	23.98	-14.22	4.13	0.51	16.25	4.74



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URBAN SETTLEMENT: **BANDAR EL MATARIA**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Fishing

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 – 1976	1980 PROJECTION
35.0	41.0	61.1	3.54/a	70.2

AREA OF SETTLEMENT 2.94 sq km | GROSS DENSITY 208 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
58.0	21.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

With difficulty, along the shore of Lake Manzala.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO. OF HOUSEHOLDS	TOTAL NO. OF RESIDENTIAL UNITS	TOTAL NO. OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.2	11,619	11,928	6,100	6,650

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	89.3 (a)	- 0 - (b)	58.6 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	334.0	NO SYSTEM	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	54.6 D (45.4)	D (100)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	333.3 (1979 L.E)	659.7 (1979 L.E)	N.A (1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Gharbia	766.3	Tanta	117	118	19.1	27.9	0-4720
	Port Said	262.6	Port Said	25	35	13.5		
	Alexandria	2,318.7	Alexandria	248	223	13.4		
MAJOR MARKETS	Gharbia	766.3	Tanta	117	118	5.26	3.73	0-5632
	Damietta	142.8	Damietta	57	55	3.49		
	Alexandria	2,318.7	Alexandria	248	223	3.36		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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URBAN SETTLEMENT: **BELKAS**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
30.1	41.1	50.1	3.24/a	56.9

AREA OF SETTLEMENT 3.69 sq km | GROSS DENSITY 135.65 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
99.0	53.0	1.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.4	9,278	10,081	7,012	7,425

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	60.4 (a)	38 (b)	59.0 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	N.A.	N.A.	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	N.A.	N.A.	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	N.A. (1979 L.E.)	N.A. (1979 L.E.)	N.A. (1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Gharbia	766.3	Tanta	67	63	19.1	27	0-4720
	Port Said	262.6	Port Said	115	108	13.5		
	Alexandria	2,318.7	Alexandria	152	147	13.4		
MAJOR MARKETS	Gharbia	766.3	Tanta	65	63	5.26	8	0-5632
	Damietta	142.8	Damietta	55	53	3.49		
	Alexandria	2,318.7	Alexandria	152	147	3.36		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL													
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH						LOW							
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH														
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2																	
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW														
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5																

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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of governorate of Dakahlia - Center for agricultural marketing and servicing - Seat of Mansoura University - Consumer industries of wood construction materials, fine textiles and food processing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
167.5	191.5	257.5	2.73/a	287.3

AREA OF SETTLEMENT 24.83 sq km

GROSS DENSITY 163.9 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
748.0	437.0	89.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.8	54.01[illegible]	56,283	22,928	26,492

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	88.0 (a)	67.1 (b)	83.7 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	250.0	92.9	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	96.9 D (3.1)	36.0 D (64.0)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	214.4 (1979 L.E)	595.2 (1979 L.E)	N.A. (1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Gharbia	766.3	Tanta	52	50	19.1	187	0-4720
	Port Said	262.6	Port Said	216	205	13.5		
	Alexandria	2,318.7	Alexandria	176	153	13.4		
MAJOR MARKETS	Gharbia	766.3	Tanta	52	50	5.26	53	0-5632
	Damietta	142.8	Damietta	65	63	3.44		
	Alexandria	2,318.7	Alexandria	176	153	3.36		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2								●			
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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URBAN SETTLEMENT: **MIT GHAMR**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center of agricultural marketing and servicing - Intermediate industries of fine spinning and weaving.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
40.0	43.7	72.2	3.76/a	83.7

AREA OF SETTLEMENT 5.09 sq km | GROSS DENSITY 141.86 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
134.0	70.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	14,369	17,415	7,758	8,901

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	76.6 (a)	24.2 (b)	78.9 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	413.0	N.A.	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	57.2 D (42.88)	N.A.	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	205.7 (1979 L.E)	N.A. (1979 L.E)	N.A. (1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Gharbia	766.3	Tanta	28	26	19.1	608	0-4720
	Port Said	262.6	Port Said	183	171	13.5		
	Alexandria	2,318.7	Alexandria	151	131	13.4		
MAJOR MARKETS	Gharbia	766.3	Tanta	28	26	5.26	47	0-5632
	Damietta	142.8	Damietta	110	107	3.44		
	Alexandria	2,318.7	Alexandria	151	131	3.36		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL			
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH		LOW	
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH				
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2							
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW				
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5				●		

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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

DAMIETTA Governorate is located on the Mediterranean, at the northern end of the Delta's Damietta Branch. The terrain is flat agricultural and marsh land. It slopes from a southern elevation of 4 m to reach sea level in the north. East of the governorate is Lake Manzala.

AREA OF GOVERNORATE: 589.2 Sq.Km.
AREA OF URBAN LAND : 31.7 Sq.Km.
AREA OF AGRICULTURAL LAND:
Cultivated : 42,516 Ha.
Land Region : 3,590 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 2.2
1978 : 2.8

GAIN OF ARABLE LAND: 6,129 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	96,714	24.9	114,512	26.53	25.6	25.6	2.9	2.2	2.5
RURAL	291,248	75.1	317,084	73.47	74.4	74.4	1.4	2.7	2.2
TOTAL	387,962	100	431,596	100	100	100	1.8	2.6	2.3

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	1,961	625	38,312	771	968	42,837
RURAL	757	249	14,744	319	726	16,795
TOTAL	2,718	874	53,056	1,090	1,694	59,632

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	93.546	58	-			
URBAN LESS THAN 50,000	4	49,269			90.1		
VILLAGES	57	557,115	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	10,433	11,485	13,336	17,989	25,354
NO. OF EMPLOYED	20,776	26,075	31,907	43,741	51,061
% CHANGE IN ESTABLISHMENTS		10.08	16.12	34.89	40.94
% CHANGE IN EMPLOYED		25.5	22.37	37.09	17.35

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	94	7,093	13,649	25,603	13,743	32,696
RURAL	38	1,851	11,573	16,514	11,611	18,365
TOTAL	132	8,944	25222	42,117	25,354	51,061

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Vegetables - Fruits - Cattle breeding - Long staple cotton

EXTRACTION:

SERVICES :
Commercial and service centers

OTHER :
Fishing port

INDUSTRY :

CAPITAL :

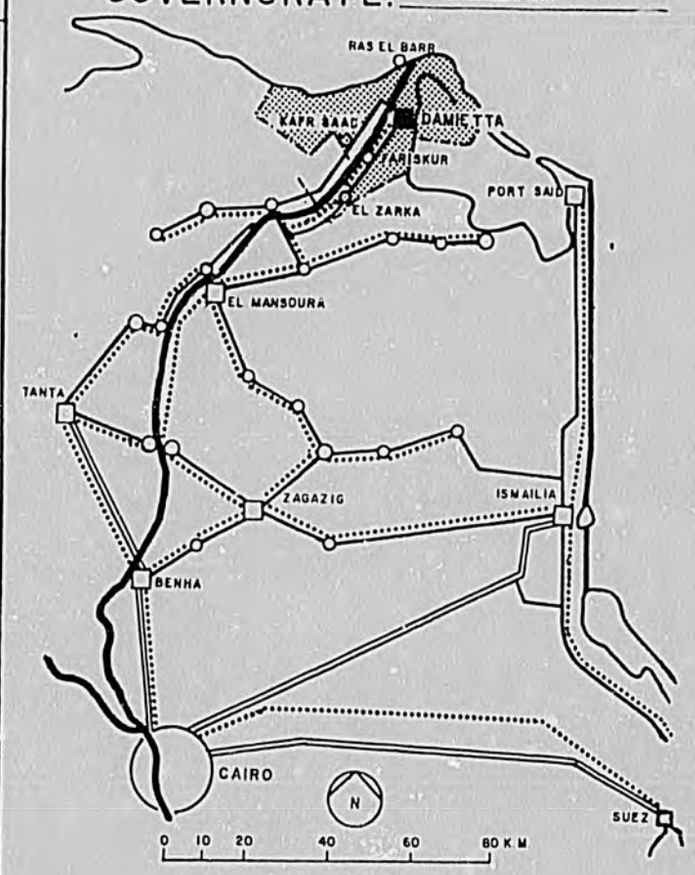
INTERMEDIATE :

CONSUMER :
Fine textiles - Wood products - Furniture Food industries (shrimps, sardine canning, Milk pasteurization)

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000S)	1964	URBAN	11.80	46.19	506.8	72.3	88	209.2	18.8	-	29.4	147.9	27.6	0.7
		RURAL	13.75	53.81	590.4	354.3	33	63.2	9.5	3.3	84.8	57.3	16.6	1.1
		TOTAL	25.55	100	1097.2	426.6	121	272.4	28.3	3.3	114.2	205.2	44.2	1.8
	1970	URBAN	7.63	26.94	371.0	34.0	-	171.0	6.0	-	43.0	103.0	13.0	1.0
		RURAL	20.70	73.06	1006.0	730.0	-	129.0	10.0	-	18.0	70.0	49.0	-
		TOTAL	28.33	100	1377.0	764.0	-	300.0	16.0	-	61.0	173.0	62.0	1.0
	1975	URBAN	8.36	29.76	464.0	37.0	100	203.0	17.0	1.0	74.0	99.0	24.0	8.0
		RURAL	19.74	70.24	1095.0	462.0	-	344.0	32.0	1.0	86.0	111.0	50.0	9.0
		TOTAL	28.10	100	1559.0	499.0	100	547.0	49.0	2.0	160.0	210.0	74.0	17.0
%o OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	11.80	46.19		6.59	0.08	19.07	1.71	-	2.68	13.46	2.52	0.06
		RURAL	13.75	53.81		32.29	0.03	5.76	0.87	0.3	7.73	5.22	1.51	0.10
		TOTAL	25.55	100		38.88	0.11	24.83	2.58	0.3	10.41	18.7	4.03	0.16
	1970	URBAN	7.63	26.94		2.47	-	12.42	0.44	-	3.12	7.48	0.94	0.07
		RURAL	20.70	73.06		53.01	-	9.37	0.73	-	1.31	5.08	3.56	-
		TOTAL	28.33	100		55.48	-	21.79	1.17	-	4.43	12.56	4.50	0.07
	1975	URBAN	8.36	29.76		2.37	0.06	13.02	1.09	0.06	4.75	6.35	1.54	0.51
		RURAL	19.74	70.24		29.64	-	22.07	2.05	0.06	5.52	7.12	3.21	0.58
		TOTAL	28.10	100		32.01	0.06	35.09	3.14	0.12	10.27	13.47	4.75	1.09
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			- 5.20	-12.57	-	- 3.36	-19.0	-	6.34	- 6.03	-12.58	6.9
		RURAL			8.88	12.05	-	11.89	0.78	-	-25.8	3.34	18.07	-
		TOTAL			3.79	9.71	-	1.61	- 9.5	-	-10.4	- 2.84	5.64	-9.42
	1964-1975	URBAN			- 0.80	-6.09	1.16	- 0.27	- 0.89	-	8.39	- 3.6	-1.29	22.68
		RURAL			5.62	2.4	-	15.40	11.0	-10.8	0.13	6.01	10.04	19.11
		TOTAL			3.20	1.42	-1.73	6.34	5.0	- 4.52	3.06	0.21	4.68	20.62
	1970-1975	URBAN			4.47	1.69	-	3.34	20.82	-	10.86	- 0.79	12.26	41.59
		RURAL			1.70	-9.17	-	19.62	23.26	-	31.30	9.22	0.40	-
		TOTAL			2.48	-8.52	-	12.01	22.38	-	19.29	3.88	3.54	56.66

GOVERNORATE: DAMIETTA



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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Damietta - Main fishing port - Consumer industries of: Fine textiles, wood products and furniture, shrimp and sardine canning, dairy products.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
71.8	86.3	93.4	1.66/a	99.7

AREA OF SETTLEMENT 11.0 sq km

GROSS DENSITY 85 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
352.0	121.0	60.6	7.8	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In one direction: North between Nile and Lake Manzala.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	19,026	21,435	8,330	10,198

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	93.3 (a)	74.6 (b)	93.0 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	623.0	743.0	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	66.6 D (33.4)	79.5 D (20.5)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	260.3 (1979 L.E.)	286.0 (1979 L.E.)	N.A. (1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Port Said	262.6	Port Said	269	251	6.9	36	0-4720
	Gharbia	766.3	Tanta	122	118	6.2		
	Dakahlia	655.3	Mansoura	65	63	3.4		
MAJOR MARKETS	Port Said	262.6	Port Said	269	251	4.52	2	0-5632
	Gharbia	766.3	Tanta	122	118	1.62		
	Dakahlia	655.3	Mansoura	65	63	0.53		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL													
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH						LOW							
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH														
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2																	
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW														
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5																

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GOVERNORATE: GHARBIA

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

GHARBIA Governorate is located in the heart of the Nile Delta between its Damietta and Rosetta Branches. The terrain is flat agricultural land with no prominent topographic features. The land slopes from a southern and south eastern elevation of 12 m to a northern and north western elevation of 7 m at the borders of Kafr El Sheikh Governorate. All irrigation canals run from east to north west.

AREA OF GOVERNORATE 1,942.2 Sq.Km
AREA OF URBAN LAND 95.9 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 162,946 Ha.
Land Region : 12,195 Ha.
Reclaimed : 66 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 3.9
1978 : 4.9

LOSS OF ARABLE LAND: 1,959 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	484,481	28.25	599,996	31.56	766,337	33.4	3.6	2.5	2.9
RURAL	1,230,731	71.75	1,301,121	68.44	1,527,966	66.6	0.9	1.6	1.4
TOTAL	1,715,212	100	1,901,117	100	2,294,303	100	1.7	1.9	1.8

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	9,855	5,395	15,512	6,824	14,246	51,842
RURAL	5,586	2,848	5,582	691	4,972	19,679
TOTAL	15,441	8,243	21,094	7,515	19,218	71,521

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	3	627,899	825	414	59	21	-
URBAN LESS THAN 50,000	5	138,438	-	-	345.7	-	-
VILLAGES	312	2,294,303	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO OF ESTABLISHMENTS	31,784	32,540	40,018	42,016	48,031
NO. OF EMPLOYED	95,835	104,372	117,432	142,698	161,659
% CHANGE IN ESTABLISHMENTS		2.38	22.98	4.99	14.32
% CHANGE IN EMPLOYED		8.91	12.51	21.52	13.29

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO OF Est.	NO OF Emp.
URBAN	287	70,084	28,402	57,718	28,689	127,802
RURAL	55	3,549	19,287	30,308	19,342	33,857
TOTAL	342	73,633	47,689	88,026	48,031	161,659

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

Maize, Long and medium staple cotton, Wheat

EXTRACTION:

SERVICES:

Tanta as capital in related business and trade services for the region

OTHER:

University - Tourism and religious fairs

INDUSTRY:

CAPITAL:

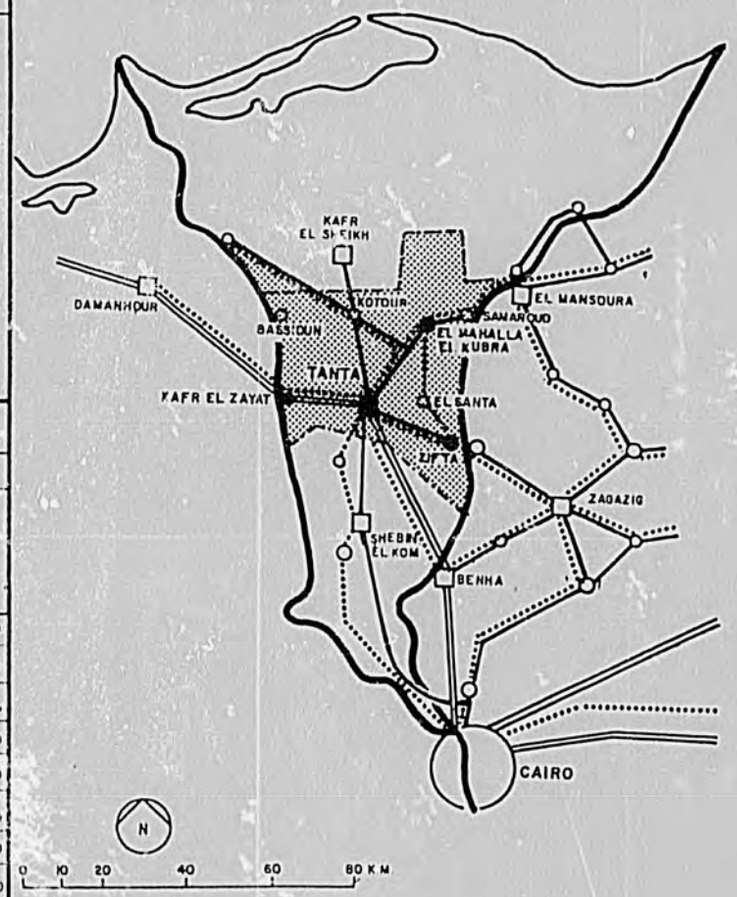
INTERMEDIATE:

CONSUMER:

Spinning and weaving (wool and cotton) - Oil pressing - Particle board - Linen industries - Oils and soap industries

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	10.73	44.58	1994.6	155.7	-	701.1	55.0	-	257.7	677.4	139.6	8.0
		RURAL	13.34	55.42	2479.8	1858.3	-	107.4	24.6	-	166.0	260.0	51.0	12.6
		TOTAL	24.07	100	4474.5	2014.0	-	808.5	79.6	-	423.7	937.4	190.6	20.6
	1970	URBAN	8.62	33.91	1794.0	131.0	-	639.0	54.0	4.0	207.0	564.0	129.0	66.0
		RURAL	16.81	66.09	3497.0	2434.0	4.0	473.0	26.0	-	133.0	279.0	110.0	38.0
		TOTAL	25.43	100	5291.0	2565.0	4.0	1112.0	80.0	4.0	340.0	843.0	239.0	104.0
	1975	URBAN	7.79	31.8	1795.0	119.0	-	636.0	77.0	14.0	262.0	482.0	159.0	46.0
		RURAL	16.71	68.2	3850.0	2922.0	-	243.0	32.0	-	110.0	335.0	168.0	40.0
		TOTAL	24.50	100	5645.0	3041.0	-	879.0	109.0	14.0	372.0	817.0	327.0	86.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	10.97	44.58		3.48	-	15.67	1.21	-	5.76	15.14	3.12	0.18
		RURAL	13.62	55.42		41.53	-	2.40	0.53	-	3.71	5.81	1.14	0.28
		TOTAL	24.59	100		45.01	-	18.07	1.78	-	9.47	20.95	4.26	0.46
	1970	URBAN	8.62	33.91		2.47	-	12.08	1.02	0.08	3.91	10.66	2.44	1.25
		RURAL	16.81	66.09		46.00	.08	8.94	0.49	-	2.51	5.27	2.08	0.72
		TOTAL	25.43	100		48.47	.08	21.02	1.51	0.08	6.42	15.93	4.52	1.97
	1975	URBAN	7.79	31.8		2.11	-	11.27	1.36	0.25	4.64	8.54	2.82	0.81
		RURAL	16.71	68.2		51.76	-	4.30	0.57	-	1.95	5.93	2.98	0.71
		TOTAL	24.50	100		53.87	-	15.57	1.93	0.25	6.59	14.47	5.80	1.52
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			-1.77	-2.88	-	-1.55	-0.37	-	3.65	-3.05	-1.31	35.08
		RURAL			5.73	4.49	-	24.71	0.91	-	-3.69	1.18	12.80	18.48
		TOTAL			2.79	4.03	-	5.31	0.07	-	-3.67	-1.77	3.77	27.00
	1964-1975	URBAN			-0.96	-2.44	-	-0.89	3.05	-	0.15	-3.09	1.18	15.86
		RURAL			4.00	4.11	-	7.42	2.38	-	-3.74	2.30	10.83	10.54
		TOTAL			2.11	3.75	-	0.76	2.85	-	-1.18	-1.25	4.91	13.00
	1970-1975	URBAN			0.11	-1.92	-	-0.09	7.10	25.06	4.71	-0.89	4.18	-7.22
		RURAL			1.92	3.65	-	-13.32	-2.49	-	-3.80	3.66	8.47	1.03
		TOTAL			1.29	3.40	-	-4.70	6.19	25.06	1.80	-0.63	6.27	-3.80



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URBAN SETTLEMENT: **KAFR EL ZAYAT**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.
Main center for vegetable oil extraction, soap manufacture and chemicals.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
30.3	34.1	45.2	2.53/a	50.0

AREA OF SETTLEMENT 13.51 sq km | GROSS DENSITY 34 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
503.0	334.0	145.0	80.0	9.0

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	9,168	10,007	4,928	5,708

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	84.6 (a)	56.3 (b)	87.3 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	172.4	70.7	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	381.4 E 281.4	156.4 E 56.4	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	74.3 (1979 L.E.)	171.6 (1979 L.E.)	N.A. (1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	111	95	24.2	32	0-4720
	Port Said	262.6	Port Said	233	244	7.8		
	Dakahlia	655.3	Mansoura	70	68	5.3		
MAJOR MARKETS	Dakahlia	655.3	Mansoura	70	68	19.07	48	0-5632
	Beheira	653.5	Damanhour	40	39	14.42		
	Sharkia	530.4	Zagazig	71	62	12.64		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								●
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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URBAN SETTLEMENT: **MAHALLA EL KUBRA**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center of agricultural marketing and servicing.

Main center for cotton and wool textiles and carpet industries.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
178.3	225.3	292.9	3.15/a	331.6

AREA OF SETTLEMENT 19.24 sq km | GROSS DENSITY 152.2 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
487.0	246.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	58,505	62,880	28,419	31,188

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	76.3 (a)	33.7 (b)	76.4 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	153.9	147.7	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	52.6 D (47.4)	50.4 D (49.6)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	244.0 (1978 L.E)	397.0 (1978 L.E)	N.A. (1978 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	155	133	24.2	376	0-4720
	Port Said	262.6	Port Said	243	230	7.8		
	Dakahlia	655.3	Mansoura	20	19	5.3		
MAJOR MARKETS	Dakahlia	655.3	Mansoura	20	19	19.07	1072	0-5632
	Beheira	653.5	Damanhour	91	88	14.42		
	Sharkia	530.4	Zagazig	108	94	12.64		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW		●						
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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URBAN SETTLEMENT: **TANTA**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Gharbia - Regional transportation center of the Delta - Center of agricultural marketing and servicing - Seat of Tanta University - Consumer industries of: oil pressing, linen textiles, wood constuction materials.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
184.3	230.0	284.6	2.75/a	317.2

AREA OF SETTLEMENT 8.81 sq km

GROSS DENSITY 323 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
72.0	-	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	58,285	59,898	25,585	2,[illegible]081

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	74.0 (a)	47.0 (b)	85.5 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	223.1	130.3	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	78.4 D (22.6)	45.8 D (54.2)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	NOT * CALCULATED (1979 L.E.)	NOT * CALCULATED (1979 L.E.)	N.A. (1979 L.E.)

* NO CAPACITY AT MEDIUM HIGH DENSITY

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	128	110	24.2	134	0-4720
	Port Said	262.6	Port Said	210	200	7.8		
	Dakahlia	655.3	Mansoura	52	52	5.3		
MAJOR MARKETS	Dakahlia	655.3	Mansoura	52	50	19.07	294	0-5632
	Beheira	653.5	Damanhour	63	61	19.42		
	Sharkia	530.4	Zagazig	56	49	12.64		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL													
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW									
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH														
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2																	
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW														
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5																

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URBAN SETTLEMENT: **ZEFTA**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
31.4	37.9	50.4	3.0/a	56.7

AREA OF SETTLEMENT 7.8 sq km | GROSS DENSITY 64.63 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
266.0	168.0	59.0	21.0	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.5	9,208	10,725	6,420	7,368

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	68.0 (a)	- 0 - (b)	73.9 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	44.7	- 0 -	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	88.7 D (11.3)	- 0 - D (100)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	123.8 (1970 L E)	187.2 (1970 L E)	N.A. (1970 L E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	155	136	24.2	25	0-4720
	Port Said	262.6	Port Said	192	182	7.8		
	Dakahlia	655.3	Mansoura	45	44	5.3		
MAJOR MARKETS	Dakahlia	655.3	Mansoura	45	44	19.07	103	0-5632
	Beheira	653.5	Damanhour	88	85	14.42		
	Sharkia	530.4	Zagazig	27	23	12.64		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	**2**	3	4	5	
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	**0**	1	2	3	4	5	
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	**HIGH**		MED.		LOW		
ECONOMIC GROWTH	SETTLEMENT SIZE	**0**		1		2		
	RATE OF POPULATION GROWTH	0	**1**	2	3	4		
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	**3**	4	5	

OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH		LOW	
ABSORPTION CAPACITY POTENTIAL	HIGH				
	LOW				●

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GOVERNORATE: KAFR EL SHEIKH

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

KAFR EL SHEIKH Governorate is located at the northern base of the Nile Delta. The Governorate is generally flat agricultural land. Highest elevation is 7 m in the south, sloping north west to reach sea level at the Mediterranean shore. Lake Borollos is situated in the north a few kilometers east of the Rashid Branch and has an area of 579.4 sq km. The lake is shallow reaching 1 m at its deepest point, with a chain of sand bars separating it from the Mediterranean.

AREA OF GOVERNORATE 3,437.1 Sq.Km
AREA OF URBAN LAND 84.1 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 154,335 Ha.
Land Region : 23,619 Ha.
Reclaimed : 696 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.5
1978 : 2.0

GAIN OF ARABLE LAND: 22,691 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	165,353	17.0	212,186	19.0	291,859	20.8	4.2	3.2	3.6
RURAL	807,666	83.0	906,309	81.0	1,111,609	79.2	1.9	2.1	2.0
TOTAL	973,019	100	1,118,495	100	1,403,468	100	2.3	2.3	2.3

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	2,353	3,940	4,332	353	828	11,806
RURAL	1,221	2,285	2,451	99	663	6,719
TOTAL	3,574	6,225	6,783	452	1,481	18,525

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	2	136,187	441	263			
URBAN LESS THAN 50,000	6	155,672			303,8		
VILLAGES	183	1,403,468	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	12,811	13,173	16,755	18,849	24,614
NO. OF EMPLOYED	22,098	24,435	30,055	39,112	40,870
% CHANGE IN ESTABLISHMENTS		2.83	27.20	12.50	30.60
% CHANGE IN EMPLOYED		10.58	23.00	30.14	4.50

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	142	3,139	11,293	19,020	11,435	22,159
RURAL	63	1,488	13,116	17,223	13,179	18,711
TOTAL	205	4,627	24,409	36,243	24,614	40,870

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE: Cotton long staple, Maize, Wheat, Vegetables, Cattle breeding, Linen

EXTRACTION:

SERVICES:
Kafr El Sheikh as capital with related business and trade services for the region

OTHER:
Land reclamation

INDUSTRY:

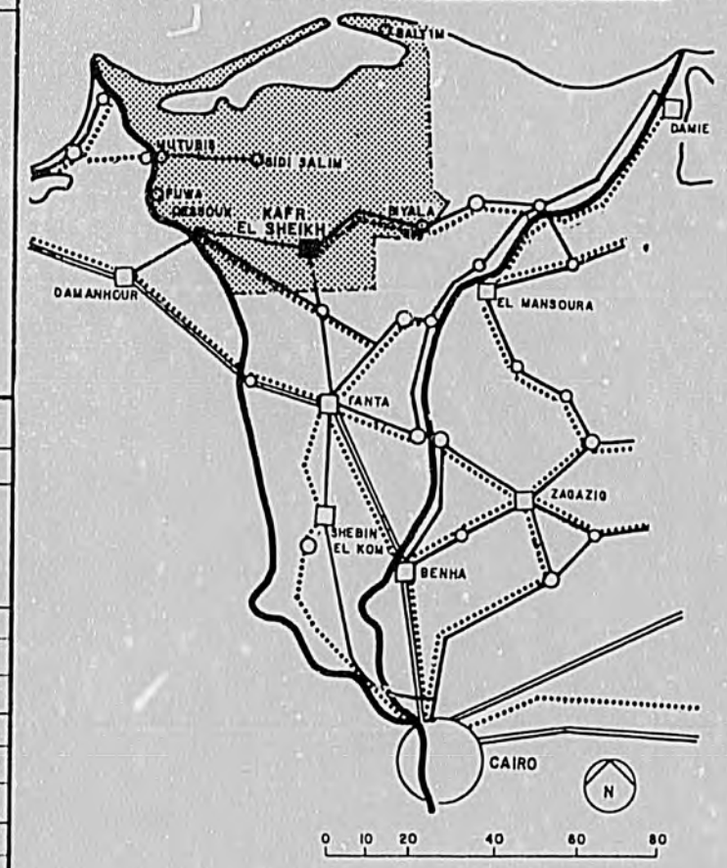
CAPITAL:

INTERMEDIATE:
Red bricks

CONSUMER:
Food industries - Oil and soap - Compressed wood

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	12.83	44.39	1392.9	485.4	-	227.2	39.5	0.63	220.0	345.8	70.6	3.8
		RURAL	16.09	55.61	1745.0	1527.0	-	28.2	9.41	-	44.6	112.3	22.3	1.3
		TOTAL	28.92	100	3138.0	2012.4	-	255.4	49.0	0.63	264.5	458.1	92.9	5.0
	1970	URBAN	4.95	17.85	614.0	228.0	-	84.0	18.0	3.0	85.0	156.0	36.0	4.0
		RURAL	22.79	82.15	2827.0	2399.0	-	114.0	25.0	-	61.0	85.0	126.0	17.0
		TOTAL	27.74	100	3441.0	2627.0	-	198.0	43.0	3.0	146.0	241.0	162.0	21.0
	1975	URBAN	5.24	20.6	731.0	241.0	200	107.0	15.0	6.0	139.0	160.0	47.0	14.0
		RURAL	20.22	79.4	2818.0	2203.0	-	180.0	11.0	15.0	110.0	193.0	95.0	11.0
		TOTAL	25.46	100	3549.0	2444.0	200	287.0	26.0	21.0	249.0	353.0	142.0	25.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.83	44.39		15.47	-	7.24	1.26	0.02	7.01	11.02	2.25	0.12
		RURAL	16.09	55.61		48.66	-	0.90	0.30	-	1.42	3.58	0.71	0.04
		TOTAL	28.92	100		64.13	-	8.14	1.56	0.02	8.43	14.60	2.96	0.16
	1970	URBAN	4.95	17.85		6.63	-	2.44	0.52	0.09	2.47	4.53	1.05	0.12
		RURAL	22.79	82.15		69.72	-	3.31	0.73	-	1.72	2.41	3.66	0.49
		TOTAL	27.74	100		76.35	-	5.75	1.25	0.09	4.24	7.00	4.71	0.61
	1975	URBAN	5.24	20.6		6.79	0.06	3.01	0.42	0.17	3.92	4.51	1.33	0.39
		RURAL	20.22	79.4		62.07	-	5.07	0.31	0.42	3.10	5.44	2.68	0.31
		TOTAL	25.46	100		68.86	0.06	8.08	0.73	0.59	7.02	9.95	4.01	0.7
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			-13.64	-12.6	-	-16.58	-13.11	26.01	-15.85	-13.26	-11.22	1.03
		RURAL			8.03	7.53	-	23.26	16.28	-	5.23	- 4.65	28.87	43.37
		TOTAL			1.54	4.44	-	- 4.24	- 2.16	26.01	9.90	-10.71	9.27	23.85
	1964-1975	URBAN			- 5.86	- 6.33	-	- 6.84	- 8.8	20.49	- 4.17	- 7.0	- 3.70	11.95
		RURAL			4.35	3.33	-	16.84	1.42	-	8.21	4.92	13.18	19.70
		TOTAL			1.12	1.77	-	1.06	- 5.35	31.88	- 0.55	- 2.37	3.86	14.60
	1970-1975	URBAN			3.49	1.11	-	4.48	- 3.65	13.86	9.84	1.29	5.33	25.06
		RURAL			- 0.06	- 1.70	-	9.14	-16.42	-	11.79	16.4	- 5.64	-8.71
		TOTAL			0.62	- 1.4	-	7.42	-10.06	38.92	10.68	7.63	- 2.44	3.49



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URBAN SETTLEMENT: **DESSOUK**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

Intermediate industries of red bricks and compressed wood and particle board.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 – 1976	1980 PROJECTION
39.5	45.6	58.7	2.51/a	64.8

AREA OF SETTLEMENT 5.41 sq km | GROSS DENSITY 108.4 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
161.0	93.0	17.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.3	11.129	14,748	6,795	7,889

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	75.1 (a)	- 0 - (b)	79.9 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	33.4	- 0 -	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	57.0 D (43.0)	- 0 - D (100)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	188.2 (1970 L.E)	315 (1970 L.E)	(1970 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	82	73	10.3	35	0-4720
	Gharbia	766.3	Tanta	65	63	7.6		
	Port Said	262.6	Port Said	296	243	6.4		
MAJOR MARKETS	Alexandria	2,318.7	Alexandria	82	73	10.07	35	0-5632
	Cairo	6,710.8	Cairo	160	147	3.69		
	Gharbia	766.3	Tanta	85	63	2.63		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL													
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW									
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH														
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2																	
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW														
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5																●

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URBAN SETTLEMENT: **KAFR EL SHEIKH**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Kafr El Sheikh - Center for agricultural marketing and servicing - Consumer industries of food processing, oil pressing and soap manufacturing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
38.6	45.5	77.5	4.45/a	92.3

AREA OF SETTLEMENT 8.84 sq km

GROSS DENSITY 87.7 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
280.0	170.0	46.0	4.0	

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.1	15,266	15,517	7,569	8,938

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	77.2 (a)	38.9 (b)	82.1 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	238.0	49.5	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	328.3 E 228.3	63.9 D (36.1)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	9.4 (1970 L.E)	233.6 (1970 L.E)	(1976 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	115	105	10.3	52	0-4720
	Gharbia	766.3	Tanta	37	36	7.6		
	Port Said	262.6	Port Said	265	237	6.4		
MAJOR MARKETS	Alexandria	2,318.7	Alexandria	115	105	10.07	33	0-5632
	Cairo	6,710.8	Cairo	143	131	3.69		
	Gharbia	766.3	Tanta	50	49	2.36		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL													
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH						LOW							
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW																	
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2		ABSORPTION CAPACITY POTENTIAL	HIGH														
	RATE OF POPULATION GROWTH	0	1	2	3	4																	
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5		LOW														

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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

MENOUFIA Governorate is located between the two branches of the Nile; to the east the Damietta Branch and to the west the Rosetta Branch. Menoufia is situated at the head of the Delta 26 km north of Cairo. The Damietta Branch is 2 m' higher than the Rosetta Branch; the land slopes from east to west with a steeper slope to the north west and is used for the alignment of irrigation canals running in these directions. 100% of the land is agricultural with no prominent topographic features; it has a slope of 1:8000 from south to north.

AREA OF GOVERNORATE 1,532.1 Sq.Km
AREA OF URBAN LAND 102.8 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 130,359 Ha.
Land Region : 3,808 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 4.9
1978 : 6.6

LOSS OF ARABLE LAND: 2,310 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	183,660	13.63	237,872	16.3	336,691	19.7	4.4	3.5	3.9
RURAL	1,164,293	86.37	1,220,176	83.7	1,374,291	80.3	0.8	1.2	1.0
TOTAL	3,347,953	100	1,458,048	100	1,710,982	100	1.3	1.6	1.5

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	12,966	2,902	4,966	3,889	4,505	29,228
RURAL	14,555	2,504	4,171	988	3,483	25,701
TOTAL	27,521	5,406	9,137	4,877	7,988	54,929

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000's)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	2	157,975	295	156			
URBAN LESS THAN 50,000	7	178,716			316,704		
VILLAGES	298	1,374,291	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 " hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	19,832	20,201	24,126	28,362	28,058
NO. OF EMPLOYED	31,482	40,330	48,036	53,880	55,884
% CHANGE IN ESTABLISHMENTS		18.61	19.43	17.56	3.72
% CHANGE IN EMPLOYED		28.11	19.11	12.17	3.72

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	129	12,665	10,728	19,391	10,857	32,056
RURAL	38	509	17,163	23,319	17,201	23,828
TOTAL	167	13,174	27,891	42,710	28,058	55,884

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Cotton, Maize, Wheat, Vegetables, Squabs and Poultry

EXTRACTION:

SERVICES :
Shebin El Kom as capital with related business and trade services for the region

OTHER :

INDUSTRY :

CAPITAL :

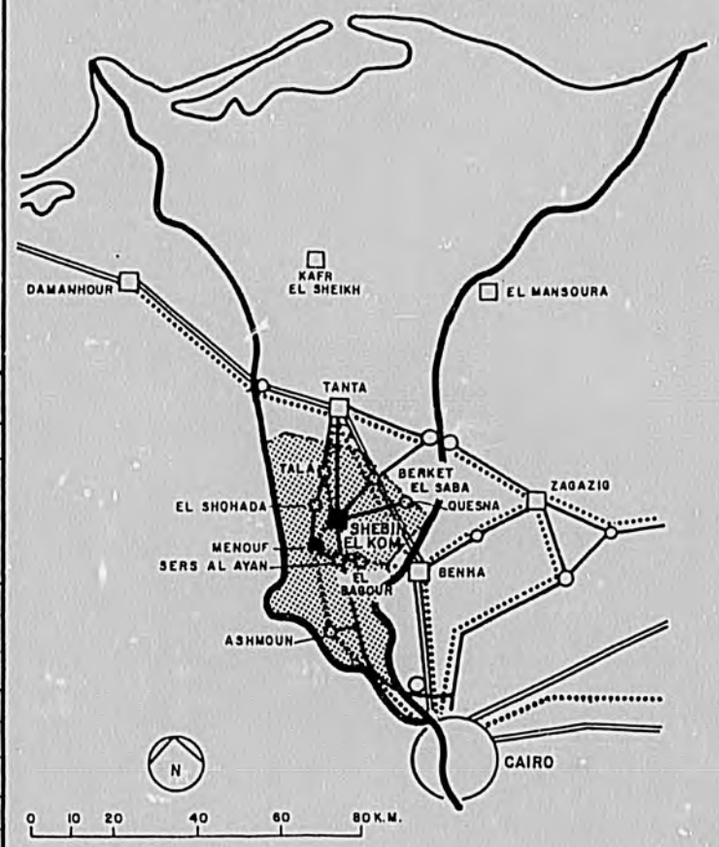
INTERMEDIATE :

CONSUMER :
Fine spinning and weaving - Food industries - Milk pasteurization

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	12.29	49.58	1823.6	522.6	1.1	313.7	47.1	-	253.8	614.6	69.5	1.1
		RURAL	12.50	50.42	1854.5	1487.0	5.5	43.0	6.2	-	94.2	192.7	23.6	2.2
		TOTAL	24.79	100	3678.0	2009.7	6.6	356.8	53.3	-	348.0	807.3	93.1	3.3
	1970	URBAN	4.12	17.99	657.0	196.0	-	139.0	19.0	4.0	70.0	181.0	35.0	13.0
		RURAL	18.79	82.01	2995.0	2208.0	-	137.6	35.0	28.0	120.0	320.0	144.0	3.0
		TOTAL	22.91	100	3652.0	2404.0	-	276.0	54.0	32.0	190.0	501.0	179.0	16.0
	1975	URBAN	4.01	18.53	709.0	220.0	100	120.0	20.0	1.0	82.0	219.0	32.0	14.0
		RURAL	17.65	81.47	3118.0	2127.0	-	188.0	26.0	17.0	162.0	466.0	111.0	21.0
		TOTAL	21.66	100	3827.0	2347.0	100	308.0	46.0	18.0	244.0	685.0	143.0	35.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.41	49.58		14.21	0.03	8.53	1.28	-	6.90	16.71	1.89	0.03
		RURAL	12.62	50.42		40.43	0.15	1.17	0.17	-	2.56	5.24	0.64	0.06
		TOTAL	25.03	100		54.64	0.18	9.70	1.45	-	9.46	21.95	2.53	0.09
	1970	URBAN	4.12	17.99		5.37	-	3.82	0.52	0.11	1.9	4.96	0.96	0.35
		RURAL	18.79	82.01		60.47	-	3.75	0.95	0.76	3.3	8.76	3.94	0.08
		TOTAL	22.91	100		65.84	-	7.57	1.47	0.87	5.2	13.72	4.90	0.43
	1975	URBAN	4.01	18.51		5.76	0.03	3.13	0.52	0.03	2.14	5.73	0.83	0.36
		RURAL	17.65	81.46		55.88	-	4.92	0.68	0.44	4.23	12.17	2.90	0.55
		TOTAL	21.66	100		61.64	0.03	8.05	1.20	0.47	6.37	17.90	3.73	0.91
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			- 17.01	-16.35	-	-13.57	-15.12	-	-21.47	-20.37	-11.44	41.16
		RURAL			7.99	6.59	-	19.30	28.71	-	4.04	8.45	30.18	5.09
		TOTAL			- 0.12	2.98	-	- 4.28	0.21	-	-10.08	- 7.95	10.9	26.26
	1964-1975	URBAN			- 8.59	- 7.87	- 0.87	- 8.74	- 2.78	-	-10.27	- 9.38	- 7.05	23.12
		RURAL			4.72	3.25	-	13.40	12.96	-	4.93	8.03	14.09	20.47
		TOTAL			0.36	1.41	-17.18	- 1.34	-1.34	-	- 3.23	- 1.49	3.90	21.44
	1970-1975	URBAN			1.52	2.31	-	- 2.94	0	-27.73	3.16	3.81	- 1.79	0
		RURAL			0.80	- 0.75	-	6.33	-5.95	- 9.98	6.0	7.52	- 5.21	38.92
		TOTAL			0.94	- 0.05	-	2.19	-3.21	-11.51	5.0	6.26	- 4.49	15.66

GOVERNORATE: MENOUFIA



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URBAN SETTLEMENT: **MENOUF**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
26.6	48.3	55.1	4.66	66.1

AREA OF SETTLEMENT 4.6 sq km | GROSS DENSITY 119.9 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
131.0	74.0	9.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.3	10,306	12,182	7,743	9,163

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	50.5 (a)	- 0 - (b)	69.1 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	89.4	NO SYSTEM	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	162.2 E 62.2	D (100)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	59.5 (1979 L.E)	218.9 (1979 L.E)	N.A. (1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	160	160	11.6	111	0-4720
	Cairo	6,170.8	Cairo	72	62	8.9		
	Gharbia	766.3	Tanta	36	35	7.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	72	62	6.92	47.92	0-5632
	Alexandria	2,318.7	Alexandria	160	160	2.65		
	Gharbia	766.3	Tanta	36	35	0.99		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5						●				

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URBAN SETTLEMENT: **SHEBIN EL KOM**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Manoufia - Intermediate industries: Fine spinning and weaving - Consumer industries: Food processing and dairy products.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
54.9	66.3	[illegible]	4.0/a	120.3

AREA OF SETTLEMENT [illegible] sq km | GROSS DENSITY 156 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
164.0	82.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.1	20,117	25,898	12,432	14,307

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	63 (a)	31.3 (b)	81.7 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	180.0	118.9	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	175.1 E 75.1	115.7 E 15.7	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	7.32 (1979 L.E)	101.1 (1979 L.E)	N.A. (1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	154	135	11.6	326	0-4720
	Cairo	6,710.8	Cairo	82	71	8.4		
	Gharbia	766.3	Tanta	28	27	7.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	82	71	6.92	219	0-5632
	Alexandria	2,318.7	Alexandria	154	135	2.65		
	Gharbia	766.3	Tanta	28	27	0.99		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL														
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW										
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH															
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2																		
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW															
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5			●														

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GOVERNORATE: ASSUIT

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

ASSIUT Governorate is located in the middle of the Upper Egypt Nile Valley, between Sohag and Minia Governorates. The terrain of the valley slopes from a southern elevation of 55.2 m to a northern elevation of 43 m. The valley is bound from the east and west by desert plateaus which rise to a height of 200-300 m above sea level. The Nile runs in the east of the valley leaving a narrow east bank but with substantial areas of agricultural land around Badari and Abnub. The valley widens at the center of the Governorate allowing for a wide west bank, varying between 3 to 6 km deep. In this section of the Nile there is a river island every 4.7 km. Starting in Assiut the Ibrahimieh Canal runs west of the Nile and parallel to it until it reaches north of Beni Suef.

AREA OF GOVERNORATE 1,530.2 Sq.Km.
AREA OF URBAN LAND 132.5 Sq.Km.
AREA OF AGRICULTURAL LAND:
Cultivated : 125,206 Ha.
Land Region : 3,977 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.9
1978 : 2.9

LOSS OF ARABLE LAND: 9,444 Ha.

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Maize, Cotton, Wheat, Beans, Lentils, Citrus, Water melon, Vinyards, Bananas, Pomegrenates

EXTRACTION:

SERVICES:
Assiut as capital and regional center for related business, trade services and cultural activities

OTHER:
Center for main university and several institutions of higher education - Land reclamation

INDUSTRY:

CAPITAL:

INTERMEDIATE:
Super phosphate

CONSUMER:
Hand woven carpets - Medium spinning

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	289,569	21.8	335,932	23.7	470,032	27.7	2.5	3.4	3.1
RURAL	1,040,019	78.2	1,082,232	76.3	1,225,346	72.3	0.7	1.2	1.0
TOTAL	1,329,588	100	1,418,164	100	1,695,378	100	1.1	1.8	1.5

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	10,334	2,268	2,952	1,900	794	18,248
RURAL	7,207	1,182	1,500	1,323	333	11,545
TOTAL	17,541	3,450	4,452	3,223	1,127	29,793

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000's)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	213,983	174	55			
URBAN LESS THAN 50,000	9	256,049			463.8		
VILLAGES	239	1,225,346	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

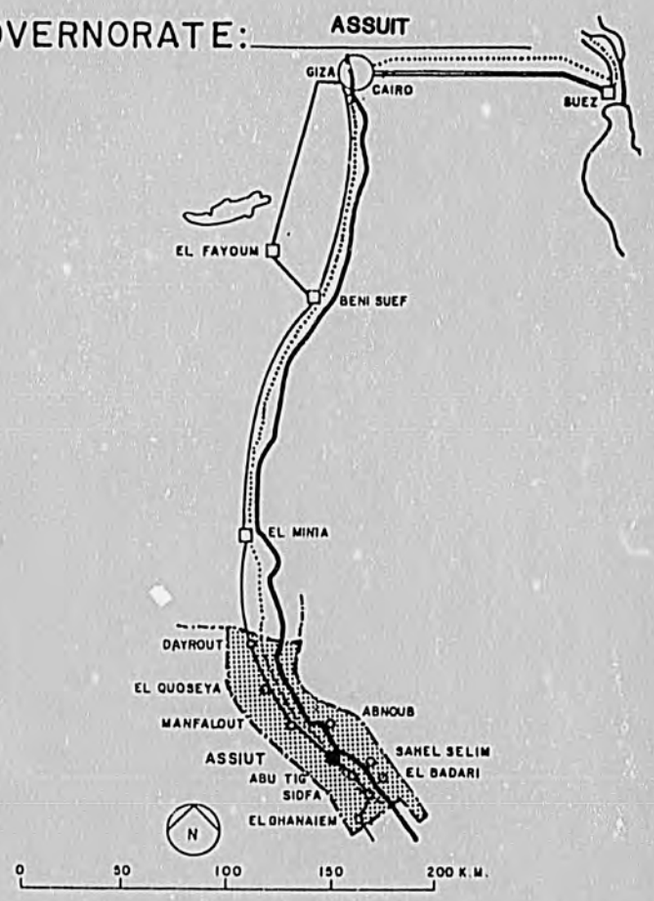
CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	19,388	19,360	24,798	29,793	30,756
NO. OF EMPLOYED	31,566	32,438	41,810	56,563	54,686
% CHANGE IN ESTABLISHMENTS		- 0.14	28.09	20.14	3.23
% CHANGE IN EMPLOYED		2.76	28.89	35.29	-3.32

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO. OF Est.	PUBLIC SECTOR NO. OF Emp.	PRIVATE SECTOR NO. OF Est.	PRIVATE SECTOR NO. OF Emp.	TOTAL NO. OF Est.	TOTAL NO. OF Emp.
URBAN	196	7,026	14,146	22,611	14,342	29,637
RURAL	35	1,857	16,379	23,192	16,414	25,049
TOTAL	231	8,883	30,525	45,803	30,756	54,686

EMPLOYMENT

CATEGORY	YEAR	POPLLATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	11.31	47.98	1622.8	463.4	-	147.1	77.8	1.0	254.7	583.4	94.4	1.0
		RURAL	12.27	52.02	1759.5	1477.4	1.0	21.3	12.2	3.0	75.8	142.[illegible]	21.6	5.1
		TOTAL	23.58	100	3382.3	1940.8	1.0	168.4	90.0	4.1	330.4	725.5	116.0	6.1
	1970	URBAN	5.61	21.75	864.0	247.0	4.0	135.0	22.0	10.0	100.0	270.0	52.0	24.0
		RURAL	19.97	78.25	3109.0	2696.0	-	68.0	15.0	7.0	51.0	217.0	33.0	22.0
		TOTAL	25.58	100	3973.0	2943.0	4.0	203.0	37.0	17.0	151.0	487.0	85.0	46.0
	1975	URBAN	5.29	25.88	958.0	275.0	1.0	115.0	31.0	9.0	149.0	297.0	58.0	23.0
		RURAL	15.15	74.12	2744.0	2256.0	-	57.0	18.0	9.0	148.0	208.0	18.0	30.0
		TOTAL	20.44	100	3702.0	2531.0	1.0	172.0	49.0	18.0	297.0	505.0	76.0	53.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	11.31	47.98		13.7	-	4.35	2.30	0.03	7.53	17.25	2.79	0.03
		RURAL	12.27	52.02		43.68	0.03	0.63	0.36	0.09	2.24	4.20	0.64	0.15
		TOTAL	23.58	100		57.38	0.03	4.98	2.66	0.12	9.77	21.45	3.43	0.18
	1970	URBAN	5.61	21.75		6.22	0.1	3.40	0.55	0.25	2.52	6.80	1.39	0.60
		RURAL	19.97	78.25		67.86	-	1.71	0.38	0.18	1.28	5.46	0.83	0.55
		TOTAL	25.58	100		74.08	0.1	5.11	0.93	0.43	3.80	12.26	2.14	1.15
	1975	URBAN	5.29	25.88		7.43	0.03	3.11	0.83	0.25	4.02	8.02	1.57	0.62
		RURAL	15.15	74.12		60.94	-	1.54	0.49	0.24	3.99	5.62	0.49	0.81
		TOTAL	20.44	100		68.37	0.03	4.65	1.32	0.49	8.01	13.64	2.06	1.43
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			- 10.31	-10.48	-	- 1.43	-21.04	38.05	-15.58	-12.84	-9.93	52.64
		RURAL			9.48	10.02	-	19.34	3.47	13.90	- 6.60	7.06	7.02	24.46
		TOTAL			2.72	6.94	22.77	3.11	-14.81	23.87	-13.05	- 6.64	5.18	33.7
	1964-1975	URBAN			- 4.79	- 4.74	-	- 2.24	- 8.36	19.79	- 4.87	- 6.14	-4.42	28.32
		RURAL			4.04	3.85	-	8.94	3.55	9.87	6.09	3.47	-1.68	16.16
		TOTAL			0.82	2.41	-0.18	0.19	- 5.52	13.54	- 0.97	- 3.25	-3.84	19.67
	1970-1975	URBAN			2.06	2.15	-27.73	- 3.21	6.86	-2.11	7.98	1.91	2.16	-0.85
		RURAL			- 2.50	- 3.56	-	- 3.53	3.65	5.03	21.3	- 0.85	-12.12	6.20
		TOTAL			- 1.41	- 3.02	-27.73	- 3.11	5.62	1.14	13.52	0.73	-2.23	2.83



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URBAN SETTLEMENT: **ASSUIT**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Assiut - Center of agricultural marketing and servicing - Phosphate mining - Intermediate and consumer industries of textile spinning and weaving, and carpet manufacture - Seat of Assiut University - Mainland access to New Valley in Western Desert.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
127.5	154.0	214.0	3.29/a	243.6

AREA OF SETTLEMENT 9.58 sq km | GROSS DENSITY 223.4 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
174.0	55.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In two directions, on the East bank of the Nile and West, beyond agricultural strip, to the foothills of the Western Desert plateau.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	43,234	20,032	21,149	25,099

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	67.9 (a)	20.5 (b)	78.2 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	234.6	46.3	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	109.7 E 9.7	21.6 D (78.4)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	536.4 (1979 L.E)	716.4 (1979 L.E)	(1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	601	607	12.7	2	0-4720
	Port Said	262.6	Port Said	600	607	2.9		
	Minia	146.4	Minia	139	155	1.7		
MAJOR MARKETS	Cairo	6,710.8	Cairo	380	415	4.02	6	0-5632
	Minia	434.8	Minia	139	146	3.27		
	Sohag	405.3	Sohag	115	128	2.61		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED		LOW											
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2		ABSORPTION CAPACITY POTENTIAL	HIGH								
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW					●			
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

GOVERNORATE: NEW VALLEY

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

NEW VALLEY Governorate is located in the western desert of the Nile Valley. The terrain is flat desert plateau with an average elevation of 500 m above sea level and sloping from south west to north east and north. The only significant elevations are granite mountains in the south west known as Oweinate with a peak elevation of 1895 m. In the west, along the Libyan border, are extensive moving sand dunes. Two depressions are formed 200 km west of the Nile. The largest, Kharga Oasis, has an area of 5500 sq km and an elevation of 60-80 m. The second depression, Dakhla Oasis, has an area of 1400 sq km and an elevation of 230 m. A third depression, Farafra Oasis is 300 km west of Assiut, has an area of 10000 sq km and an elevation of 70-90 m above sea level.

AREA OF GOVERNORATE 376,505.0 Sq.Km
AREA OF URBAN LAND : N.A. Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : -- Ha.
Land Region' : -- Ha.
Reclaimed : 12,590 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : N.A.
1978 : N.A.

LOSS OF ARABLE LAND: N.A. Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	23,932	100	20,511	34.5	34,407	40.6	(2.5)	5.3	2.3
RURAL	-	-	38,874	65.5	50,238	59.4	-	2.6	-
TOTAL	23,932	100	59,385	100	84,645	100	16.4	3.6	8.2

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	1,067	70	32	600	32	1,801
RURAL	238	28	10	95	7	378
TOTAL	1,305	98	42	695	39	2,179

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR. DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	-	-	-	-	-	-	-
URBAN LESS THAN 50,000	2	34,407	-	-	-	-	-
VILLAGES	60	50,238	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	377	N.A.	843	978	1,344
NO. OF EMPLOYED	574	N.A.	1,421	1,272	2,224
% CHANGE IN ESTABLISHMENTS		N.A.	N.A.	16.01	37.42
% CHANGE IN EMPLOYED		N.A.	N.A.	-10.49	74.84

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	21	207	892	1,350	913	1,557
RURAL	3	72	428	595	431	667
TOTAL	24	279	1,320	1,945	1,344	2,224

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Experimentation with vegetables & medicinal herbs - Cattle breeding & fodder - Dates - Citrus - Olives - Barley

EXTRACTION:
Phosphate at Abu Tartur

SERVICES :
Kharga as governorate capital, most in Dakhla Oasis and Farafra in Farafra Oasis - Provide related business and trade services, as well as public health, education and social welfare - Agricultural extension services

OTHER :

INDUSTRY :

CAPITAL :

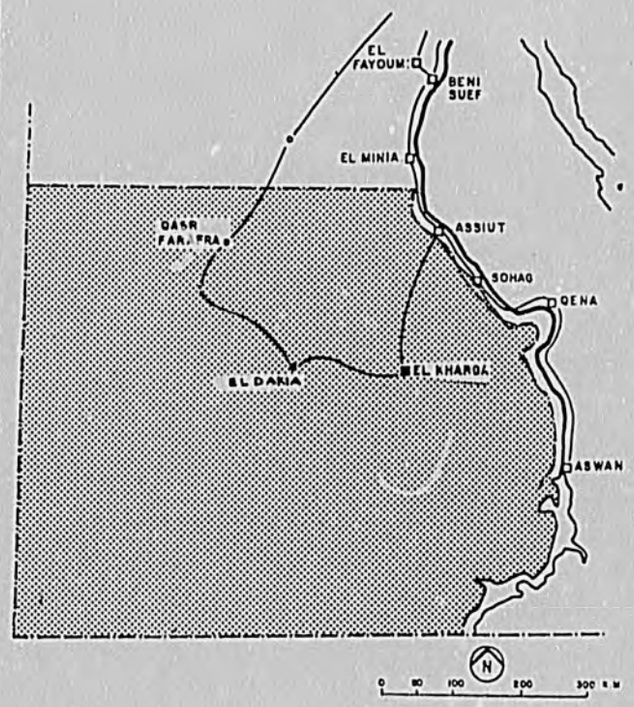
INTERMEDIATE :

CONSUMER :
Limited cottage and craft industries of basket and carpet weaving

EMPLOYMENT

(not available for 1970-1975)

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	20.98	100	83.98	69.65	-	0.67	0.67	-	2.27	10.12		
		RURAL												
		TOTAL	20.98	100	83.98	69.65	-	0.67	0.67	-	2.27	10.12		
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	20.98	100	-	82.94	-	0.80	0.80	-	2.41	12.05	-	-
		RURAL												
		TOTAL	20.98	100	-	82.94	-	0.80	0.80	-	2.41	12.05	-	-
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN												
		RURAL												
		TOTAL												
	1964-1975	URBAN												
		RURAL												
		TOTAL												
	1970-1975	URBAN												
		RURAL												
		TOTAL												



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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

ALEXANDRIA Governorate is located on the Mediterranean west of the Delta and north of Beheira and east of Matruh Governorates. Its natural formations of deep water bays allowed the development of the main port of the country. The Governorate stretches west of Abu Kir Bay between the Mediterranean to the north and Lake Maryout to the south. Other than the built-up land of metropolitan Alexandria, the Governorate is generally flat desert land sloping towards the sea with no prominant topography.

AREA OF GOVERNORATE: 2,679.0 Sq.Km
AREA OF URBAN LAND : 82.7 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 16,025 Ha.
Land Region : 5,165 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECCAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.2
1978 : 1.5

GAIN OF ARABLE LAND: 1,040 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	1,516,234	100	1,801,056	100	2,318,655	100	2.91	2.56	2.69
RURAL	-	-	-	-	-	-	-	-	-
TOTAL	1,516,234	100	1,801,056	100	2,318,655	100	2.91	2.56	2.69

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	6,825	-	6,797	6,268	2,265	22,155
RURAL	-	-	-	-	-	-
TOTAL	6,825	-	6,797	6,268	2,265	22,155

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	2,318,655	5,496	3,086	386	-	-
URBAN LESS THAN 50,000	-	-	-	-	-	-	-
VILLAGES	-		(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	47,415	48,818	55,270	57,334	69,869
NO. OF EMPLOYED	207,861	240,007	277,119	299,460	360,760
% CHANGE IN ESTABLISHMENTS		2.96	13.22	3.73	21.17
% CHANGE IN EMPLOYED		15.47	15.46	8.06	20.47

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	1,868	214,100	68,001	146,660	69,869	360,760
RURAL	-	-	-	-	-	-
TOTAL	1,868	214,100	68,001	146,660	69,869	360,760

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

EXTRACTION:
Black sand - Salt production & packing

SERVICES:
Port related facilities & services - Wholesale & storage

OTHER:
Seasonal vacation - Naval base - University - Fishing port

INDUSTRY:

CAPITAL:
Hoisting machinery - Electric and electronic equipment

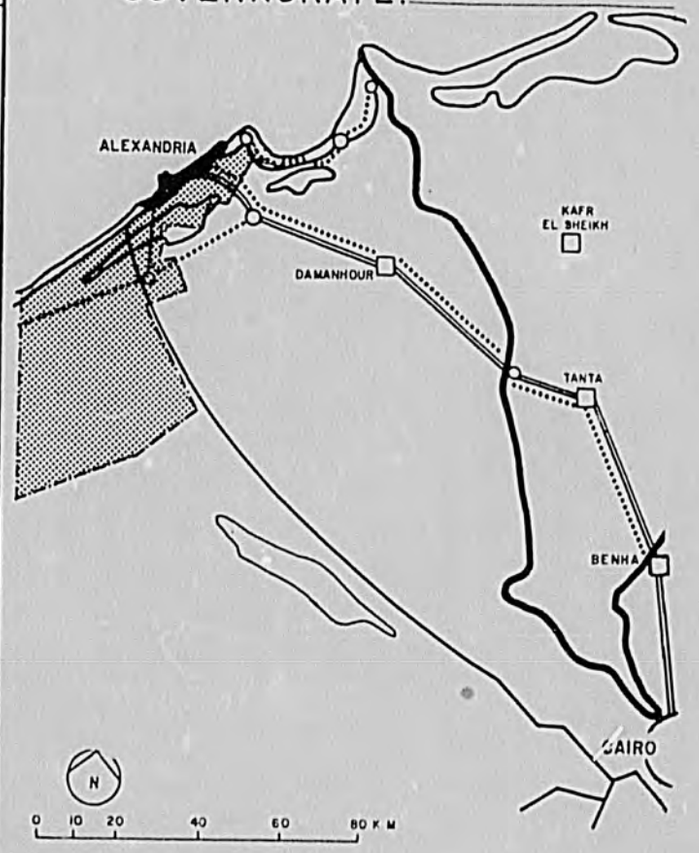
INTERMEDIATE:
Steel trusses & bridges - Metal forming - Refining & petrochemicals - Rubber - Paper - Leather processing & production - Shipbuilding & maintainence

CONSUMER:
Food products
Oil extraction
Ceramics
Printing
Cotton & wool spinning and weaving

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	23.08	100	3860	164.4	14.7	1273.4	120.8	45.5	676.7	1183.1	361.3	20.1
		RURAL												
		TOTAL	23.08	100	3860	164.4	14.7	1273.4	120.8	45.5	676.7	1183.1	361.3	20.1
	1970	URBAN	25.70	100	5108	240	13.0	1801.0	187.0	59.0	761.0	1210.0	516.0	321.0
		RURAL												
		TOTAL	25.70	100	5108	240	13.0	1801.0	187.0	59.0	761.0	1210.0	516.0	321.0
	1975	URBAN	25.95	100	5694	141	24.0	2080.0	219.0	69.0	983.0	1368.0	612.0	198.0
		RURAL												
		TOTAL	25.95	100	5694	141	24.0	2080.0	219.0	69.0	983.0	1368.0	612.0	198.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	23.08	100		4.26	0.38	32.9	3.13	1.18	17.53	30.65	9.36	0.52
		RURAL												
		TOTAL	23.08	100		4.26	0.38	32.9	3.13	1.18	17.53	30.65	9.36	0.52
	1970	URBAN	25.70	100		4.70	0.25	35.26	3.66	1.16	14.90	23.69	10.10	6.28
		RURAL												
		TOTAL	25.70	100		4.70	0.25	35.26	3.66	1.16	14.90	23.69	10.10	6.28
	1975	URBAN	25.95	100		2.48	0.42	36.53	3.85	1.21	17.26	24.02	10.75	3.48
		RURAL												
		TOTAL	25.95	100		2.48	0.42	36.53	3.85	1.21	17.26	24.02	10.75	3.48
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			4.67	6.30	-2.01	5.78	7.28	4.31	1.95	0.37	5.94	46.2
		RURAL												
		TOTAL			4.67	6.30	-2.01	5.78	7.28	4.31	1.95	0.37	5.94	46.2
	1964-1975	URBAN			3.53	-1.40	4.47	4.46	5.41	3.77	3.39	1.32	4.79	20.81
		RURAL												
		TOTAL			3.53	-1.40	4.47	4.46	5.41	3.77	3.39	1.32	4.79	20.81
	1970-1975	URBAN			2.17	-10.63	12.26	2.88	3.16	3.13	5.12	2.45	3.41	-9.66
		RURAL												
		TOTAL			2.17	-10.63	12.26	2.88	3.16	3.13	5.12	2.45	3.41	-9.66

GOVERNORATE: ALEXANDRIA



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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Alexandria - Main Port of Egypt on the Mediterranean Sea; handles over 62.7% of all exports and imports - Main center for capital, intermediate and consumer industries - Specializes in shipbuilding and maintenance, leather tanning and leather goods - Center for extensive salt extraction and petroleum refining. Has second largest university in the country - Main center for tourism, seasonal vacation and archaeology - Main base for Egyptian Navy and SeaT of Naval Academy.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
1,516.2	1,801.1	2,318.7	2.69/a	2,578.5

AREA OF SETTLEMENT 192.85 sq km | GROSS DENSITY 120.23 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
5,496.0	3,086.0	386.0	-	-

EASE OF HORIZONTAL-EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In East-West directions along the Mediterranean
New community West of Alexandria: New Ameriya

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO. OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO. OF ALL BUILDINGS
4.9	466,043	447,238	128,826	148,630

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	89.6 (a)	58.3 (b)	89.6 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	1,539.4	1,634.0	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	66.4 D (33.6)	70.5 D (29.5)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	187.8 (1978 L.E)	376.6 (1978 L.E)	N.A. (1978 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Beheira	653.5	Damanhour	65	56	30.8	1828	0-4720
	Kafr El Sheikh	291.9	Kafr El Sheikh	130	106	10.1		
	Cairo	6,710.8	Cairo	221	192	6.6		
MAJOR MARKETS	Cairo	6,710.8	Cairo	221	192	76.93	5632	0-5632
	Beheira	653.5	Damanhour	65	56	41.99		
	Gharbia	766.3	Tanta	128	110	24.25		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

								OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH	ECONOMIC GROWTH POTENTIAL LOW
ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	ABSORPTION CAPACITY POTENTIAL	HIGH	●	
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5				
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW			LOW		
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2					
	RATE OF POPULATION GROWTH	0	1	2	3	4					
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5				

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

BEHEIRA Governorate is located west of the Nile Delta. North west and west Beheira is bound by Alexandria and Matruh Governorates. The land is generally flat with a slope of 1:9000 to 1:11000 from south to north and from east to west. In the center of the southern part, there are two parallel depressions separated by a small ridge. The deepest of the two, Wadi El Natroun, is 24 m below sea level. In the north, close to Abu Kir Bay, two lakes are formed, Lake Idku 133.3 sq km and Lake Maryout 55.4 sq km. South of the lakes there are sand dunes reaching a height of 15 m.

AREA OF GOVERNORATE 10,129.5 Sq.Km
AREA OF URBAN LAND : 188.0 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 315,420 Ha.
Land Region : 41,749 Ha.
Reclaimed : 9,474 Ha.
ASSESSED % OF RECLAIMABLE LAND : N.A.
ASSESSED % OF BUILT-UP LAND
1972 : 3.5
1978 : 3.5
GAIN OF ARABLE LAND : 18,543 Ha.

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	307,516	18.25	353,393	17.86	653,458	26.0	2.3	6.3	4.8
RURAL	1,378,163	81.75	1,625,496	82.14	1,863,834	74.0	2.79	1.4	1.9
TOTAL	1,685,679	100	1,978,889	100	2,517,292	100	2.71	2.54	2.44

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	3,356	11,511	627	1,037	1,147	17,678
RURAL	1,835	6,377	210	344	1,113	9,879
TOTAL	5,191	17,888	837	1,381	2,260	27,557

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	3	411,711	65*	- *			
URBAN LESS THAN 50,000	11	241,747			476.6		
VILLAGES	379	1,863,834	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr. * IDKU, not computed				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	19,575	22,202	28,115	30,838	36,617
NO. OF EMPLOYED	56,895	72,448	81,226	90,937	112,549
% CHANGE IN ESTABLISHMENTS		13.42	26.33	9.69	18.74
% CHANGE IN EMPLOYED		27.34	12.12	11.96	23.77

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO. OF Est.	PUBLIC SECTOR NO. OF Emp.	PRIVATE SECTOR NO. OF Est.	PRIVATE SECTOR NO. OF Emp.	TOTAL NO. OF Est.	TOTAL NO. OF Emp.
URBAN	273	28,344	18,990	32,674	19,263	61,018
RURAL	137	24,235	17,217	27,296	17,354	51,531
TOTAL	410	52,579	36,207	59,970	36,617	112,549

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE: Cotton, Maize, Wheat, Rice, Barley, Beans, Vineyards, Fruits, Sugar cane, Linen, various vegetables

EXTRACTION:

SERVICES :
Damanhour as capital in related business and trade services to the region

OTHER :
Land reclamation

INDUSTRY

CAPITAL

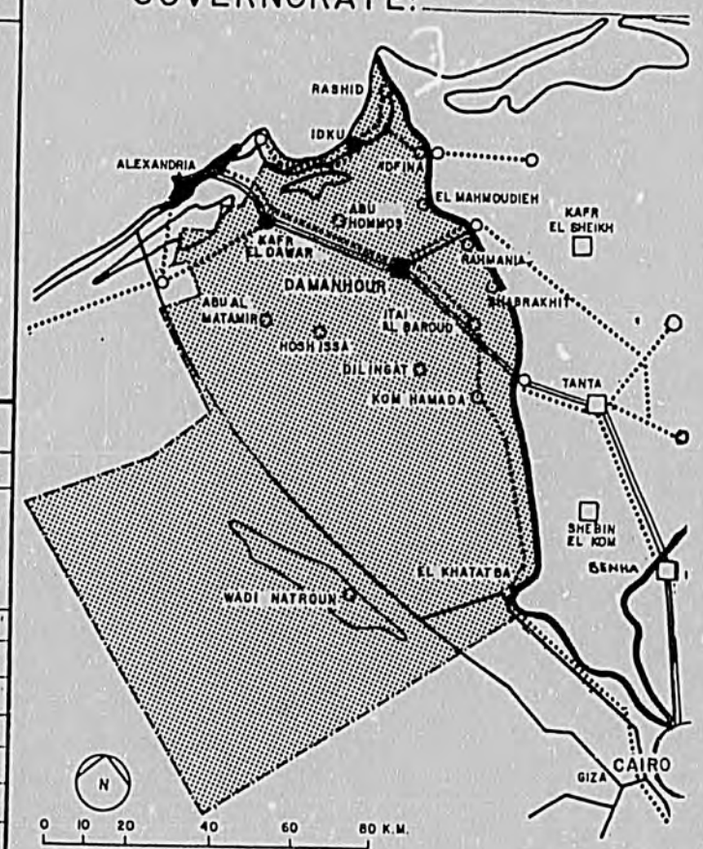
INTERMEDIATE
Synthetic silk - Chemicals - Textile dyes

CONSUMER
Spinning and weaving - Machine made carpets - Cotton ginning - Fine spinning and weaving.

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	12.28	45.40	2310.8	482.0	-	523.2	53.4	3.6	427.0	677.5	127.8	16.3
		RURAL	14.77	54.6	2779.1	2538.9	-	10.2	1.0	-	18.8	187.8	13.7	8.6
		TOTAL	27.05	100	5090.0	3020.9	-	533.4	54.5	3.6	445.9	865.3	141.5	24.9
	1970	URBAN	4.23	15.85	938.0	248.0	-	189.0	28.0	5.0	160.0	210.0	56.0	42.0
		RURAL	22.50	84.15	4980.0	4243.0	-	177.0	20.0	4.0	161.0	270.0	69.0	32.0
		TOTAL	26.73	100	5918.0	4491.0	-	366.0	48.0	9.0	321.0	480.0	125.0	74.0
	1975	URBAN	4.00	14.5	1003.0	197.0	-	180.0	33.0	2.0	238.0	261.0	58.0	34.0
		RURAL	23.58	85.5	5913.0	5123.0	-	83.0	-	-	122.0	310.0	-	275.0
		TOTAL	27.58	100	6916.0	5320.0	-	263.0	33.0	2.0	360.0	571.0	58.0	309.0
%s OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.28	45.40		9.47	-	10.28	1.05	0.07	8.39	13.31	2.51	0.32
		RURAL	14.77	54.60		49.88	-	0.20	0.02	-	0.37	3.69	0.27	0.17
		TOTAL	27.05	100		59.35	-	10.48	1.07	0.07	8.76	17.0	2.78	0.49
	1970	URBAN	4.23	15.85		4.19	-	3.20	0.47	0.08	2.70	3.55	0.95	0.71
		RURAL	22.50	84.15		71.69	.07	3.00	0.34	0.07	2.72	4.56	1.16	0.54
		TOTAL	26.73	100		75.88	.07	6.20	0.81	0.15	5.42	8.11	2.11	1.25
	1975	URBAN	4.0	14.5		2.85	-	2.60	0.47	0.03	3.44	3.77	0.84	0.50
		RURAL	23.58	85.5		74.07	-	1.20	-	-	1.76	4.48	-	3.98
		TOTAL	27.58	100		76.92	-	3.80	0.47	0.03	5.20	8.26	0.84	4.48
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			-15.03	-11.07	-	-16.97	-10.77	5.66	-16.36	-19.52	-13.75	15.78
		RURAL			9.72	8.56	-	47.59	49.60	-	35.76	6.05	26.90	21.80
		TOTAL			2.51	6.61	-	- 6.28	- 2.10	15.46	- 5.48	- 9.82	- 2.00	18.13
	1964-1975	URBAN			- 7.59	- 8.13	-	- 9.70	- 4.38	- 5.24	- 5.31	- 8.67	- 7.18	6.69
		RURAL			6.86	6.38	-	19.08	-	-	16.98	4.55	-	31.45
		TOTAL			2.79	5.14	-	- 6.43	- 4.55	-5.24	- 1.94	- 3.78	-8.11	22.88
	1970-1975	URBAN			1.34	- 4.60	-	- 0.98	3.29	-18.33	7.94	4.35	0.70	-4.23
		RURAL			3.43	3.77	-	-15.15	-	-	- 5.55	2.70	-	43.02
		TOTAL			3.12	3.39	-	- 6.61	- 7.49	-30.00	2.29	3.47	-15.30	28.58

GOVERNORATE: BEHEIRA



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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Beheira - Center for agricultural marketing and servicing - Intermediate industries of cotton spinning and synthetic silk, chemicals and textile dyes - Consumer industries of carpet weaving.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
104.8	146.0	188.9	3.75/a	218.9

AREA OF SETTLEMENT 4.67 sq km

GROSS DENSITY 404.6 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
-	-	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.1	37,384	36,035	14,161	16,347

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	78.5 (a)	54.5 (b)	91.4 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	135.0	134.5	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	71 D (29)	71.2 D (28.8)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	NOT * CALCULATED (1979 L.E)	NOT * CALCULATED (1979 L.E)	(1979 L.E)

* No excess absorption capacity at Medium High Density

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	65	56	50.0	815	0-4720
	Gharbia	766.3	Tanta	63	61	14.4		
	Cairo	6,710.8	Cairo	156	134	8.6		
MAJOR MARKETS	Alexandria	2,318.7	Alexandria	65	56	30.76	500	0-5632
	Cairo	6,710.8	Cairo	156	134	9.87		
	Qalyubia	290.9	Benha	107	92	1.41		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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URBAN SETTLEMENT: **EDKU**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Fishing.
Petroleum refining.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
30.0	42.2	62.2	4.66%	74.6

AREA OF SETTLEMENT [illegible] sq km | GROSS DENSITY [illegible] p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
9,576.8	6,601.8	[illegible]	2,127.4	869.8

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

Easily in three directions: East and West along Mediterranean and South along North shore of Lake Idku.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
7.0	8,883	8,166	7,143	7,943

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	66.6 (a)	0 (b)	61.7 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	- 0 -	No SYSTEM	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	- 0 - *	- 0 - D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	478.25 ** (1976 L.E.)	568.93 ** (1976 L.E.)	(1976 L.E.)

* Part of a regional water supply network servicing Behera & Kafr El Sheikh
** Cost of new system for settlement

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	56	61	50.0	203	0-4720
	Gharbia	766.3	Tanta	187	204	14.4		
	Cairo	6,710.3	Cairo	267	220	8.7		
MAJOR MARKETS	Alexandria	2,318.7	Alexandria	56	61	30.76	128	0-5632
	Cairo	6,710.8	Cairo	267	220	9.87		
	Qalyubia	290.9	Benha	190	154	1.41		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5	
	COMB DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2		
	RATE OF POPULATION GROWTH	0	1	2	3	4		
	COMB ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5	

OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH		ECONOMIC GROWTH POTENTIAL LOW	
ABSORPTION CAPACITY POTENTIAL	HIGH		●		
	LOW				

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Main center of textile industry. Fine spinning and weaving.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
43.2	41.6	160.6	8.55/a	223.0

AREA OF SETTLEMENT 5.57 sq km | GROSS DENSITY 282.9 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
65.0	-	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.9	27,136	29,736	15,209	16,058

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	39.5 (a)	29.2 (b)	60.3 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	104.2	N.A. *	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	64.9 D (35.1)	N.A. *	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	NOT CALCULATED (1978 L E)	N.A. * (1978 L E)	(1978 L E)

* Municipal system under construction, capacities not available

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	23	20	50.0	4720	0-4720
	Gharbia	766.3	Tanta	105	90	14.4		
	Cairo	6,710.8	Cairo	143	141	8.6		
MAJOR MARKETS	Alexandria	2,318.7	Alexandria	23	20	30.76	2732	0-5632
	Cairo	6,710.8	Cairo	185	159	9.87		
	Qalyubia	290.9	Banha	108	93	1.41		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL					
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH		LOW			
	COMB. DIFFICULTY & COST / CAPITA /OR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH						
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2									
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW						
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5								

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GOVERNORATE: ISMAILIA

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

ISMAILIA Governorate is located east of the Nile Delta. The Governorate is a flat desert terrain with a swampy marshland to the north, next to Lake Manzala. It has two salt water lakes on the Suez Canal, Lake Temsah and the Bitter Lakes. Most of the cultivated land in this Governorate is irrigated by the Ismailia Canal which runs east from the Nile to end in Lake Temsah. South of this Canal is a desert plain reaching to the foothills of the eastern desert plateau. Sand dunes reach heights from 20-50 m.

AREA OF GOVERNORATE 1,441.6 Sq.Km
AREA OF URBAN LAND 47.3 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 296 Ha.
Land Region : N.A. Ha.
Reclaimed : N.A. Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.2
1978 : 1.9

GAIN OF ARABLE LAND: 1,955 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN			182,419	52.19	174,186	49.5		- 0.46	
RURAL			162,370	47.1	177,705	50.5		0.91	
TOTAL	264,115	100	344,789	100	351,891	100	1.28	0.20	1.05

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	2,031	353	347	220	-	2,951
RURAL	240	66	42	147	-	495
TOTAL	2,271	419	389	367	-	3,856

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000's)				
SETTLEMENT CATEGORY	NO	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	145,978	446	262	66	-	-
URBAN LESS THAN 50,000	3	28,206	-	-		-	-
VILLAGES	20	177,705	(a) 405 p/hctr - (b) 280 p/hctr - (c) 140 p/hctr. (d) 92 p/hctr - (e) 40 p/hctr				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	4,772	5,294	5,815	N.A.	7,809
NO. OF EMPLOYED	12,187	9,300	13,600	N.A.	21,795
% CHANGE IN ESTABLISHMENTS		10.94	9.84	N.A.	N.A.
% CHANGE IN EMPLOYED		-23.69	46.3	N.A.	N.A.

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO OF Est.	NO. OF Emp.	NO OF Est.	NO. OF Emp	NO OF Est	NO OF Emp.
URBAN	131	6,719	5,317	7,909	5,448	14,628
RURAL	29	3,304	2,332	3,863	2,361	7,167
TOTAL	160	10,023	7,649	11,772	7,809	21,795

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Substantial west of city along Ismailia Canal - Fruits, Vegetables and various nuts

EXTRACTION
Gypsum

SERVICES:
Regional center of related services

OTHER:
Canal University Headquarters - Tourism - Vacation spot.

INDUSTRY:

CAPITAL:
Electric equipment

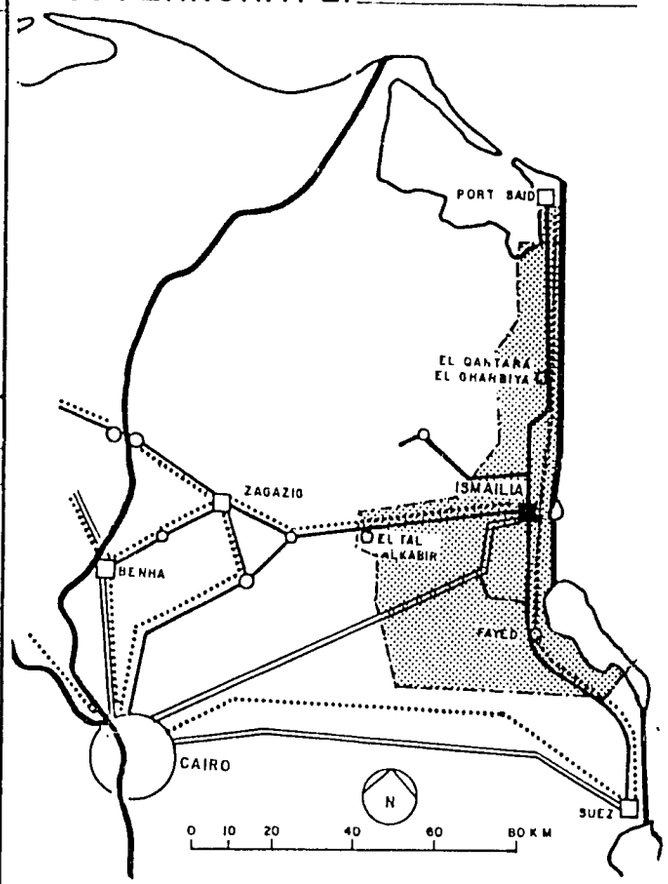
INTERMEDIATE:
Chemical product and ship building

CONSUMER:
Food processing and canning - Gypsum - product - Asphalt tiles

EMPLOYMENT

(not available for 1970 & 1975)

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL COVERAGE POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTURING INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000S)	1964	URBAN	21.65	100	691.2	76.17	19.10	68.85	50.39	0.48	30.22	155.44	88.54	2.0
		RURAL												
		TOTAL	21.65	100	691.2	76.17	19.10	68.85	50.39	0.48	30.22	155.44	88.54	2.0
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	21.65	100	-	11.02	2.76	24.43	7.29	0.07	18.84	22.49	12.81	0.29
		RURAL												
		TOTAL	21.65	100	-	11.02	2.76	24.43	7.29	0.07	18.84	22.49	12.81	0.29
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN												
		RURAL												
		TOTAL												
	1964-1975	URBAN												
		RURAL												
		TOTAL												
	1970-1975	URBAN												
		RURAL												
		TOTAL												



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GOVERNORATE: SUEZ

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

SUEZ Governorate is located at the southern end of the Suez Canal and is the Red Sea access to the Canal. It is a part of Egypt's eastern desert with an extension of the Red Sea mountain range in the south creating a desert highland with a peak elevation of 1000 m at Mount Ataka and a north/south chain of peaks averaging 500 m. This chain drops steeply to the Red Sea leaving a very narrow coastal plain varying between 10 and 500 m. The northern part is a flat desert terrain with an average elevation of 200 m and slopes gently north toward the desert plain of Ismailia Governorate.

AREA OF GOVERNORATE 17,840.4 Sq.Km
AREA OF URBAN LAND : 19.8 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 8,095 Ha.
Land Region : -- Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.8
1978 : 2.8

GAIN OF ARABLE LAND: 236 Ha.

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	204,610	100	264,096	100	194,000	100	4.44	[illegible]	[illegible]
RURAL									
TOTAL	204,610	100	264,096	100	194,000	100	4.44	[illegible]	[illegible]

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	2,693	1,072	73	-	704	4,542
RURAL	-	-	-			-
TOTAL	2,693	1,072	73		704	4,542

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000's)				
SETTLEMENT CATEGORY	NO	1976 POPULATION	(a) HIGH DENSITY	(b) MEDIUM-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	194,000	2,647	1,904	859	500	112
URBAN LESS THAN 50,000	-	-	-	-	-	-	-
VILLAGES			(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO OF ESTABLISHMENTS	5,453	5,728	6,716	N.A.	6,788
NO OF EMPLOYED	17,088	25,282	44,050	N.A.	20,902
% CHANGE IN ESTABLISHMENTS		5.0	17.29	N.A.	N.A.
% CHANGE IN EMPLOYED		47.95	34.68	N.A.	N.A.

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO OF Est.	PRIVATE SECTOR NO OF Emp	TOTAL NO OF Est.	TOTAL NO OF Emp.
URBAN	174	9,790	6,614	111,12	6,788	20,902
RURAL	-	-	-	-	-	-
TOTAL	174	9,790	6,614	111,12	6,788	20,902

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

EXTRACTION:
Marble - decorative stone - salt

SERVICES:
Port related services & facilities - petroleum trans-shipping

OTHER:
Canal University - Main access to Sinai & Red Sea regions - Fishing - Tourism

INDUSTRY:

CAPITAL:

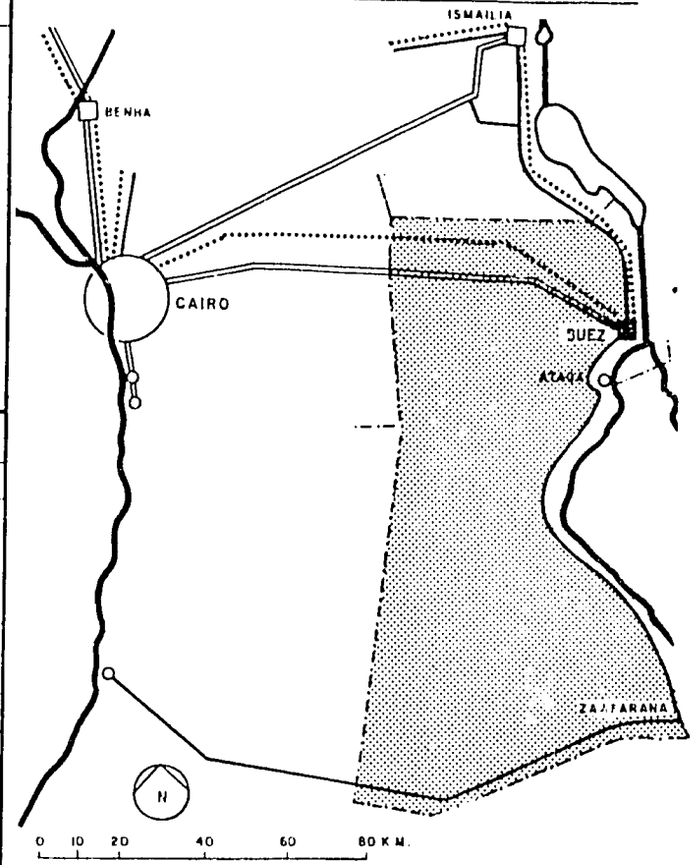
INTERMEDIATE:
Chemical - Solar & Diesel refining - Lubrication products - Petroleum fractioning - Detergent - Fertilizers - Perfumes

CONSUMER:
Salt purification & packing - processing & packing

EMPLOYMENT

(Not available for 1970 & 1975)

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVERNORATE POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTURING INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO OF EMPLOYED POPULATION BY YEAR & SECTOR (000's)	1964	URBAN	20.68	100	485.5	200.8	2.18	23.01	18.88	-	48.21	120.49	49.81	3.84
		RURAL												
		TOTAL	20.68	100	485.5	200.8	2.18	23.01	18.88	-	48.21	120.49	49.81	3.84
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	20.68	100		45.12	0.45	4.74	3.89	-	9.93	24.82	10.26	0.79
		RURAL												
		TOTAL	20.68	100		45.12	0.45	4.74	3.89	-	9.93	24.82	10.26	0.79
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN												
		RURAL												
		TOTAL												
	1964-1975	URBAN												
		RURAL												
		TOTAL												
	1970-1975	URBAN												
		RURAL												
		TOTAL												



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URBAN SETTLEMENT: **SUEZ**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Suez - Third main port of Egypt on the Red Sea; handles over 8.5% of total imports and exports. Southern access to Suez Canal and main access to Sinai - Extractive industry of marble and decorative stones - Intermediate industry of petroleum refining and petro chemicals and fertilizers - Main fishing port - Salt and food processing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
203.6	264.1	194.0	- 0.30	247.0 (MASTER PLAN)

AREA OF SETTLEMENT 87.92 sq km | GROSS DENSITY 22.1 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
3,366.5	2,267.5	1,036.5	614.6	157.3

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

With ease in three directions: North along the Suez Canal, West along the desert road to Cairo, and South along the shore of the Red Sea.

With difficulty on the East shore of the Suez Canal.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.8	40.113	47.532	18.468	23,306

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	64.9 (a)	46.5 (b)	78.6 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	350.7	219.0	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	114.6 E 14.6	115.1 E 15.1	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	408.0 (1970 L.E.)	159.7 (1970 L.E.)	N.A. (1970 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Port Said	262.6	Port Said	173	150	4.6	28	0-4720
	Sharkia	580.4	Zagazig	173	150	1.0		
	Ismailia	145.9	Ismailia	88	77	1.7		
MAJOR MARKETS	Cairo	6,710.8	Cairo	134	177	9.37	92.6	0-5632
	Sharkia	580.4	Zagazig	173	150	5.31		
	Gharbia	766	Tanta	224	227	3.56		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH	●							
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Ismailia - Extractive industries of gypsum mining - Capital industries of electric equipment - Intermediate industries of gypsum products and chemicals - Consumer industries of food processing - Seat of the Suez Canal Authority.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
166.0	144.0	146.0	- 0.80	196.0 (MASTER PLAN)

AREA OF SETTLEMENT 14.32 sq km | GROSS DENSITY 101.9 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
446.0	262.0	56.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

With ease in two directions: North along the Suez Canal and South along Lake Temsah. With difficulty on the East shore of the Suez Canal and West, South of the agricultural strip between the roads to Bilbeis and to Cairo.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	29,986	37,797	14,816	17,817

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	58.7 (a)	41.7 (b)	75.2 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	202.2	167.9	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	84.2 D (15.8)	88.2 D (11.8)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	488.2 (1976 L.E.)	263.4 (1976 L.E.)	N.A. (1976 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Port Said	262.6	Port Said	80	70	0.078	10.5	0-4720
	Gharbia	766.3	Tanta	140	136	0.019		
	Suez	194.0	Suez	88	77	0.008		
MAJOR MARKETS	Gharbia	766.3	Tanta	140	136	3.03	6.67	0-5632
	Port Said	262.6	Port Said	80	70	2.57		
	Sharkia	530.4	Zagazig	79	69	1.74		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5	
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2		
	RATE OF POPULATION GROWTH	0	1	2	3	4		
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5	

OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH		ECONOMIC GROWTH POTENTIAL LOW	
ABSORPTION CAPACITY POTENTIAL	HIGH		●		
	LOW				

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GOVERNORATE: RED SEA

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

RED SEA Governorate is located east of the Nile Valley and west of the Red Sea. The terrain is a desert highland with a chain of mountains extending on a nouth/south axis parallel to the coastline. The Governorate is bisected by a number of deep valleys sloping towards the coast of the Nile Valley, best known i. the Qena valley. In the south east the highest elevation reaches to about 2000 m above sea level. The average elevation is 100-1500 m, with the lowest elevation not less than 500 m. Although the terrain slopes steeply towards the Red Sea, it cascades gradually towards the west reaching 200 m above sea level at the Nile Valley.

AREA OF GOVERNORATE 203,685.0 Sq.Km
AREA OF URBAN LAND : N.A. Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : -- Ha.
Land Region : -- Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : N.A.
1978 : N.A.

LOSS OF ARABLE LAND: N.A. Ha.

CURRENT ECONOMIC ACTIVITIES

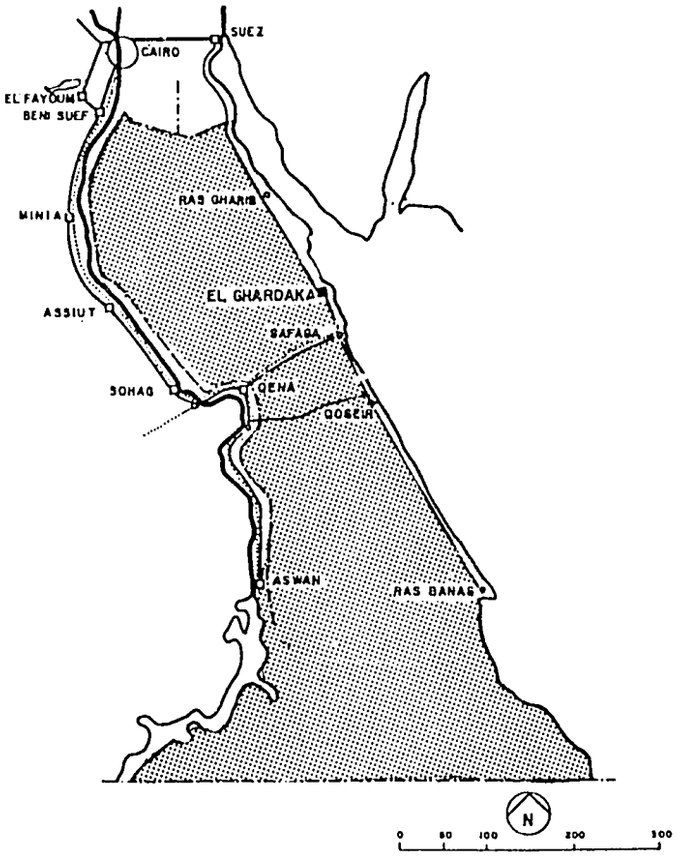
AGRICULTURE:
N.A.

EXTRACTION: Petroleum - Phosphates extensive mining of metal and metal ore

SERVICES :
Ghardaka as governorate capital provides related business and trade services, as well as public health, education and social welfare

OTHER :
Fishing - Extensive tourism - Naval base at Berenice

INDUSTRY
CAPITAL
INTERMEDIATE
CONSUMER



POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN					47,948	84.9			
RURAL					8,469	15.1			
TOTAL	25,017	100	35,976	100	56,417	100	6.24	4.60	5.21

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	453	110	63	693	77	1,396
RURAL	57	20	7	26	78	188
TOTAL	510	130	70	719	155	1,584

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	-						
URBAN LESS THAN 50,000	4	47,948					
VILLAGES		8,469 (BUILDINGS)	(a) 405 p/hctr - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. Of ESTABLISHMENTS			551	430	1,294
NO. OF EMPLOYED			6,355	5,725	14,508
% CHANGE IN ESTABLISHMENTS				-21.96	200.93
% CHANGE IN EMPLOYED				- 9.9	153.42

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO. OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO OF Est.	PRIVATE SECTOR NO. OF Emp.	TOTAL NO OF Est	TOTAL NO.OF Emp.
URBAN	41	3,449	1,013	5,447	1,054	8,896
RURAL	42	5,139	198	473	240	5,612
TOTAL	83	8,588	1,211	5,920	1,294	14,508

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 00'S)	1964	URBAN	19.39	100	49.72	1.9	27.7	1.14	2.45	-	1.90	9.51	1.63	3.49
		RURAL												
		TOTAL	19.39	100	49.72	1.9	27.7	1.14	2.45	-	1.90	9.51	1.63	3.49
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	19.39	100	-	3.82	55.74	2.29	4.92	-	3.83	19.12	3.28	7.0
		RURAL												
		TOTAL	19.39	100	-	3.82	55.74	2.29	4.92	-	3.83	19.12	3.28	7.0
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN												
		RURAL												
		TOTAL												
	1964-1975	URBAN												
		RURAL												
		TOTAL												
	1970-1975	URBAN												
		RURAL												
		TOTAL												

GOVERNORATE: PORT SAID

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

PORT SAID Governorate is located at the northern end of the Suez Canal and is considered the Mediterranean access to the Canal. It is a narrow strip of flat plain bound to the north by the Mediterranean; to the east by the Suez Canal and to the west by Lake Manzala.

AREA OF GOVERNORATE: 72.1 Sq.Km
AREA OF URBAN LAND : 20.6 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 148 Ha.
Land Region : -- Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 14.4
1978 : 14.9

GAIN OF ARABLE LAND: 20 Ha.

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE :

EXTRACTION :
Salt

SERVICES :
Port related facilities & services - Free trade zone - Trans-shipment

OTHER :
Canal university - Seasonal vacation - Fishing - Access to Suez Canal - Tourism

INDUSTRY
CAPITAL :

INTERMEDIATE :

CONSUMER :
Onion dying - Fish & shrimp processing - Fishing related products - Wool spinning & knitting - Salt purification & packing - Metal products & equipments.

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	245,318	100	262,977	100	262,620	100	2.41	- 0.74	0.41
RURAL	-	-	-	-	-	-	-	-	-
TOTAL	245,318	100	262,977	100	262,620	100	2.41	- 0.74	0.41

MIGRATION (Less Than Five Years of Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	1,968	799	-	192	432	3,391
RURAL	-	-	-	-	-	-
TOTAL	1,968	799	-	192	432	3,391

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	262.6	2,659	1,759	749	403	29
URBAN LESS THAN 50,000	-	-	-	-	-	-	-
VILLAGES	-	-	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	7,016	7,290	7,845	N.A.	8,695
NO. OF EMPLOYED	24,969	11,183	12,466	N.A.	28,892
% CHANGE IN ESTABLISHMENTS		3.9	7.6	N.A.	N.A.
% CHANGE IN EMPLOYED		24.89	4.1	N.A.	N.A.

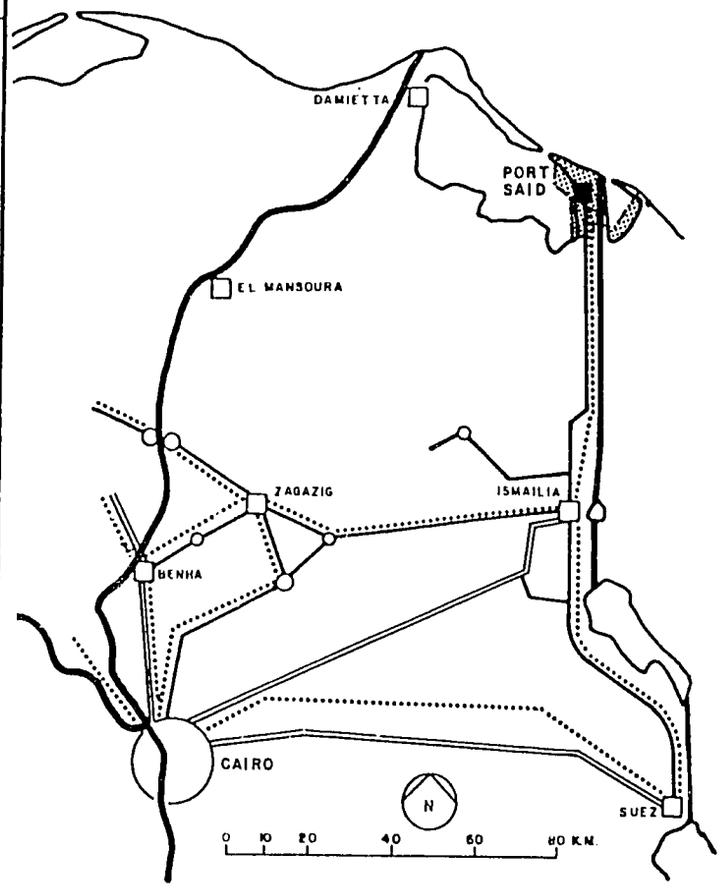
DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO. OF Est.	PRIVATE SECTOR NO. OF Emp	TOTAL NO OF Est.	TOTAL NO OF Emp.
URBAN	189	14,246	8,506	14,646	8,695	28,892
RURAL	-	-	-	-	-	-
TOTAL	189	14,246	8,506	14,646	8,695	28,892

EMPLOYMENT

(Not available for 1970 & 1975)

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO OF EMPLOYED IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTUR INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000S)	1964	URBAN	20.52	100	551.9	14.00	2.59	51.36	21.51	-	115.8	185.70	115.65	0.33
		RURAL												
		TOTAL	20.52	100	551.9	14.00	2.59	51.36	21.51	-	115.8	185.70	115.65	0.33
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	20.52	100	-	0.32	0.47	9.67	4.26	-	20.99	33.65	24.58	0.06
		RURAL												
		TOTAL	20.52	100	-	0.32	0.47	9.67	4.26	-	20.99	33.65	24.58	0.06
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN												
		RURAL												
		TOTAL												
	1964-1975	URBAN												
		RURAL												
		TOTAL												
	1970-1975	URBAN												
		RURAL												
		TOTAL												



PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Port Said - Second main port of Egypt on the Mediterranean; handles 28.8% of total exports and imports - Northern access to the Suez Canal - Center for intermediate industries of chemicals and construction materials; and for consumer industries of food and fish processing, salt refining and packing - Main commerical and industrial free zone in the country - Center of seasonal vacation and tourism.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
245.3	283.0	262.6	0.43	267.1 (MASTER PLAN)

AREA OF SETTLEMENT 22.07 sq km | GROSS DENSITY 16.5 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
2,659.0	1,759.0	749.0	403.0	29.0

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

Expansion with difficulty: on the East shore of the Suez Canal, and in the West on landfill in Lake Manzala

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	52,156	49,977	14,782	18,230

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	87.0 (a)	74.5 (b)	89.3 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	214.8	203.6	N.A.
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	84.2 D (15.8)	77.5 D (22.5)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	394.8 (1970 L E)	238.2 (1970 L E)	N.A. (1970 L E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Damietta	142.8	Damietta	769	246	4.5	4.5	0-4720
	Gharbia	766.3	Tanta	215	206	3.8		
	Ismailia	174.2	Ismailia	80	70	2.6		
MAJOR MARKETS	Dakahlia	655.3	Mansoura	216	210	13.43	79.65	0-5632
	Ismailia	174.2	Ismailia	80	70	9.95		
	Cairo	5,710.8	Cairo	220	192	12.31		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2							●				
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

SHARKIA Governorate is located east of the Nile Delta. To the north east the Governorate includes about 30% of Lake Manzala, the largest lake in Egypt. 65.7% of the land is cultivated using a network of irrigation canals. The eastern part is under extensive reclamation. The land slopes from the south west to the north east, from 50 m to 1 m above sea level. There is a sudden drop in the land south of Faqous creating a swampy area; south of it there are moving sand dunes reaching a height of 30 m.

AREA OF GOVERNORATE 4,179.6 Sq.Km
AREA OF URBAN LAND : 65.27 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 591,185 Ha.
Land Region : 700 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : ----

ASSESSED % OF BUILT-UP LAND
1972 : ----
1978 : ----

LOSS OF ARABLE LAND: Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	295,365	16.23	388,678	18.44	530,354	20.2	4.7	3.2	3.7
RURAL	1,524,433	87.77	1,719,293	81.56	2,090,854	79.8	2.0	2.0	2.0
TOTAL	1,819,798	100	2,107,971	100	1,621,208	100	2.5	2.2	2.3

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	14,750	1,555	7,325	13,825	52,032	89,487
RURAL	10,668	819	1,644	5,702	16,665	35,398
TOTAL	25,418	2,374	8,969	19,527	68,697	124,885

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR. DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	3	326,752	260	84	-	-	-
URBAN LESS THAN 50,000	9	203,572	-	-	507.2	-	-
VILLAGES	427	2,090,854	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO OF ESTABLISHMENTS	23,190	23,603	32,156	34,854	40,986
NO. OF EMPLOYED	42,344	42,529	58,222	72,455	81,065
% CHANGE IN ESTABLISHMENTS		1.78	36.24	8.39	17.59
% CHANGE IN EMPLOYED		0.44	36.90	24.45	11.88

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.	NO. OF Est.	NO. OF Emp.
URBAN	247	13,201	18,994	33,314	19,241	46,515
RURAL	87	3,010	21,658	31,540	21,745	34,550
TOTAL	334	16,[illegible]1	40,652	64,854	40,986	81,065

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE: Vegetables, Fruits, Cotton, Rice, Agriculture, Dairy product:

EXTRACTION:

SERVICES : Zagazig as capital with related business and trade services - all other settlements as local agriculture and commercial service centers to rural hinter land.

OTHER ____: Extensive reclamation at Hussynia - Tourism at San Hogar - Fishing - University in Zagazig

INDUSTRY :

CAPITAL :

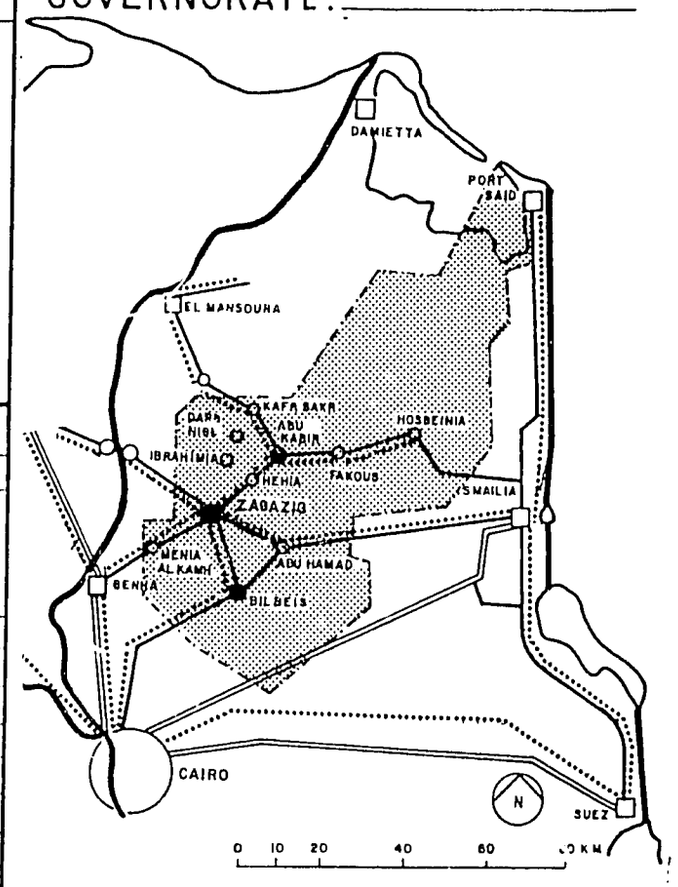
INTERMEDIATE : Spinning of recycled material

CONSUMER : Food processing and packing - Perfumes

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVERNORATE POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTURING INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	10.90	45.82	2222.6	4122	1.4	297.8	68.4	-	426.4	837.6	150.4	8.1
		RURAL	12.89	54.18	2628.4	2068.0	2.9	97.5	61.1	-	144.6	210.0	29.1	15.1
		TOTAL	23.79	100	4851.1	2500.2	4.4	395.4	129.5	-	571.0	1047.6	179.0	23.3
	1970	URBAN	4.83	19.20	1128.0	238.0	-	212.0	33.0	5.0	162.0	338.0	120.0	20.0
		RURAL	20.32	80.80	4749.0	3364.0	6.0	299.0	47.0	-	169.0	632.0	71.0	59.0
		TOTAL	25.15	100	5877.0	3702.0	6.0	511.0	80.0	5.0	331.0	970.0	191.0	79.0
	1975	URBAN	5.42	21.48	1426.0	191.0	-	241.0	46.0	2.0	289.0	464.0	159.0	34.0
		RURAL	19.79	78.52	5211.0	4162.0	-	119.0	31.0	6.0	201.0	609.0	38.0	45.0
		TOTAL	25.21	100	6637.0	4353.0	-	360.0	77.0	8.0	490.0	1073.0	197.0	79.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	10.90	45.82		8.91	0.03	6.14	1.41	-	8.79	17.27	3.10	0.17
		RURAL	12.89	54.18		42.63	0.06	2.01	1.26	-	2.98	4.33	0.60	0.31
		TOTAL	23.79	100		51.54	0.09	8.15	2.67	-	11.77	21.60	3.70	0.48
	1970	URBAN	4.83	19.20		4.05	-	3.62	0.56	0.08	2.76	5.75	2.04	0.34
		RURAL	20.32	60.80		58.95	0.14	5.08	0.80	-	2.87	10.75	1.21	1.0
		TOTAL	25.15	100		63.0	0.14	8.70	1.36	0.08	5.63	16.50	3.25	1.34
	1975	URBAN	5.42	21.48		2.88	-	3.63	0.69	0.03	4.35	7.0	[illegible].39	0.51
		RURAL	19.79	78.52		62.21	-	1.80	0.47	0.09	3.03	9.17	0.57	0.68
		TOTAL	25.[illegible]	100		65.59	-	5.43	1.16	0.12	7.38	16.17	2.96	1.19
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			11.40	-9.94	-	-5.66	12.15	-	16.13	-15.13	-3.76	14.96
		RURAL			9.86	8.60	16.85	18.67	-4.38	-	2.60	18.36	14.86	2.67
		TOTAL			3.20	6.54	10.2	4.28	-8.03	-	9.09	-1.29	1.03	20.36
	1964-1975	URBAN			-4.03	-7.42	-	-1.92	-3.63	-	-3.5	-5.37	0.51	12.9
		RURAL			6.22	6.36	-	1.81	-6.17	-	3.0	9.67	2.42	9.9
		TOTAL			2.85	5.04	-	-0.85	-4.73	-	-1.39	0.21	0.85	11.1
	1970-1975	URBAN			4.69	-4.40	-	3.0	6.64	-	11.58	6.34	5.63	10.61
		RURAL			1.86	3.67	-	-18.43	-8.32	-	3.47	-0.73	-12.5	-5.42
		TOTAL			2.43	3.24	-	-7.01	-0.70	9.40	7.85	2.02	0.6	0

GOVERNORATE: SHARKIA



URBAN SETTLEMENT: **ABU KEBIR**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
36.8	41.8	54.9	2.53%	60.7

AREA OF SETTLEMENT 1.76 sq km | GROSS DENSITY 311.7 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
16.0	-	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.6	9,736	9,583	8,461	9,630

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	39.9 (a)	- 0 - (b)	45.8 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	66.8	NO SYSTEM	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	121.9 E 21.9	D (100)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	NOT CALCULATED (1970 L.E.)	NOT CALCULATED (1970 L.E.)	N.A. (1970 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	207	203	13.3	32	0-4720
	Gharbia	766.3	Tanta	86	84	12.6		
	Cairo	6,710.8	Cairo	103	134	10.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	103	134	121.97	48	0-5632
	Gharbia	766.3	Tanta	86	84	3.44		
	Alexandria	2,318.7	Alexandria	207	203	2.86		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST/CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										●

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
37.9	58.1	69.3	3.84/a	80.57

AREA OF SETTLEMENT 4.85 | GROSS DENSITY 142.9 0/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
127.0	66.0	1.4	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

With difficulty: South across the Ismailia Canal

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.3	12,994	14,268	8,893	10,024

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	66.3 (a)	15.6 (b)	65.2 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	85.1	N.A.	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	119.9 E 19.9	N.A.	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	116.4 (1979 L.E.)	345.5 (1979 L.E.)	N.A. (1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	209	183	13.3	105	0-4720
	Gharbia	766.3	Tanta	86	84	12.6		
	Cairo	6,710.8	Cairo	55	72	10.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	55	72	21.97	201	0-5632
	Gharbia	766.3	Tanta	86	84	3.49		
	Alexandria	2,318.7	Alexandria	209	183	2.86		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL													
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW									
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH														
ECONOMIC GROW'H	SETTLEMENT SIZE	0		1		2																	
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW														
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5																

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URBAN SETTLEMENT: **ZAGAZIG**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Sharkia - Center for agricultural marketing and servicing - Seat of the University of Zagazig - Intermediate industry: spinning of recycled materials - Consumer industries of food processing and perfumes - Main transportation mode East of the Delta.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
124.4	151.2	202.6	3.10/a	228.9

AREA OF SETTLEMENT 7.89 sq km | GROSS DENSITY 256.8 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
117.0	16.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	40,580	44,278	19,030	21,319

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	87.4 (a)	51.8 (b)	89.1 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	195.4	52.6	N.A.
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	96.4 D (3.6)	26.0 D (74.0)	N.A.
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	238.9 (1970 L.E.)	1,855.6 (1970 L.E.)	N.A. (1970 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	184	164	13.3	262	0-4720
	Gharbia	766.3	Tanta	66	65	12.6		
	Cairo	6,710.8	Cairo	83	84	10.0		
MAJOR MARKETS	Cairo	6,710.8	Cairo	83	84	21.97	441	0-5632
	Gharbia	766.3	Tanta	66	65	3.44		
	Alexandria	2,318.7	Alexandria	184	164	2.86		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

BENI SUEF Governorate is located in the upper Nile Valley, south of Giza and north of Minia Governorates. The terrain slopes from a southern elevation of 32 m to a northern one of 24 m above sea level. The widest part of the Valley is 17.2 km at Beni Suef and the narrowest is 12 km at Giza. Only the Nile Valley is cultivated; with irrigation supplemented by the Ibrahimieh Canal at the western edge of the Valley. Cultivated land represents between 20-25% of the Governorate area; the balance is desert, about 3% of which lies east of the Nile.

AREA OF GOVERNORATE 1,321.7 Sq.Km
AREA OF URBAN LAND : 77.7 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 103,390 Ha.
Land Region : 6,919 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 3.7
1978 : 4.0

GAIN OF ARABLE LAND: 660 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	183,587	21.4	204,126	28.2	276,193	24.2	1.8	..7	2.3
RURAL	676,245	78.6	723,784	71.8	832,422	75.8	1.1	1.4	1.3
TOTAL	859,832	100	927,910	100	1,108,615	100	1.3	1.7	1.5

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	6,938	592	2,278	6,661	632	17,101
RURAL	4,844	205	806	1,160	262	7,277
TOTAL	11,782	797	3,084	7,821	894	24,378

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000's)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	118,148	287	162	22		
URBAN LESS THAN 50,000	6	158,045			219.4		
VILLAGES	211	832,422	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	11,330	11,912	16,371	17,266	16,890
NO. OF EMPLOYED	18,942	20,693	28,976	27,733	29,743
% CHANGE IN ESTABLISHMENTS		5.14	3.98	5.47	-2.18
% CHANGE IN EMPLOYED		9.24	40.01	-4.29	7.25

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO OF Est.	NO OF Emp.	NO OF Est	NO OF Emp	NO OF Est	NO OF Emp.
URBAN	152	5,391	7,674	11,672	7,826	17,063
RURAL	21	309	9,043	12,371	9,064	12,680
TOTAL	173	5,700	16,717	24,043	16,890	29,743

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Maize, Cotton, Wheat, Beans, Vegetables, Sugar Cane, Citrus fruits, Clover, Citrus, Vinyards, Water melon

EXTRACTION:

SERVICES :
Beni Suef as governorate capital and regional center, with related business and trade services

OTHER :
Land reclamation

INDUSTRY :

CAPITAL :

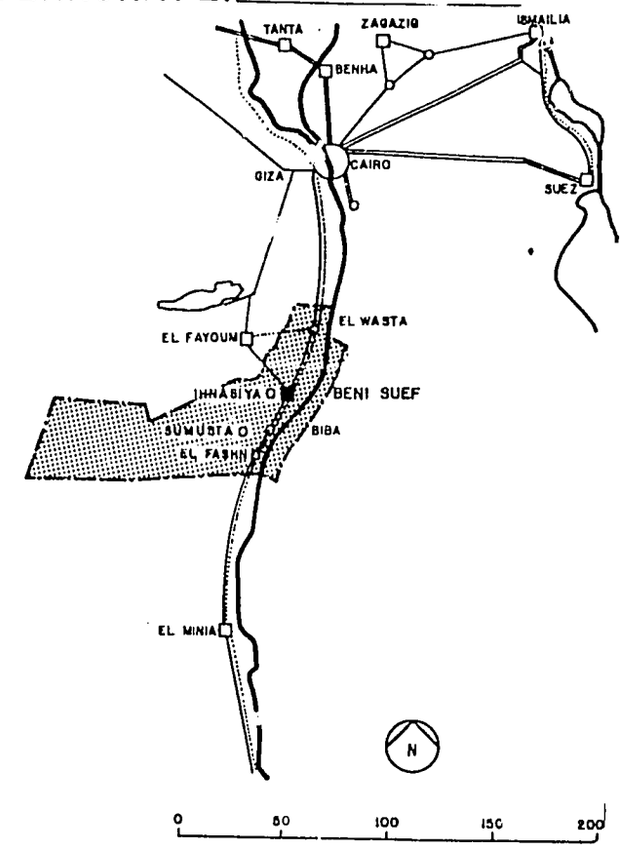
INTERMEDIATE :

CONSUMER :
Textile weaving

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	11.87	46.60	1107.5	354.1	0.7	102.7	27.1	0.7	173.5	380.5	63.0	5.0
		RURAL	13.60	53.40	1269.1	1013.4	1.7	27.1	4.7	-	77.0	126.7	15.4	3.1
		TOTAL	25.47	100	2376.5	1367.4	2.4	129.8	32.1	0.7	250.5	507.1	78.4	8.1
	1970	URBAN	5.34	20.04	547.0	191.0	1.0	68.0	21.0	3.0	71.0	155.0	25.0	12.0
		RURAL	21.30	79.96	2183	1895	-	91.0	14.0	-	91.0	74.0	3.0	15.0
		TOTAL	26.64	100	2730	2086	1.0	159.0	35.0	3.0	162.0	229.0	28.0	27.0
	1975	URBAN	4.97	23	569.0	177.0	1.0	62.0	18.0	2.0	85.0	179.0	32.0	13.0
		RURAL	16.64	77	1907	1389	-	78.0	126.0	15.0	94.0	148.0	38.0	19.0
		TOTAL	21.61	100	2476	1566	1.0	140.0	144.0	17.0	179.0	327.0	70.0	32.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	11.87	46.60		14.93	0.03	4.32	1.15	0.03	7.30	16.01	2.65	0.21
		RURAL	13.60	53.40		42.64	0.07	1.14	0.20	-	3.24	5.33	0.65	0.13
		TOTAL	25.42	100		57.54	0.10	5.46	1.35	0.03	10.54	21.34	3.30	0.34
	1970	URBAN	5.34	20.04		7.00	0.04	2.49	0.77	0.11	2.60	5.67	0.92	0.44
		RURAL	21.30	79.96		69.41	-	3.33	0.51	-	3.33	2.71	0.11	0.55
		TOTAL	26.64	100		76.41	0.04	5.82	1.28	0.11	5.93	8.38	1.03	0.99
	1975	URBAN	4.97	22.96		7.14	0.04	2.5	0.73	0.08	3.43	7.23	1.30	0.52
		RURAL	16.64	77.02		56.10	-	3.15	5.09	0.61	3.80	5.97	1.53	0.77
		TOTAL	21.61	100		63.24	0.04	5.65	5.82	0.69	7.23	13.20	2.83	1.29
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			11.75	-10.29	5.71	- 6.87	-4.40	24.02	-14.89	-14.97	-15.40	14.62
		RURAL			9.04	10.43	-	20.19	18.01	-	2.96	- 8.96	-27.32	26.33
		TOTAL			2.31	7.04	-14.38	3.39	1.45	24.02	- 7.26	-13.25	-17.17	20.11
	1964-1975	URBAN			- 6.05	- 6.34	3.11	- 4.58	-3.80	9.41	- 6.49	- 6.85	- 6.15	8.70
		RURAL			1.70	2.85	-	9.61	29.80	-	1.81	1.41	8.18	16.51
		TOTAL			0.37	1.21	- 7.82	0.69	11.69	28.87	- 1.05	- 3.99	- 1.03	12.51
	1970-1975	URBAN			0.79	- 1.53	0	- 1.82	-3.08	-8.12	3.60	2.88	4.94	1.60
		RURAL			- 7.70	- 6.21	-	- 3.06	43.94	-	0.65	13.86	50.76	4.73
		TOTAL			- 1.95	- 5.73	0	- 2.55	28.24	34.69	2.0	7.12	18.33	3.40

GOVERNORATE: BENI SUEF



URBAN SETTLEMENT: **BENI SUEF**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate Beni Suef - Intermediate and consumer industries of weaving and textiles - Center for agricultural marketing and servicing.

POPULATION

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
78.8	90.4	118.1	2.56%	130.7

AREA OF SETTLEMENT 10.0 sq km | GROSS DENSITY 118.15

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
287.0	162.0	22.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

Could expand on the East bank of the Nile; a bridge is being built towards that purpose. Could also expand beyond the present strip of agricultural land in the areas North and South of the corridor to El Fayoum.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.7	24,883	30,803	15,008	16,491

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	65.8 (a)	34.2 (b)	72.9 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	198.3	0.118	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	167.9 E 67.9	100.0 No E or D	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	88.9 (1979 L.E.)	203.0 (1979 L.E.)	(1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	331	341	9.4	2	0-4720
	Port Said	262.6	Port Said	336	342	2.5		
	Assiut	470.0	Assiut	496	296	1.5		
MAJOR MARKETS	Cairo	6,710.8	Cairo	116	120	6.50	58	0-5632
	Minia	434.8	Minia	128	140	1.37		
	Alexandria	2,318.7	Alexandria	331	341	0.91		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH		LOW					
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

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MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

EL FAYOUM Governorate is a natural depression which lies between the Upper Nile Valley and the western desert plateau. The El Fayoum depression is separated from the Nile Valley by a high ridge with a natural gap which is penetrated by the Bahr Yussef Canal feeding Lake Qarun from the Nile. From this ridge, the terrain slopes towards the north west to reach Lake Qarun at 45 m below sea level. The area of the lake is 214.3 sq km. Parallel to its northern shore is a ridge reaching a height of 145 m above sea level. 8 km west and south west of the lake there is a rock wall reaching a height of 40-60 m and separating El Fayoum from the Wadi Rayan depression which is 50 m deep.

AREA OF GOVERNORATE: 1,827.2 Sq.Km
AREA OF URBAN LAND : 65.8 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 129,138 Ha.
Land Region : 10,443 Ha.
Reclaimed : 2,079 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.8
1978 : 2.0

LOSS OF ARABLE LAND: 5,469 Ha.

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	161,843	19.3	200,348	21.4	276,428	24.2	3.6	3.3	3.4
RURAL	677 320	80.7	734,933	78.6	863,817	75.8	1.4	1.6	1.5
TOTAL	839,163	100	935,281	100	1,140,245	100	1.8	2.0	1.9

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	7,149	481	920	1,480	691	12,721
RURAL	4,453	173	488	702	211	6,047
TOTAL	11,602	654	1,408	4,182	922	18,768

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000's)				
SETTLEMENT CATEGORY	NO	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	167,081	150	191	12	-	-
URBAN LESS THAN 50,000	4	109,347			34.8		
VILLAGES	156	863,817	(a) 405 p/hctr - (b) 280 p/hctr - (c) 140 p/hctr (d) 92 p/hctr - (e) 40 p/hctr				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO OF ESTABLISHMENTS	12,600	12,904	15,063	19,457	23,633
NO. OF EMPLOYED	21,578	22,721	28,124	41,370	40,266
% CHANGE IN ESTABLISHMENTS		2.41	16.73	29.17	6.04
% CHANGE IN EMPLOYED		5.79	23.78	47.10	-2.67

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO OF Est.	PRIVATE SECTOR NO OF Emp	TOTAL NO OF Est.	TOTAL NO OF Emp.
URBAN	131	3,258	6,232	18,102	9,363	21,360
RURAL	36	3,483	11,234	15,423	11,270	18,906
TOTAL	167	6,741	20,466	33,525	20,633	40,266

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Maize, Cotton, Wheat, Beans, Vegetables, Barley, Clover, Citrus

EXTRACTION:

SERVICES:
Fayoum as capital providing related business and trade services to the region

OTHER:
Land reclamation, fishing in Lake Qarun, archaeological sites and limited tourism

INDUSTRY:

CAPITAL:

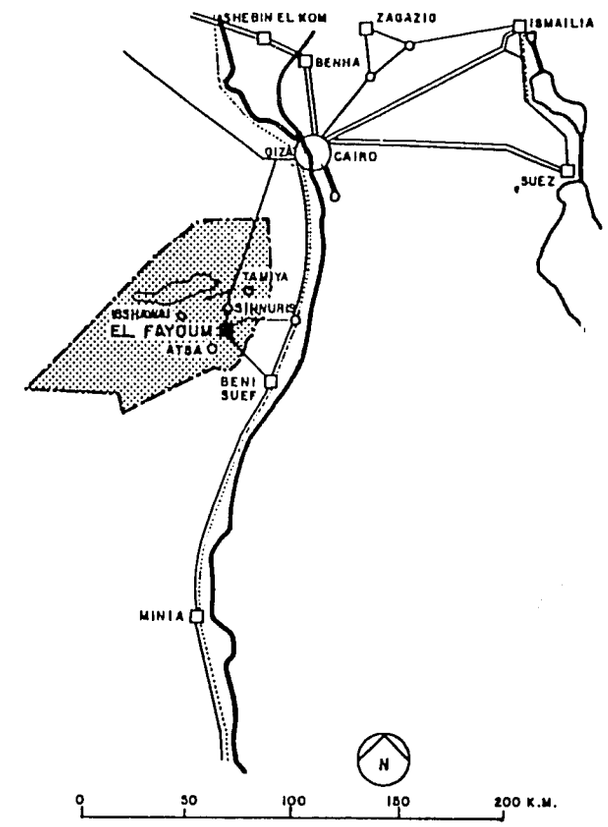
INTERMEDIATE:

CONSUMER:
Food industries - drying and packing of dates - textiles

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVERNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTUR INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO OF EMPLOYED POPULATION BY YEAR & SECTOR (000's)	1964	URBAN	12.41	45.00	1141.0	126.9	-	151.2	31.9	1.2	194.1	387.0	44.1	4.7
		RURAL	14.68	54.20	1350.4	1360.5	1.4	7.7	4.0	-	61.3	870.9	7.5	3.2
		TOTAL	27.09	100	2491.4	1487.3	1.4	176.9	35.9	1.2	255.4	1267.9	51.6	8.0
	1970	URBAN	5.66	20.43	584.0	173.0	-	118.0	15.0	3.0	93.0	142.0	23.0	17.0
		RURAL	22.05	79.57	2275.0	1673.0	-	2500	38.0	23.0	169.0	100.0	12.0	4.0
		TOTAL	27.71	100	2859.0	1852.0	-	3680	53.0	26.0	262.0	242.0	35.0	21.0
	1975	URBAN	5.37	21.76	624.0	145.0	-	98.0	28.0	9.0	107.0	171.0	43.0	23.0
		RURAL	19.32	78.24	2244.0	2030.0	-	29.0	13.0	-	44.0	112.0	6.0	10.0
		TOTAL	24.69	100	2868.0	2175.0	-	127.0	41.0	9.0	151.0	283.0	49.0	33.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.41	45.8		13.14	-	6.07	1.28	0.05	7.79	15.53	1.77	0.19
		RURAL	14.68	54.2		46.58	0.05	1.03	0.16	-	2.46	3.49	0.30	0.13
		TOTAL	27.09	100		59.70	0.05	7.10	1.44	0.05	10.25	19.02	2.07	0.32
	1970	URBAN	5.66	20.43		6.67	-	4.13	0.54	0.11	3.25	4.97	0.80	0.60
		RURAL	22.05	79.57		58.73	-	8.74	1.31	0.80	5.91	3.50	0.42	0.14
		TOTAL	27.71	100		64.78	-	12.87	1.85	0.91	9.16	8.47	1.22	0.74
	1975	URBAN	5.37	21.76		5.06	-	1.41	0.98	0.31	3.73	5.96	1.50	0.80
		RURAL	19.32	78.24		76.78	-	1.01	0.45	-	1.53	3.91	0.21	0.35
		TOTAL	24.69	100.0		75.84	-	4.42	1.43	0.31	5.26	9.87	1.71	1.15
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			-11.17	-19.60	-	-4.13	-12.57	14.72	12.26	16.71	-10.14	21.32
		RURAL			9.70	6.16	-	37.94	37.56	-	16.90	2.33	7.90	3.51
		TOTAL			2.29	3.65	-	12.21	6.50	-50.72	0.43	-11.20	-6.46	16.15
	1964-1975	URBAN			-5.49	7.19	-	-3.94	-1.18	19.02	-5.41	-7.42	0.23	14.38
		RURAL			4.62	5.08	-	1.11	10.74	-	3.01	2.30	-1.99	10.74
		TOTAL			1.28	3.43	-	-3.01	1.21	18.02	-4.78	-4.69	-0.46	12.92
	1970-1975	URBAN			1.32	-3.54	-	-3.71	12.48	-	2.80	3.72	12.51	6.05
		RURAL			-0.27	3.80	-	-67.35	21.42	-	26.91	2.27	13.86	-
		TOTAL			0.56	3.22	-	-21.28	-5.11	-21.22	11.02	3.13	6.73	9.04

GOVERNORATE: EL FAYOUM



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URBAN SETTLEMENT: **EL FAYOUM**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of El Fayoum - Center for agricultural marketing and servicing - Consumer industries of textiles and food processing - Main center for Roamn and Coptic arhaeological sites.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
102.1	134.0	167.1	3.13/a	189.0

AREA OF SETTLEMENT 12.79 sq km | GROSS DENSITY 130.6 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
350.0	191.0	12.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	36,828	42,275	21,330	24,085

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	57.5 (a)	26.3 (b)	69.0 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	65.0	42.0	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	38.9 D (61.1)	25.1 D (74.9)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	379.0 (1970 L.E.)	485.6 (1970 L.E.)	(1970 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Cairo	6,710.8	Cairo	112	98	8.5	104	0-4720
	Alexandria	2,318.7	Alexandria	334	254	7.8		
	Port Said	262.6	Port Said	334	305	1.7		
MAJOR MARKETS	Cairo	6,710.3	Cairo	112	113	12.19	108	0-5632
	Sohag	405.3	Sohag	407	446	1.53		
	Aswan	229.7	Aswan	868	930	0.99		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5	
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2		
	RATE OF POPULATION GROWTH	0	1	2	3	4		
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5	

OVERALL ASSESSMENT	ECONOMIC GROWTH POTENTIAL HIGH				ECONOMIC GROWTH POTENTIAL LOW			
ABSORPTION CAPACITY POTENTIAL HIGH								
ABSORPTION CAPACITY POTENTIAL LOW								●

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GOVERNORATE: MINIA

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

MINIA Governorate is located in northern Upper Egypt between Assiut and Beni Suef Governorates. The terrain slopes from a southern elevation of 43 m to a northern elevation of 32 m. The valley is bound from the east and west by desert plateaus rising to a height of 200 m. The Nile Valley in Minia is generally wider than the rest of Upper Egypt. The Nile runs in the eastern section of the valley leaving a narrow east bank. West of the river the valley varies between 8-16 km. In this sector of the Nile there is a river island every 4.7 km. Just south of the Governorate border Bahr Yussef Canal starts as a branch of the Ibrahimieh Canal. It runs along the western edge of the valley until it reaches El Fayoum.

AREA OF GOVERNORATE 2,261.7 Sq.Km
AREA OF URBAN LAND : 20.9 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 150,829 Ha.
Land Region : 18,753 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 0.4
1978 : 0.5

LOSS OF ARABLE LAND: 14,973 Ha.

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	268,165	17.2	338,998	19.9	430,830	20.9	4.0	2.4	3.0
RURAL	1,292,146	82.8	1,366,624	80.1	1,624,909	79.1	0.9	1.7	1.4
TOTAL	1,560,311	100	1,705,622	100	2,055,739	100	1.5	1.9	1.7

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	7,566	787	1,159	5,097	644	15,253
RURAL	3,949	327	308	641	92	5,317
TOTAL	11,515	1,114	1,467	5,738	736	20,570

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY (000's)

SETTLEMENT CATEGORY	NO	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
	SETTLEMENT DISTRIBUTION		NET URBAN POPULATION ABSORPTION CAPACITY				
URBAN LARGER THAN 50,000	2	220,679	297	169	7	-	-
URBAN LESS THAN 50,000	7	210,151			164.9		
VILLAGES	125	1,624,909	(a) 405 p/hctr - (b) 280 p/hctr. - (c) 140 p/hctr (d) 92 p/hctr - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO OF ESTABLISHMENTS	23,277	24,317	27,006	32,153	29,465
NO. OF EMPLOYED	41,815	45,526	55,405	59,848	58,679
% CHANGE IN ESTABLISHMENTS		4.47	23.10	7.15	-8.35
% CHANGE IN EMPLOYED		8.98	21.70	8.02	-1.95

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO OF Est	PRIVATE SECTOR NO OF Emp	TOTAL NO OF Est	TOTAL NO OF Emp
URBAN	231	8,790	12,005	19,643	12,236	28,433
RURAL	40	5,685	17,189	24,561	17,229	33,246
TOTAL	271	14,475	29,194	44,204	29,465	58,679

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

Maize, Cotton, Sugar cane, Wheat, Beans, Vegetables, Clover, Vinyards, Citrus, Water melon

EXTRACTION:

SERVICES:

Minia as governorate capital and regional center, with related business and trade services

OTHER:

University, Land reclamation, Archaeological sites and tourism

INDUSTRY:

CAPITAL:

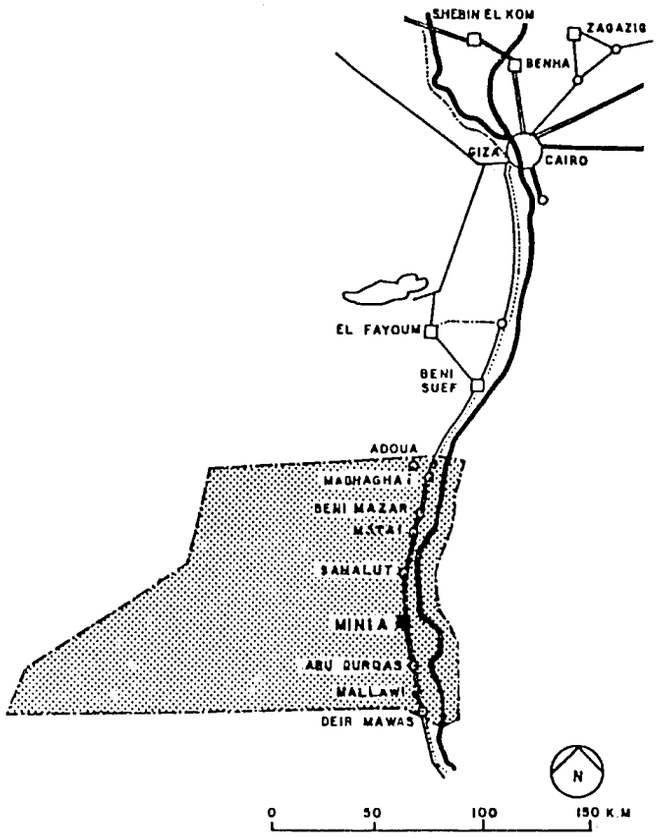
INTERMEDIATE:

CONSUMER:

Spinning and weaving

EMPLOYMENT

CATEGORY	YEAR	POPULATION GRO. P	EMPLOYMENT AS % OF TOTAL GOVRNRT. POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTUR INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964 URBAN	11.56	46.67	1954.6	449.8	1.3	221.6	72.9	-	401.6	650.8	149.5	5.0
	1964 RURAL	13.21	53.33	2233.6	1718.9		18.8	7.9	-	68.7	141.6	17.6	260.1
	1964 TOTAL	24.77	100	4188.2	2168.7	1.3	242.5	80.8	-	470.3	792.4	167.1	265.1
	1970 URBAN	4.77	18.18	897.0	282.0	-	134.0	28.0	6.0	145.0	225.0	48.0	29.0
	1970 RURAL	21.50	81.82	4038.0	3397.0	-	116.0	14.0	4.0	153.0	228.0	91.0	35.0
	1970 TOTAL	26.27	100	4935.0	3679.0	-	250.0	42.0	10.0	298.0	453.0	139.0	64.0
	1975 URBAN	5.98	19.33	1037.0	273.0	-	159.0	20.0	6.0	180.0	316.0	57.0	26.0
	1975 RURAL	25.74	80.67	4328.0	3912.0	-	37.0	6.0	6.0	86.0	269.0	-	12.0
	1975 TOTAL	31.72	100	5365.0	4185.0	-	196.0	26.0	12.0	266.0	585.0	57.0	38.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964 URBAN	11.56	46.67		10.74	0.03	5.34	1.74	-	9.59	15.54	3.57	0.12
	1964 RURAL	13.21	53.33		41.04	-	0.45	0.19	-	1.64	3.38	0.42	6.21
	1964 TOTAL	24.77	100		51.78	0.03	5.79	1.93	-	11.23	18.92	3.99	6.33
	1970 URBAN	4.77	18.18		5.71	-	2.71	0.57	0.12	2.94	4.56	0.98	0.59
	1970 RURAL	21.50	81.82		68.84	-	2.35	0.28	0.08	3.10	4.62	1.84	0.71
	1970 TOTAL	26.27	100		74.55	-	5.06	0.85	0.20	6.04	9.18	2.82	1.30
	1975 URBAN	5.98	19.33		5.09	-	2.96	0.37	0.11	3.36	5.90	1.06	0.48
	1975 RURAL	25.74	80.67		72.92	-	0.69	0.11	0.11	1.60	5.01	-	0.23
	1975 TOTAL	31.72	100		78.11	-	3.65	0.48	0.22	4.96	10.91	1.06	0.71
RATES OF CHANGE IN EMPLOYMENT	1964-1970 URBAN			-12.98	-7.78	-	-8.54	-15.94	-	-16.98	-17.70	-18.94	29.26
	1964-1970 RURAL			9.87	11.35	-	30.28	9.41	-	13.15	7.94	77.39	-33.43
	1964-1970 TOTAL			2.73	8.81	-	0.51	-10.91	-	-7.61	-9.32	-3.07	-23.69
	1964-1975 URBAN			-5.74	-4.54	-	-3.10	-11.75	-	-7.29	-6.57	-8.77	14.97
	1964-1975 RURAL			6.01	7.48		6.13	-2.57	-	2.04	5.83	-	-27.96
	1964-1975 TOTAL			2.26	5.99	-	-1.91	-10.31	-	-5.18	-2.71	-9.78	-17.66
	1970-1975 URBAN			2.90	0.65	-	3.42	-6.73	0	4.32	6.79	3.44	-2.18
	1970-1975 RURAL			1.39	2.82		22.85	-19.95	8.11	-11.52	1.31	-	-21.41
	1970-1975 TOTAL			1.67	2.58	-	-4.87	-	1.65	-2.27	5.11	-17.83	-10.43



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URBAN SETTLEMENT: **MALLAWI**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

POPULATION (IN 000's)

1950	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
52.6	59.9	74.2	2.17/a	80.9

AREA OF SETTLEMENT 3.87 sq km | GROSS DENSITY 191.9 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
83.0	34.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	14,922	17,071	11,097	11,860

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	45.5 (a)	8.0 (b)	56.0 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	140.0	- 0 -	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	189 E 89	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	* (1970 L E)	575.8 (1970 L E)	(1970 L E)

* Excess capacity sufficient

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	508	503	14.3	2	[illegible]
	Port Said	262.6	Port Said	507	502	3.3		
	Cairo	6,710.8	Cairo	287	311	2.7		
MAJOR MARKETS	Cairo	6,710.8	Cairo	287	311	13.47	7	0-56.2
	Alexandria	2,318.7	Alexandria	508	503	2.65		
	Beheira	653.5	Damanhour	444	441	1.28		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

									OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH		LOW	
ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5		ABSORPTION CAPACITY POTENTIAL	HIGH				
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5							
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW				LOW				
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2								
	RATE OF POPULATION GROWTH	0	1	2	3	4								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5							

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PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Minia - Center for agricultural marketing and servicing - Intermediate and consumer industries of spinning and weaving - Archaeological sites and tourism - Seat of Minia University.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
94.5	112.6	146.4	277/4	163.3

AREA OF SETTLEMENT 10.96 sq km | **GROSS DENSITY** 133.6 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
[illegible]	[illegible]	7.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In two directions on East Bank of the Nile; a bridge is being built towards that purpose and West beyond the present strip of agricultural land to the foothills of the Western Desert plateau.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	29,861	35,102	15,239	16,600

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	62.9 (a)	42.2 (b)	71.8 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	187.0	79.2	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	127.7 E 27.7	54.1 D (45.9)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	172.5 (1979 L.E)	416.6 (1979 L.E)	(1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	462	452	14.3	6	0-4720
	Port Said	262.6	Port Said	461	452	3.3		
	Cairo	6,710.8	Cairo	241	260	2.7		
MAJOR MARKETS	Cairo	6,710.8	Cairo	241	260	13.47	20	0-5032
	Alexandria	2,318.7	Alexandria	462	452	12.65		
	Beheira	653.5	Damanhour	397	394	1.28		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

								OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH		LOW	
ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5						
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5						
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH			●	
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2							
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW				
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5						

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GOVERNORATE: ASWAN

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

ASWAN Governorate is located at the southern end of south Upper Egypt, north of the Sudanese border. The terrain of the valley slopes from a 100 m elevation in the south to 84 m in the north. The valley is bound on both sides by desert plateaus. The eastern plateau steps up to a height of 300-400 m then rises suddenly to 600 m; the western plateau rises to an average height of 200-300 m with peaks of 500 m above sea level. The valley reaches a width of 2 to 3 kms at Aswan and narrows to 1/3 km between Aswan and the High Dam Lake. The Lake is about 550 km long and reaches widths of 15-25 km. North of the High Dam, the Nile has a river island every 15 km.

AREA OF GOVERNORATE: 678.5 Sq.Km
AREA OF URBAN LAND: 31.2 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 35,392 Ha.
Land Region : 4,682 Ha.
Reclaimed : 8,300 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 0.4
1978 : 0.6

LOSS OF ARABLE LAND: 6,606 Ha.

POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	97,902	25.4	182,606	35.1	229,657	37	10.9	2.3	5.5
RURAL	287,448	74.6	337,961	64.9	390,275	63	2.7	1.4	1.9
TOTAL	385,350	100	520,567	100	619,932	100	5.1	1.8	3.0

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX.	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	3,817	1,084	237	1,212	615	6,965
RURAL	1,399	395	36	272	117	2,219
TOTAL	5,216	1,479	273	1,484	732	9,184

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR. DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	144,377	465	277	66	-	-
URBAN LESS THAN 50,000	3	85,280	-	4	207.75	-	-
VILLAGES	48	390,275	(a) 408 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	4,547	5,119	7,214	7,219	8,805
NO. OF EMPLOYED	[illegible]	22,125	34,039	25,708	26,663
% CHANGE IN ESTABLISHMENTS		12.58	40.93	0.35	21.63
% CHANGE IN EMPLOYED		82.14	53.85	-24.48	3.72

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO. OF Est.	PUBLIC SECTOR NO. OF Emp.	PRIVATE SECTOR NO. OF Est.	PRIVATE SECTOR NO. OF Emp.	TOTAL NO. OF Est.	TOTAL NO. OF Emp.
URBAN	141	8,422	5,606	7,305	5,747	15,727
RURAL	61	7,022	2,997	3,914	3,058	10,936
TOTAL	202	15,444	8,603	11,219	8,805	26,663

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Sugar cane, Maize, Wheat, beans, Barley

EXTRACTION:
Phosphates in Aswan

SERVICES:
Aswan as capital and regional center providing related business and trade services.
Main center of hydroelectric power production

OTHER:
University under construction, fishing from High Dam Lake, Intensive tourism

INDUSTRY:

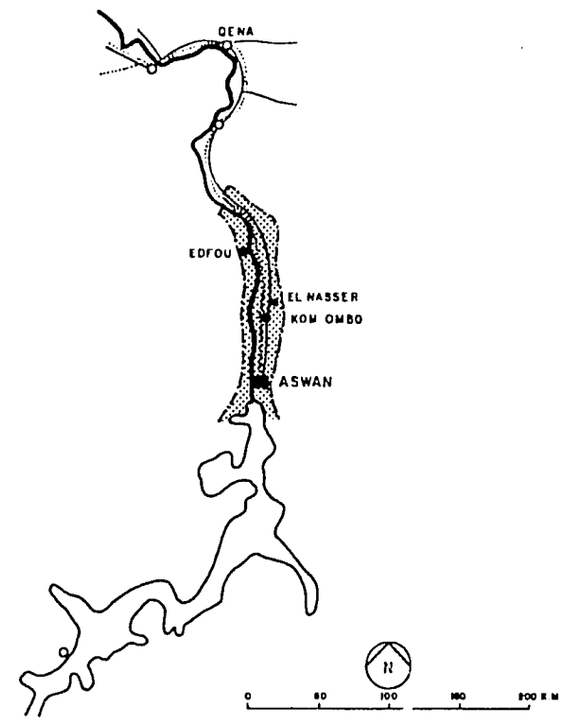
CAPITAL:
Steel in Aswan

INTERMEDIATE:
Fertilizers - Phosphates concentration - Calcium carbides - Ferro-Silicones - Heavy water - Ammonia nitrates

CONSUMER:
Sugar cane in Kom Ombo

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVERNORAT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000S)	1964	URBAN	13.97	56.09	596.3	159.7	12.8	95.7	73.8	2.4	75.5	148.0	28.1	0.4
		RURAL	10.93	43.91	466.8	381.8	1.7	13.6	10.3	0.8	8.2	38.8	11.2	0.4
		TOTAL	24.90	100	1063.2	541.5	14.5	109.3	84.1	3.3	83.7	186.8	39.3	0.8
	1970	URBAN	10.24	38.76	590.0	72.0	15.0	95.0	11.0	10.0	81.0	136.0	41.0	30.0
		RURAL	16.17	61.24	932.0	618.0	62.0	40.0	22.0	-	49.0	97.0	5.0	39.0
		TOTAL	26.41	100	1522.0	690.0	77.0	135.0	134.0	10.0	130.0	231.0	46.0	69.0
	1975	URBAN	10.52	39.49	682.0	112.0	9.0	106.0	31.0	39.0	108.0	223.0	40.0	14.0
		RURAL	16.12	60.51	1045.0	820.0	-	[illegible]	11.0	11.0	75.0	80.0	13.0	6.0
		TOTAL	26.64	100	1727.0	932.0	9.0	135.0	42.0	50.0	183.0	303.0	53.0	20.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	13.97	56.09		15.02	1.20	9.0	6.94	0.23	7.10	13.92	2.64	0.04
		RURAL	10.93	43.91		35.91	0.16	1.28	0.97	0.08	0.77	3.65	1.05	0.04
		TOTAL	24.90	100		50.93	1.36	10.28	7.91	0.31	7.87	17.57	3.69	0.08
	1970	URBAN	16.24	38.76		4.73	0.99	6.24	7.9[illegible]	0.66	5.32	8.80	2.69	1.97
		RURAL	16.17	61.24		40.61	4.07	2.63	1.45	-	3.22	6.37	0.33	2.56
		TOTAL	26.41	100		45.34	5.06	8.87	8.81	0.66	8.54	15.17	3.02	4.53
	1975	URBAN	10.52	39.49		6.49	0.52	6.14	[illegible]	2.26	6.25	12.91	2.32	0.81
		RURAL	16.12	60.51		47.48	-	1.68	0.64	0.64	4.34	4.63	0.75	0.35
		TOTAL	26.64	100		53.97	0.52	7.82	2.43	2.90	10.59	17.54	3.07	1.16
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			-0.18	-11.20	2.69	0.12	6.9[illegible]	23.44	1.10	-1.65	6.31	70.75
		RURAL			11.52	8.03	60.0	17.97	12.63		29.61	15.27	-13.36	75.52
		TOTAL			5.98	4.04	27.87	3.52	7.76	18.47	7.34	3.54	2.65	73.27
	1964-1975	URBAN			1.23	-3.22	-3.17	0.93	-7.88	25.16	3.26	3.73	3.22	31.60
		RURAL			7.32	6.95	-	6.87	0.59	23.78	20.13	6.57	1.39	24.17
		TOTAL			4.41	4.94	-4.31	1.92	-6.31	24.71	7.11	4.39	2.75	28.71
	1970-1975	URBAN			2.90	8.84	-10.22	2.15	-25.64	27.22	5.75	10.10	-0.49	13.86
		RURAL			2.29	5.60	-	-6.43	-13.86	-	8.51	-3.85	19.11	37.44
		TOTAL			2.53	6.07	-42.93	0	-23.20	32.19	6.84	5.43	2.63	-24.74



PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Aswan - Extractive industries of phosphate, iron ore and granite - Intermediate industries of chemicals - Consumer industries of food processing (fish from High Dam Lake) - Power generation for national network from High Dam Lake - Tourism and archaeology.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
48.4	127.6	144.3	7.07/a	189.6

AREA OF SETTLEMENT 15.00 sq km | GROSS DENSITY 9[illegible] p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
465.0	277.0	66.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In one direction: East in desert.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	29,191	32,110	24,851	27,661

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	47.4 (a)	- 0 - (b)	66.3 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	170.0	- 0 -	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	117.7 E 17.7	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	230.1 (1970 L.E.)	NOT CALCULATED (1970 L.E.)	(1970 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Alexandria	2,318.7	Alexandria	1160	1232	4.8	1	0-4720
	Red Sea	48.0	Safaga	470	485	3.4		
	Cairo	6,710.6	Cairo	939	1040	1.2		
MAJOR MARKETS	Cairo	6,710.8	Cairo	939	1040	7.05	1	0-5632
	Alexandria	2,318.7	Alexandria	1160	1232	4.10		
	Qena	391.1	Qena	309	345	1.28		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL								
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW				
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH									
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2												
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW									
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5											

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GOVERNORATE: QENA

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

QENA Governorate is located in south Upper Egypt between Aswan and Sohag Governorates. The terrain of the valley slopes from an elevation of 76 m in the south to an elevation of 73 m in the north. The valley is bound on both sides by desert plateaus. The eastern plateau rises to 400 m and the western plateau rises to 200 m. The Nile runs in the center of the valley which reaches a width of 5-6 km. In this section of the Nile there is a river island every 6 kms.

AREA OF GOVERNORATE 1,050.7 Sq.Km
AREA OF URBAN LAND : 87.2 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 126,168 Ha.
Land Region : 17,982 Ha.
Reclaimed : 9,433 Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.4
1978 : 1.5

GAIN OF ARABLE LAND: 8,250 Ha.

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE: Sugar cane - Maize - Wheat - Lentils - Beans - Sesames - Barley - Fenugreek - Limited vegetables and fruits

EXTRACTION:

SERVICES: Qena as governorate capital and regional center providing related business and trade services. Main gate of upper Nile Valley to Red Sea region.

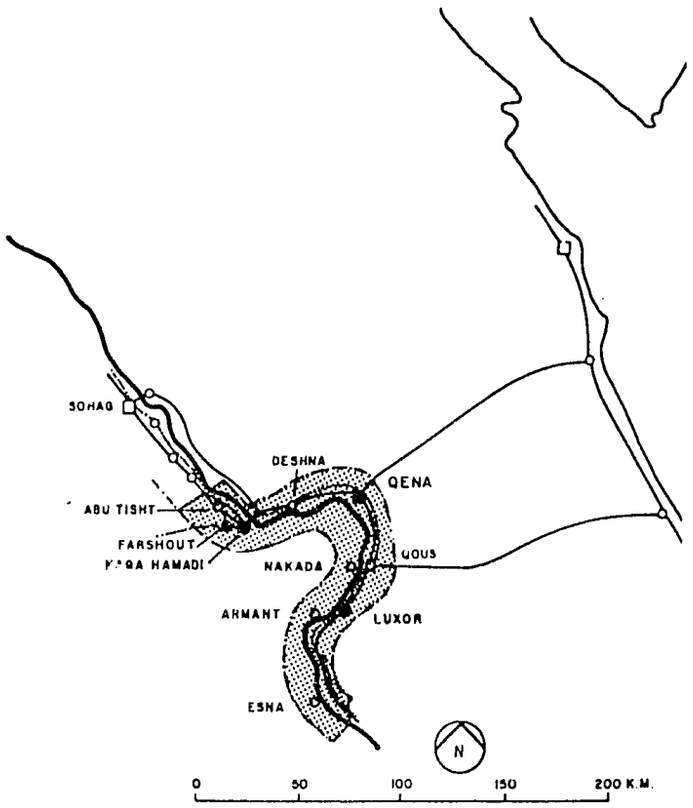
OTHER: Extensive archaeological sites in Luxor - Intensive tourism activity.

INDUSTRY:

CAPITAL:

INTERMEDIATE: Aluminium and cement in Naga Hamadi

CONSUMER: Weaving and spinning in Qena - Sugar cane in Naga Hamadi



POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN	184,785	13.7	378,869	27.2	391,052	22.9	12.7	0.3	4.8
RURAL	1,166,573	86.3	1,191,943	74.2	1,314,316	77.1	0.4	1.0	0.7
TOTAL	1,351,358	100	1,470,812	100	1,705,368	100	1.4	1.5	1.5

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	7,829	1,983	365	6,210	2,362	18,649
RURAL	4,965	1,024	248	7,801	2,825	16,963
TOTAL	12,794	3,007	613	14,011	5,187	35,612

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
			NET URBAN POPULATION ABSORPTION CAPACITY ('000'S)				
URBAN LARGER THAN 50,000	1	144,377	465	277	66	-	-
URBAN LESS THAN 50,000	1	85,280	-	-	207.8	-	-
VILLAGES	48	490,275	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	16,365	16,507	20,238	25,111	24,562
NO. OF EMPLOYED	29,534	32,313	42,561	54,378	55,754
% CHANGE IN ESTABLISHMENTS		0.87	22.60	24.07	-2.19
% CHANGE IN EMPLOYED		9.41	31.72	27.77	2.53

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO. OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO OF Est	PRIVATE SECTOR NO. OF Emp.	TOTAL NO OF Est	TOTAL NO OF Emp.
URBAN	213	13,566	11,486	16,993	11,699	30,559
RURAL	62	7,797	12,801	17,398	12,863	25,195
TOTAL	275	21,363	24,287	34,391	24,562	55,754

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MAN. ACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	12.05	52.31	1781.0	412.5	1.4	263.0	64.0	5.1	309.0	506.0	115.9	5.2
		RURAL	10.99	47.69	1624.6	1281.6	2.4	61.7	25.2	-	97.4	143.1	10.9	2.4
		TOTAL	23.04	100	3406.7	1694.1	3.8	324.6	89.2	5.1	406.4	729.0	146.8	7.5
	1970	URBAN	4.36	17.92	698.0	226.0	-	116.0	23.0	1.0	114.0	160.0	48.0	10.0
		RURAL	19.98	82.08	3198.0	2041.0	-	274.0	124.0	11.0	345.0	312.0	72.0	19.0
		TOTAL	24.34	100	3896.0	2267.0	-	390.0	147.0	12.0	459.0	472.0	120.0	29.0
	1975	URBAN	3.91	17.90	699.0	254.0	3.0	93.0	29.0	2.0	125.0	149.0	29.0	15.0
		RURAL	17.94	82.10	3207.0	2509.0	12.0	103.0	142.0	-	193.0	173.0	43.0	32.0
		TOTAL	21.85	100	3906.0	2763.0	15.0	196.0	171.0	2.0	318.0	322.0	72.0	47.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	12.05	52.31		12.11	0.03	2.72	1.88	0.15	9.07	17.20	3.99	0.15
		RURAL	10.99	47.69		37.62	0.07	1.81	0.74	-	2.86	4.20	0.32	0.07
		TOTAL	23.04	100		49.73	0.11	9.53	2.62	0.15	11.93	21.40	4.31	0.22
	1970	URBAN	4.36	17.92		5.82		2.98	0.59	0.03	2.93	4.10	1.23	0.26
		RURAL	19.98	82.08		52.19	-	7.03	3.18	0.28	8.85	8.01	1.85	0.49
		TOTAL	24.34	100		58.19	-	10.01	3.77	0.31	11.78	12.11	3.08	0.75
	1975	URBAN	3.91	17.90		6.51	0.08	2.38	0.74	0.05	3.20	3.91	0.74	0.38
		RURAL	17.94	82.10		64.23	0.31	2.64	3.64	-	4.94	4.44	1.10	0.82
		TOTAL	21.85	100		70.74	0.39	5.02	4.38	0.05	8.14	8.24	1.84	1.20
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			15.62	10.03	-	-13.64	-17.06	-27.10	16.62	21.63	-17.35	11.19
		RURAL			11.29	7.25	-	24.00	26.55	-	21.02	12.99	31.48	14.62
		TOTAL			2.24	4.85	-	3.06	8.34	14.23	2.04	- 2.28	- 1.36	22.56
	1964-1975	URBAN			- 8.51	4.41	7.19	-9.45	- 7.20	-8.53	- 8.23	-12.45	-14.04	9.79
		RURAL			6.18	6.11	14.63	4.66	15.21	-	6.21	1.73	12.46	23.62
		TOTAL			1.24	4.45	12.60	- 4.59	5.91	-8.53	- 2.23	- 7.43	- 6.41	16.70
	1970-1975	URBAN			0.03	2.14	-	-4.42	4.61	13.86	1.84	- 1.42	-10.06	8.11
		RURAL			0.06	4.13	-	-19.57	2.71	-	-11.61	-11.71	-10.32	10.43
		TOTAL			0.05	4.96	-	-13.20	3.03	-35.84	- 3.34	- 7.65	10.22	9.66

784

790

URBAN SETTLEMENT: **LUXOR**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Tourism Archaeology.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
35.1	77.6	92.7	6.26/a	118.2

AREA OF SETTLEMENT 7.39 sq km | GROSS DENSITY 12,545 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
207.0	115.0	11.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	18,849	21,178	17,050	19,688

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	41.9 (a)	- 0 - (b)	55.5 (a)
MAX NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	153.0	- 0 -	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	165.1 E 65.1	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	91.3 (1970 L.E.)	456.7 (1970 L.E.)	(1972 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Red Sea	48.0	Safaga	207	199	27.7	1	0-4720
	Alexandria	2,318.7	Alexandria	997	984	12.7		
	Cairo	6,710.8	Cairo	716	792	3.2		
MAJOR MARKETS	Cairo	6,710.8	Cairo	716	792	1.74	< 1	0-5632
	Menoufia	336.7	Shebin El Kom	800	894	1.12		
	Aswan	229.7	Aswan	235	263	1.08		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL					
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH		LOW			
	COMB DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH						
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2									
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW						
	COMB ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5							●	

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing - Intermediate industries of aluminum smelting and cement - Consumer industries of sugar cane.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
14.3	12.6	46.9	7.71/a	63.1

AREA OF SETTLEMENT 3.5 sq km

GROSS DENSITY 56 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 1,340p/hctr
122.0	78.0	29.0	3.0	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In two directions, on East bank of Nile and West in foothills of Western Desert plateau.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	4,036	4,269	2,397	2,873

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	61.1 (a)	- 0 - (b)	82.7 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	88.6	- 0 -	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	447.5 E 347.5	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	20.5 (1979 L.E.)	244.2 (1979 L.E.)	(1979 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Red Sea	48.0	Safaga	201	188	27.7	< 1	0-4720
	Alexandria	2,318.7	Alexandria	811	843	12.7		
	Cairo	6,710.8	Cairo	590	650	3.2		
MAJOR MARKETS	Cairo	6,710.8	Cairo	590	650	1.79	< 1	0-5632
	Menoufia	336.7	Shebin El Kom	679	758	1.12		
	Aswan	229.7	Aswan	362	404	1.08		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL			
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH		LOW	
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH				
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2						●	
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW				
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5						

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Capital of the governorate of Qena - Center for agricultural marketing and servicing - Quarries for building materials - Intermediate and consumer industries of textiles, spinning and weaving - Main access from Upper Nile Valley to the Red Sea Coast.

POPULATION (000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
57.4	68.5	93.8	3.12/a	106.1

AREA OF SETTLEMENT 18.9 sq km | GROSS DENSITY 49.6 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
671.0	434.0	170.0	79.0	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

In one direction: East along the road to Red Sea.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
4.9	18,774	22,696	14,536	17,336

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	50.2 (a)	- 0 - (b)	58.3 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	68.0	- 0 -	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	72.5 D (27.5)	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	264.3 (1976 L.E)	360.0 (1979 L.E)	(1979 L.E)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Red Sea	48.0	Safaga	141	123	27.7	4	0-4720
	Alexandria	2,318.7	Alexandria	871	508	12.7		
	Cairo	6,710.8	Cairo	650	717	3.2		
MAJOR MARKETS	Cairo	6,710.8	Cairo	650	716	1.74	< 1	0-5632
	Menoufia	336.7	Shebin El Kom	732	818	1.12		
	Aswan	229.7	Aswan	309	345	1.08		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

									OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL HIGH		LOW	
ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5							
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW			ABSORPTION CAPACITY POTENTIAL	HIGH				●
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2								
	RATE OF POPULATION GROWTH	0	1	2	3	4				LOW				
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5							

GOVERNORATE: SOHAG

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

SOHAG Governorate is located in south Upper Egypt between Qena and Assiut Governorates. The terrain of the valley slopes from a southern elevation of 65 m to a northern one of 55 m. The valley is bound on both sides by desert plateaus which rise sharply and reach a height of 300 m above sea level. The valley in this Governorate is generally narrower than in other governorates in Upper Egypt; it varies between a minimum of 50 m on the east bank and 3-5 km on the west bank. The Nile runs on the east side of the valley leaving a narrow strip of agricultural land on the east bank, except at Ikhmim, Beliana and Sequlta. In this section of the Nile there is a river island every 4.7 km.

AREA OF GOVERNORATE 1,547.2 Sq.Km
AREA OF URBAN LAND : 94.9 Sq.Km
AREA OF AGRICULTURAL LAND:
Cultivated : 125,715 Ha.
Land Region : 1,869 Ha.
Reclaimed : -- Ha.

ASSESSED % OF RECLAIMABLE LAND : N.A.

ASSESSED % OF BUILT-UP LAND
1972 : 1.8
1978 : 2.8

LOSS OF ARABLE LAND: 40,093 Ha.

POPULATION

CATEGORY	1960		1966		1976		RATES OF CHANGE		
	SIZE	%	SIZE	%	SIZE	%	60-66	66-76	60-76
URBAN	285,743	18.1	336,355	19.9	405,291	21	2.8	1.9	2.2
RURAL	1,293,115	81.9	1,353,042	80.1	1,519,669	79	0.8	1.2	1.0
TOTAL	1,578,858	100	1,689,397	100	1,924,960	100	1.1	1.3	1.2

MIGRATION (Less Than Five Years at Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	11,079	4,957	2,021	7,942	2,366	54,344
RURAL	8,008	2,978	1,972	5,238	1,525	19,721
TOTAL	19,087	7,935	3,993	13,170	3,991	64,065

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO.	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR.DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	3	206,102	237	103	3	-	-
URBAN LESS THAN 50,000	8	199,189			73.1		
VILLAGES	260	1,519,669	(a) 405 p/hctr. - (b) 280 p/hctr. - (c) 140 p/hctr. (d) 92 p/hctr. - (e) 40 p/hctr.				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	22,889	23,073	26,273	28,947	30,597
NO. OF EMPLOYED	34,905	36,666	41,781	49,662	52,047
% CHANGE IN ESTABLISHMENTS	0.80	13.87	10.18	5.7	
% CHANGE IN EMPLOYED	5.05	13.94	18.86	4.80	

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR		PRIVATE SECTOR		TOTAL	
	NO OF Est	NO OF Emp	NO OF Est.	NO OF Emp	NO OF Est	NO.OF Emp.
URBAN	219	6,663	14,273	21,627	14,492	28,290
RURAL	29	1,647	16,075	22,110	16,104	23,757
TOTAL	248	8,310	30,348	43,737	30,596	52,047

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:
Maize, Cotton, Wheat, Onions, Beans, Sugar cane, Barley, Vegetables, Water melon, Citrus

EXTRACTION:

SERVICES :
Sohag as governorate capital and regional center providing business and trade services

OTHER :

INDUSTRY :

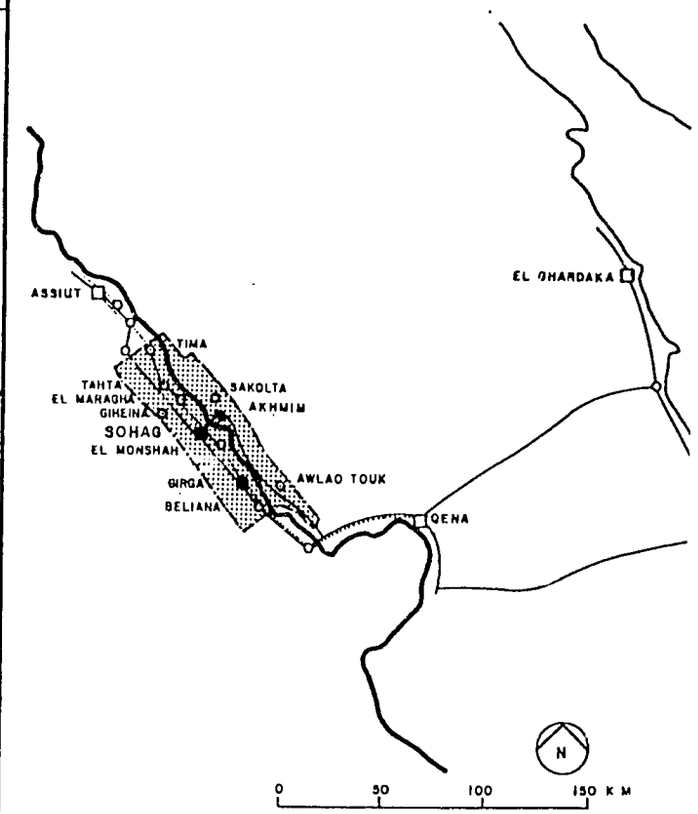
CAPITAL :

INTERMEDIATE :

CONSUMER :
Onion drying - Oil hydrogenation - Shortenings - Hand made weaving

EMPLOYMENT

CATEGORY	YEAR	POPULATION GROUP	EMPLOYMENT AS % OF TOTAL GOVRNRT POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO. OF EMPLOYEES IN ALL SECTORS	SECTORS: AGRICULTURE	MINING	MANUFACTUR. INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION (IN 000S) BY YEAR & SECTOR	1964	URBAN	11.82	48.90	2040.1	5512	-	288.3	72.6	1.7	440.6	550.7	128.5	2.5
		RURAL	12.35	51.10	2131.9	17214	1.2	53.4	30.5	1.2	124.7	173.1	19.3	5.0
		TOTAL	24.17	100	4172.0	22766	1.2	341.7	103.0	5.0	565.3	723.8	147.7	7.5
	1970	URBAN	4.35	18.35	808.0	2640	-	137.0	15.0	2.0	139.0	183.0	98.0	10.0
		RURAL	19.37	81.65	3596.0	3026.0	-	73.0	22.0	-	232.0	209.0	15.0	19.0
		TOTAL	23.72	100	4404.0	3200	-	210.0	37.0	2.0	371.0	392.0	113.0	29.0
	1975	URBAN	3.81	17.73	788.0	1750	-	102.0	29.0	2.0	171.0	216.0	68.0	25.0
		RURAL	17.68	82.27	3657.0	3107.0	-	81.0	34.0	13.0	245.0	131.0	25.0	21.0
		TOTAL	21.49	100	4445.0	3282.0	-	183.0	63.0	15.0	416.0	347.0	93.0	46.0
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	11.82	48.90		13.26	-	6.91	1.74	0.09	10.56	13.20	3.08	0.06
		RURAL	12.35	51.10		41.31	0.03	1.28	0.73	0.03	2.99	4.15	0.46	0.12
		TOTAL	24.17	100		54.57	0.03	8.19	2.47	0.12	13.55	17.35	3.54	0.18
	1970	URBAN	4.35	18.35		6.00	-	3.11	0.34	0.04	3.16	4.15	1.32	0.23
		RURAL	19.37	81.65		68.71	-	1.66	0.50	-	5.26	4.75	0.34	0.43
		TOTAL	23.72	100		74.71	-	4.77	0.84	0.04	8.42	8.90	1.66	0.66
	1975	URBAN	3.81	17.73		3.94	-	2.30	0.65	0.04	3.85	4.86	1.53	0.56
		RURAL	17.68	82.27		69.90	-	1.82	0.77	0.29	5.51	2.95	0.56	0.47
		TOTAL	21.49	100		73.84	-	4.12	1.42	0.33	9.36	7.81	2.09	1.03
RATES OF CHANGE IN EMPLOYMENT	1964-1970	URBAN			-15.43	-12.33	-	-12.40	-26.28	-10.48	13.23	-18.36	-13.26	23.10
		RURAL			8.71	9.38	-	5.21	- 5.42	-	10.34	3.14	-4.10	22.22
		TOTAL			0.90	6.14	-	-8.11	-17.07	-15.27	- 7.02	-10.22	-11.74	22.52
	1964-1975	URBAN			-8.35	-10.46	-	-9.44	- 8.34	- 5.71	- 8.60	-8.50	- 5.78	20.93
		RURAL			4.91	5.36	-	3.79	1.0	21.29	6.14	- 2.53	2.40	13.03
		TOTAL			0.57	3.32	-	-5.63	4.47	9.99	-2.79	- 6.66	4.20	16.46
	1970-1975	URBAN			0.50	-8.22	-	-5.90	13.18	0	4.14	3.32	1.18	18.33
		RURAL			0.14	0.53	-	2.08	8.71	-	1.09	9.34	10.21	2.0
		TOTAL			0.18	-0.05	-	-2.75	10.64	40.30	2.29	-2.44	4.84	9.23



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URBAN SETTLEMENT: **EKHMIM**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing - cottage industries of hand-woven textiles.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
41.6	44.8	53.2	1.55%	56.6

AREA OF SETTLEMENT 3.08 sq km | GROSS DENSITY 172.8 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
71.0	33.0	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

None if taken alone: could become part of an urban corridor with Sohag, on West bank of the Nile.

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.2	10,107	9,150	8,556	9,456

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	20.2 (a)	- 0 - (b)	37.7 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	86.1	- 0 -	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	163.2 E 63.2	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280p/hctr	* (1976 L.E.)	748.2 (1976 L.E.)	(1976 L.E.)

* Excess capacity accommodates net growth.

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Red Sea	48.0	Safaga	301	293	11.4	< 1	0-4720
	Alexandria	2,318.4	Alexandria	721	741	5.1		
	Cairo	6,710.8	Cairo	500	548	2.4		
MAJOR MARKETS	Qena	391.1	Qena	160	170	1.58	< 1	0-5632
	Beni Suef	276.2	Beni Suef	385	430	1.37		
	Minia	430.8	Minia	259	281	1.08		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL							
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH				LOW			
	COMB. DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH								
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2											
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW								
	COMB. ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5										

URBAN SETTLEMENT: **GERGA**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Center for agricultural marketing and servicing.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960-1976	1980 PROJECTION
42.0	44.2	51.1	1.23/a	53.7

AREA OF SETTLEMENT 3.93 sq km | GROSS DENSITY 110.1 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM-HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM-LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
108.0	60.0	3.0	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

NONE

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	10,173	11,070	6,274	7,235

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	80.7 (a)	- 0 - (b)	76.1 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	60.1	- 0 -	
% OF THE 1976 POPULATION E: EXCESS D: DEFICIT	117.6 E 17.6	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	220 (1970 L.E.)	530.4 (1970 L.E.)	(1970 L.E.)

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms	TIME DISTANCE IN Mins	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Red Sea	48.0	Safaga	265	252	11.4	< 1	0-4720
	Alexandria	2,318.7	Alexandria	750	773	5.1		
	Cairo	6,710.8	Cairo	533	585	2.4		
MAJOR MARKETS	Qena	391.1	Qena	124	129	1.58	< 1	0-5632
	Beni Suef	276.2	Beni Suef	417	466	1.37		
	Minia	430.8	Minia	288	313	1.08		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5	OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL		
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5			HIGH	LOW	
	COMB DIFFICULTY & COST/CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW		ABSORPTION CAPACITY POTENTIAL	HIGH			
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2						
	RATE OF POPULATION GROWTH	0	1	2	3	4			LOW			
	COMB ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5					

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URBAN SETTLEMENT: **SOHAG**

PRINCIPAL FUNCTIONS OF THIS SETTLEMENT

Captial of the governorate of Sohag - Center for agricultural marketing and servicing - Consumer industries of food processing, onion drying, oil hydrogenation and shortening.

POPULATION (IN 000's)

1960	1966	1976	RATE OF CHANGE 1960 - 1976	1980 PROJECTION
61.9	74.8	101.8	3.16/a	115.3

AREA OF SETTLEMENT 3.90 sq km | **GROSS DENSITY** 260.9 p/hctr

NET POPULATION ABSORPTION CAPACITY WITHIN PRESENT BOUNDARIES OF SETTLEMENT (IN 000's)

HIGH DENSITY 405 p/hctr	MEDIUM - HIGH DENSITY 280 p/hctr	NATIONAL AVERAGE DENSITY 140 p/hctr	MEDIUM - LOW DENSITY 90 p/hctr	LOW DENSITY 40 p/hctr
56.0	7.4	-	-	-

EASE OF HORIZONTAL EXPANSION WITHOUT ENCROACHING ON ARABLE LAND.

Possibly in one direction, on East bank of the Nile, forming an urban corridor with Akhmim

INFRASTRUCTURE

AVERAGE SIZE OF HOUSEHOLD	TOTAL NO OF HOUSEHOLDS	TOTAL NO OF RESIDENTIAL UNITS	TOTAL NO OF RESIDENTIAL BLDGS	TOTAL NO OF ALL BUILDINGS
5.0	20,225	19,654	9,811	11,216

CATEGORY	WATER	SEWERAGE	POWER
% OF HOUSEHOLDS OR BUILDINGS CONNECTED	75.9 (a)	- 0 - (b)	76.4 (a)
MAX. NO OF POPULATION WHICH COULD BE SERVED AT THE CAPACITY OF THE EXISTING SYSTEM (IN 000's)	136.0	- 0 -	
% OF THE 1976 POPULATION E : EXCESS D : DEFICIT	132.6 E 32.6	D (100)	
PER CAPITA COST FOR EXPANDING SYSTEM TO MEET NEEDS OF NEW POPULATION AT DENSITY OF 280 p/hctr	* (1970 L.E.)	** (1970 L.E.)	(1970 L.E.)

* Excess capacity accomodates net growth.
** Sewerage system currently being built.

(a) HOUSEHOLDS
(b) BUILDINGS

ACCESS TO MAJOR SOURCES OF INPUTS AND TO MAJOR MARKETS

CATEGORY	SOURCE OR MARKET ZONES	ZONE'S URBAN POPULAT'N IN 000's	ZONE'S CENTROID	DISTANCE TO CENTROID IN Kms.	TIME DISTANCE IN Mins.	WEIGHT OF SOURCE OR OF MARKET	ACCESS INDEX	RANGE OF COMPUTED INDEX VALUES
MAJOR SOURCES OF INPUTS	Red Sea	48.0	Safaga	296	207	11.4	1	0-4720
	Alexandria	2,318.7	Alexandria	716	715	5.1		
	Cairo	6,710.8	Cairo	495	543	2.4		
MAJOR MARKETS	Qena	391.1	Qena	155	164	1.58	< 1	0-5632
	Beni Suef	267.2	Beni Suef	379	421	1.37		
	Minia	439.8	Minia	254	275	1.08		

ASSESSMENT OF THIS SETTLEMENT'S POTENTIALS

ABSORPTION CAPACITY	NET POPULATION ABSORPTION CAPACITY	0	1	2	3	4	5							OVERALL ASSESSMENT		ECONOMIC GROWTH POTENTIAL			
	EASE OF HORIZONTAL EXPANSION OUTSIDE ARABLE LAND	0	1	2	3	4	5									HIGH		LOW	
	COMB DIFFICULTY & COST / CAPITA FOR EXPANDING WATER & SEWERAGE	HIGH		MED.		LOW								ABSORPTION CAPACITY POTENTIAL	HIGH				
ECONOMIC GROWTH	SETTLEMENT SIZE	0		1		2													
	RATE OF POPULATION GROWTH	0	1	2	3	4									LOW				
	COMB ACCESS TO MAJOR INPUT SOURCES & MARKETS	0	1	2	3	4	5												●

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GOVERNORATE: MATRUH

MAJOR PHYSICAL CHARACTERISTICS

TOPOGRAPHIC FEATURES:

MATRUH Governorate is located in the north west corner of the country. The terrain is a flat desert plateau at an elevation of 200 m above sea level. The plateau slopes towards the Mediterranean where it reaches 50-60 m above sea level. There are two depressions, the first, Qattara, is the largest, 20000 sq km, with an average depth of 50 m reaching 134 m below sea level at its deepest point. This depression has no potable water and is not inhabited. The second depression, Siwa Oasis, has a total area of 1000 sq km and lies at 17 m below sea level at its deepest point; it has about 250 wells of potable water which irrigate 15000 feddans.

AREA OF GOVERNORATE: 296,207.05 Sq Km

AREA OF URBAN LAND: N.A. Sq Km

AREA OF AGRICULTURAL LAND

Cultivated: — Acres

Land Reform: — Acres

Reclaimed: — Acres

ASSESSED % OF RECLAIMABLE LAND

ASSESSED % OF BUILT-UP LAND

1972:

1978:

LOSS OF ARABLE LAND

CURRENT ECONOMIC ACTIVITIES

AGRICULTURE:

EXTRACTION:

SERVICES:

Matruh as capital of governorate providing related business services to the region as well as public health, education and social welfare.

OTHER:

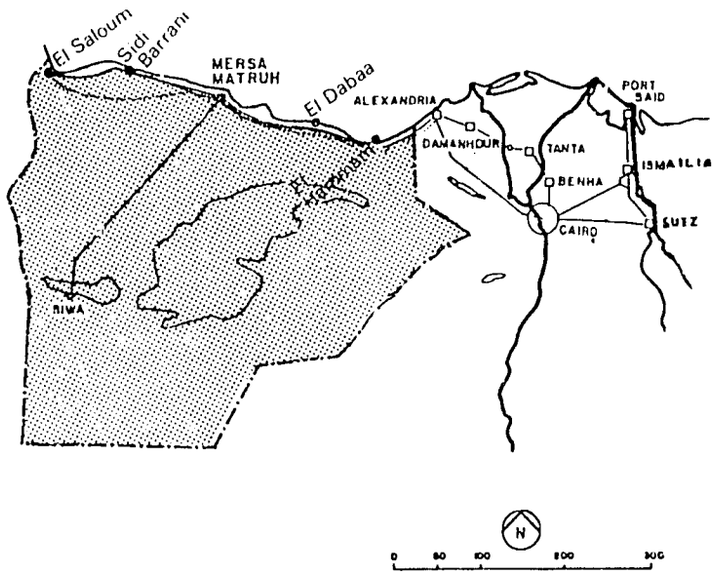
INDUSTRY:

CAPITAL:

INTERMEDIATE:

CONSUMER:

Gypsum based construction materials in Gharbaniate.



POPULATION

CATEGORY	1960 SIZE	1960 %	1966 SIZE	1966 %	1976 SIZE	1976 %	RATES OF CHANGE 60-66	66-76	60-76
URBAN					51,036	45.26			
RURAL					61,736	54.74			
TOTAL					112,772	100			

MIGRATION (Less Than Five Years of Destination)

FROM THIS GOVERNORATE	TO CAIRO	TO ALEX	TO PORT SAID	TO SUEZ	TO ISMAILIA	TOTAL
URBAN	339	489	12	45	142	1,047
RURAL	36	51	-	2	8	97
TOTAL	375	540	11	47	150	1,144

SETTLEMENT DISTRIBUTION AND ABSORPTION CAPACITY

SETTLEMENT DISTRIBUTION			NET URBAN POPULATION ABSORPTION CAPACITY (000'S)				
SETTLEMENT CATEGORY	NO	1976 POPULATION	(a) HIGH DENSITY	(b) MED-HIGH DENSITY	(c) NATIONAL AVR DENSITY	(d) MED-LOW DENSITY	(e) LOW DENSITY
URBAN LARGER THAN 50,000	1	51,036	-	-	-	-	
URBAN LESS THAN 50,000	-		-	-	-	-	
VILLAGES	27	61,736	(c) 405 p/hctr - (b) 280 p/hctr - (c) 140 p/hctr. (d) 92 p/hctr - (e) 40 p/hctr				

ESTABLISHMENTS

DISTRIBUTION OVER TIME AND RATES OF CHANGE

CATEGORY	1960	1964	1967	1972	1976
NO. OF ESTABLISHMENTS	1,746	N.A.	1,213	2,398	3,514
NO. OF EMPLOYED	2,736	N.A.	1,646	4,893	7,543
% CHANGE IN ESTABLISHMENTS		N.A.	N.A.	94.49	46.62
% CHANGE IN EMPLOYED		N.A.	N.A.	60.64	54.16

DISTRIBUTION BY PRIVATE AND PUBLIC SECTORS FOR 1976

CATEGORY	PUBLIC SECTOR NO OF Est.	PUBLIC SECTOR NO OF Emp.	PRIVATE SECTOR NO OF Est	PRIVATE SECTOR NO OF Emp	TOTAL NO OF Est	TOTAL NO OF Emp.
URBAN	34	1,114	2,578	4,194	2,612	5,308
RURAL	19	1,003	885	1,232	904	2,235
TOTAL	53	2,117	3,463	5,426	3,516	7,543

EMPLOYMENT (not available for 1976 - 1975)

CATEGORY	YEAR	POPULATION GROUP	% EMPLOYMENT AS % OF TOTAL POPULATION	% DISTRIBUTION OF TOTAL EMPLOYMENT	TOTAL NO OF EMPLOYEES IN ALL SECTORS	AGRICULTURE	MINING	MANUFACTURING INDUSTRIES	CONSTRUCTION	ELECTRICITY	TRADE	ALL SERVICES	TRANSPORT	ALL ELSE
NO. OF EMPLOYED POPULATION BY YEAR & SECTOR (IN 000'S)	1964	URBAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		17.71	[illegible]	[illegible]	-
		RURAL												
		TOTAL	[illegible]	100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	17.71	[illegible]	[illegible]	-
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
% OF EMPLOYED POPULATION BY YEAR & SECTOR	1964	URBAN	[illegible]	100	-	55.92	0.28	4.41	6.83	-	2.18	25.62	4.96	-
		RURAL												
		TOTAL	[illegible]	100		[illegible]	0.28	1.41	6.83	-	2.18	25.62	4.96	-
	1970	URBAN												
		RURAL												
		TOTAL												
	1975	URBAN												
		RURAL												
		TOTAL												
RATES OF CHANGE IN EMPLOYMENT	1964 - 1970	URBAN												
		RURAL												
		TOTAL												
	1964 - 1975	URBAN												
		RURAL												
		TOTAL												
	1970 - 1975	URBAN												
		RURAL												
		TOTAL												

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VI. SETTLEMENT PROJECT CHARACTERISTICS

A. Introduction

The Government of Egypt has embarked on a series of urban settlement projects demonstrating a wide range of potential models which could be used for future urban development. These range from the development of self-contained new towns built in the desert to the provision of incremental improvement to the physical standards of low income communities within exisiting urban centers.

This Section reviews case studies which exemplify the standards and costs of 14 selected projects and provides a statistical profile of 8 typical projects.

These standards and costs have been gathered from master plans, discussions of development programs and actual tender costs with development agencies responsible for implementing these projects and from discussions with Ministry of Development personnel. The costs in particular should be viewed as indicative costs rather than actual costs since they may change due to changes in development rates or policies.

Comparative assessment of the projects presented several methodological problems in presenting consistent, comparable data. To do so, it is necessary to use some measure of the gross efficiency of investment in different levels of physical standards to evaluate different methods of serving Egypt's future urban population. Therefore, the physical standards and financial costs of building at those standards have been compared on a per capita basis to assess the resource requirements of building at different standards.

The comparative assessment of cost recovery presents similar methodological problems, as these projects were designed at different times with different assumptions about the prevailing financial resources of the government. Furthermore, many of them are being constructed at development rates which are different from original master plan proposals due to financial constraints or policy decisions. To resolve these problems and provide a standard format for evaluating the cases studied, the following assumptions have been made regarding their financing and development:

i) All public finance for long-term financing, except where clear alternatives have been presented such as land sales in 6th of October New Town, is assumed to flow from the Central Bank of Egypt to individual development agencies at October 1980 lending rates of 10 percent annual interest over 30 years.

ii) All development capital costs which are not recovered directly from beneficiaries through sale of residential, commercial or industrial units are treated as subsidies and shown as project losses. It should be noted that some of these development costs may be recovered through user charges or through direct or indirect taxes.

iii) Financial subsidies which occur due to interest rate policies have been measured only against actual loans to beneficiaries, not against entire project costs. It has been assumed that initial capital subsidies will be met through budgetary grants to development authorities and not financed by the development agencies.

iv) All costs have been updated at an annual rate of 15 percent to reflect increased costs in construction.

B. Land Use Standards

Land use efficiency is a major component of providing urban services equitably at acceptable costs to both beneficiaries and government. The two measures of land use efficiency presented here are per capita consumption of land for different urban uses and urban densities. Both directly impact the cost of providing infrastructure for an urban area and the amount of saleable or rentable land which will be available to support financing and operation of urban activities.

1. Land Use Per Capita

The average residential land requirement in the new towns is 28 square meters per capita, while it is 16 square meters in the urban extension projects. However, the variations within these averages are significant. Even though a major portion of the housing within 10th of Ramadan is apartment blocks, its residential land requirement is almost three times that of 15th of May which is also composed mainly of five storey walkups. (Table VI-1)

Both Sadat City and 15th of May budget more land for services and open space than they do for residential purposes. These land requirements for services and open space also exceed standards developed by the General Organization for Physical Planning standards which amount to 10.6 square meters per capita for services in residential areas having populations of 28,000. By way of comparison, sites and services projects and other low income housing projects which aim for at least partial cost recovery of development costs through plot sales devote between 0.5 to 6.8 square meters per capita for services and 0.3 and 6.5 square meters for open space.

Circulation standards vary widely depending on the mode of movement assumed and the rights-of-way widths, particularly in neighborhood areas. The 15th of May, 10th of Ramadan and the Helwan New Community all provide land for tramways in addition to systems for buses, private vehicular traffic and pedestrians. Sadat City, which has the least land budgeted for circulation of any of the new towns, provides an internal bus system and interconnecting pedestrian and vehicular systems. The greater land requirements for circulation in 10th of Ramadan are due to its lower densities which require a longer circulation network.

The 15th of May in its final stage of development will use a total of 37 percent of its land budget for circulation purposes, a non-rentable land use which is greater than its residential component. This greater land use is due in part to the 15th of May master plan

TABLE VI-1
PER CAPITA LAND CONSUMPTION IN RECENT URBAN PROJECTS

	Stage	Population	Residential m^2 per Person	Services[1] m^2 per Person	Open Spaces m^2 per Person	Circulation m^2 per Person	Industry m^2 per Person	Tourism m^2 per Person	Total m^2 per Person[2]
NEW COMMUNITIES:									
10th of Ramadan[3]	I	150,000	46.3	21.8	(In) (Services)	30.5	33.3	--	132.0
Sadat City	5 years	61,000	14.3	35.1	"	12.6	13.0	--	74.9
	10 years	150,000	18.3	36.3	"	12.7	17.8	--	85.1
	2000	500,000	24.3	39.6	"	12.6	20.3	--	96.8
6th of October	5 years	68,000	24.4	7.1	7.3	24.7	48.4	22.0	137.9
	10 years	84,500	25.2	7.3	7.6	21.6	43.9	22.1	128.4
	2000	350,000	25.9	7.7	7.7	21.9	40.4	22.4	126.0
15th of May	5 years	50,000	17.5	8.2	9.0	27.7	--	--	62.4
	10 years	100,000	16.4	9.7	14.0	27.1	--	--	67.3
	2000	150,000	16.3	11.0	15.9	25.7	--	--	68.9
Helwan New Community (USAID)	1985	30,000	17.1	10.2	10.5	5.3	0.7	--	43.7
	2000	110,000	4.8	2.8	3.0	1.5	0.2	--	12.3
PUBLIC HOUSING:									
Deuwaka (East Cairo)	Final	30,000	27.8	1.7	5.3	7.1	--	--	41.7
Berket (East Cairo)	Final	250,000	13.3	1.7	1.7	3.3	--	--	20.0
COOPERATIVE HOUSING:									
(Heliopolis)		6,500	9.4	3.1	(In) (Services)	5.9	--	--	18.5
DEMONSTRATION HOUSING:									
Ismailia (Abu Atwa)	2000	44,000	23.6	2.7	1.5	10.4	--	--	38.3
(El Hekr)	2000	90,000	16.1	2.2	1.7	5.0	--	--	25.1
Suez (Cabanon)	2000	40,600	34.5	6.8	6.5	1.5	--	--	49.3
WORLD BANK LOW INCOME PROJECT:									
Cairo									
Mansheit Nasser	1984	55,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	17.5
Zabbaleen Area	1984	15,000	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	20.0
Alexandria (South Metras)	1984	9,000	10.7	0.9	0.3	4.3	0.6	--	16.8
Assuit (South Gharb El-Bois)	1984	14,000	10.7	0.5	0.3	4.8	1.1	--	17.4

[1] Services are defined as health, education, social services, public safety and administration, cultural activities, religious facilities, and commercial activieies.

[2] Totals may not add due to rounding.

[3] Since detailed land budgets were not provided in the 10th of Ramadan Master Plan or the first stage development plan, residential areas also contained neighborhood service facilities and circulation.

SOURCE: NUPS Analysis from Master Plans.

assumption that 36 percent of all non-pedestrian trips will be made by private vehicles. The master plan for Sadat City which has a much smaller circulation component assumed that only 17 percent of daily trips will be private. The high percent of circulation space is also due to the fact that the bulk of the road network in 15th of May has rights-of-way greater than 18 meters.

2. Densities in New Communities

Table VI-2 shows the planned populations and both gross and net residential densities at various development stages of the case studies. The efficiencies of land utilization are illustrated by the densities of 10th of Ramadan which contributes to significantly higher per capita development costs. The average estimated per capita cost of 10th of Ramadan is L.E. 3,700 in 1980 cost, of which infrastructure costs are about 20 percent. A 20 percent increase in residential densities would result in a reduction of per capita infrastructure costs of roughly 20 percent, a considerable saving.

3. Densities in Low Income Demonstration Projects

The projects aimed at serving low income groups, i.e., the demonstration projects in Suez and Ismailia, the sites and services projects in Alexandria, Assiut and the Helwan New Community, are designed to have much greater densities than the new towns. This is due in part to the lack of significant industrial land uses, but more importantly, to the reduction of services, open space and circulation. The Helwan New Community achieves a gross density of 812 persons per hectare by the year 2000 through private contruction of two additional storeys of rental flats.

These higher densities found in the demonstration projects and the other low income extension projects reflect densities found in Egypt's two largest urban areas. Greater Cairo with a 1976 resident population of 6,710,900, had a density of 236 persons per hectare, while Alexandria with a resident population of 2,318,700 had a density of 120 persons per hectare. However, Heliopolis and Nasr City (still under development), two existing "new towns"

TABLE VI-2

POPULATION AND DENSITIES IN RECENT URBAN PROJECTS

COMMUNITY		POPULATION AT VARIOUS STAGES	TOTAL AREA (Ha)	GROSS DENSITY (PERSONS/HA) 1/	NET RESIDENTIAL DENSITY (PERSONS/Ha) 2/
NEW TOWNS:					
10th of Ramadan	(1985)	150,000	1,980	76	215 3/
Sadat City	(1985)	61,000	457	133	701
	(1990)	150,000	1,277	117	545
	(2000)	500,000	4,841	103	411
6th of October	(1985)	70,000	938	75	409
	(1990)	84,500	1,058	78	395
	(2000)	350,000	4,410	79	386
15th of May	(1985)	50,000	312	160	572
	(1990)	100,000	674	138	644
	(2000)	150,000	1,034	145	613
HELWAN NEW COMMUNITY (USAID DEMONSTRATION PROJECT)					
	(1985)	31,000	135.5	229	585
	(2000)	110,000	135.5	812	2,075
PUBLIC HOUSING (GOVERNORATE OF CAIRO)					
Berket		250,000	500	500	750
Deuwaka		30,000	1,250	240	360
COOPERATING HOUSING					
(Heliopolis)		6,500	12	542	1,060
DEMONSTRATION PROJECTS					
Ismailia	(Abu Atwa)	44,000	169	260	423
	(El Bekr)	90,000	226	398	622
Suez	(Cabanon)	40,600	200	203	240
WORLD BANK LOAN INCOME PROJECTS					
Cairo Upgrading		70,000	126	554	N.A.
Alexandria (South Metras)		9,000	15.1	594	934
Assiut		19,000	24.4	575	938

1/ Density of total development including all land uses.

2/ Density net of all uses but residential land.

3/ Includes some circulation and services.

SOURCE: NUPS Analysis and Master Plans.

within Greater Cairo, had 1976 census densities significantly lower than Greater Cairo, 201 and 83 persons per hectare, respectively. However, these "new towns" only served 3 percent of Cairo's 1976 population.

While no single density may be optimal, this review of densities suggests that more efficient land utilization through greater densities would have the impact of increasing saleable land area through reducing circulation and other non productive land uses and would utilize infrastructure more efficiently.

C. Housing

A variety of housing solutions are presented in the case studies. These range from complete urban communities with a wide range of housing options for different target groups to shelter solutions aimed at only low income groups.

Table VI-3 summarizes these housing solutions and presents an estimate of the groups which would be served under current shelter policies. Housing types are divided into three categories: Low, which have a total selling price of L.E. 4,000 or less, Medium, having a total price ranging from L.E. 4,000 to L.E. 7,000, and High, which have selling prices of L.E. 7,000 or more. These categories include land prices in total prices if the case studies do. These price ranges approximate price ranges of the General Authority for Housing and Building Cooperatives.

The column headed "Minimum Income Required Under Current Policy" in Table VI-3 shows the minimum income which would be required to amortize a housing loan at terms being contemplated by the agencies responsible for developing and financing these projects. However, a household with an income lower than the minimum shown could purchase more expensive housing through making greater down payments.

TABLE VI-3
ASSESSMENT OF HOUSING PROVISIONS

	POPULATION	DWELLING UNIT AREA RANGE (m^2)	SELLING PRICE OF DWELLING UNIT (L.E.)	MINIMUM ANNUAL INCOME REQUIRED UNDER CURRENT POLICIES (L.E.) Per Household	Percentile Income Group %	MINIMUM ANNUAL INCOME REQUIRED FOR FULL COST RECOVERY (L.E.) Per Household	Percentile Income Group %	PERCENT OF TOTAL NUMBER OF UNITS %	REMARKS
10th of Ramadan 1/	150,000								
Low		15-38	2,500	375	5.9	1,798-2,584	32.0-92.5	37	Core Housing.
Middle		90	6,380	1,250-1,500	76.4	4,592	99.9	20	Flats.
High		100-135	7,360-12,232	1,620-2,216	81.9-91.5	4,990-8,005	99.9	43	Flats & Villas.
Average		N.A.	5,880	1,193	64.0	4,118	99.9	100	
SADAT CITY 2/	41,900	(First Stage Program)							
Low		25-44	2,518-3,450	436-934	11.5-49.7	1,111-1,741	63.3-84.0	47	Flats.
Middle		57-100	4,300-6,578	1,210-1,741	49.7-79.3	3,172-3,432	90.3-99.4	48	Core Houses.
High		118-164	8,870-21,366	2,615-5,100	95.5-99.9	5,033-12,428	99.9	5	Flats &Villas.
Average		N.A.	2,426	915	49.7	2,363	92.6	100	
6th of OCTOBER 3/	70,000	(First Stage)							
Average		N.A.	2,408	1,953	87.5	4,130	99.9	100	Self-Financing
15th of MAY 4/	150,000	(Final Development)							
Low		37	3,552	1,080	56.9	2,928	97.6	10	Flats.
Middle		60-70	5,760-7,000	1,320-2,220	73.0-91.5	3,696-4,116	99.9	29	Flats.
High		80-240	7,680-24,480	1,748-13,000	84.0-99.9	4,368-10,304	99.9	61	Flats.
Average			7,772	1,187	90.4	4,374	99.9	100	
HELWAN NEW COMMUNITY 5/	30,000								
Low		--	3,960	1,260	68.7	2,100	89.0	77	Core Housing.
Middle		5-22	5,300-6,796	1,704-2,172	90.3	2,748-3,480	95.4-99.7	15	Core Housing.
High		20-90	7,191-31,882	2,075-9,255	89.0	2,625-5,460	95.5	8	Flats.
PUBLIC HOUSING 6/									
(Deuwaka)	30,000								
(Berket) Planned	250,000								
Low		30-60	2,738-3,935	80-556	0.1-26.3	1,440-2,064	76.4-93.6	100	One & two bedroom flats.
Middle		--	--	--	--	--	--	--	
High		--	--	--	--	--	--	--	
COOPERATIVE HOUSING PROGRAM 7/									
Low		--	4,000	1,012	56.9	2,537	94.6	40	Loans for private organizations.
Middle		--	6,000	1,586	79.3	3,159	99.4	60	
High		--	--	--	--	--	--	--	
ISMAILIA (EL HEKR AND ABU ATWA 8/									
All Stages	134,000								
Low		--	440-1,039	300-708	3.5-36.2	312-720	3.9-37.0	100	Upgrading & sites & services
Middle		--	--	--	--	--	--	--	
High		--	--	--	--	--	--	--	
SUEZ (CABAYON NEW COMMUNITY 9/	40,600								
Low		20-28	549-2,903	192-1,488	0.4-76.4	648-1,524	26.3-79.3	--	Serviced plots & core housing
Middle		--	--	--	--	--	--	--	
High		--	--	--	--	--	--	--	
Average		--	1,335	630	26.3		42.0	--	Serviced land
ASSIUT SITES & SERVICES 10/	14,000								
Low		9	776-2,464	381-1,375	5.9-73.0	509-1,557	18.7-79.3	100	Services plots only.
Middle		--	--	--	--	--	--	--	
High			--	--	--	--	--	--	
Average		9	1,078	501	18.7	627	26.3		
WORLD BANK CAIRO UPGRADING 10/	70,000								
Low		--	263-1,446	60-792	0.1-34.1	120-1,248	0.4-68.7	100	Upgrading & infill plots.
Middle		--	--	--	--	--	--		
High		--	--	--	--	--	--		
Average		--	545	440	11.7	400	11.5		

NOTE: See footnotes at end of Part 3, Section VI.

SOURCE: NUPS Analysis from Master Plans.

These minimum income requirements shown were determined using the following assumptions about household income available for shelter:

i) Limited survey data indicates that most low income households are presently spending between 8 and 11 percent of their incomes for rent. Experience in most countries has shown that low income households are generally willing to spend more of their income on housing which they actually own. Therefore, it was assumed that low income households would be able to spend 15 percent of their income for housing.

ii) It was assumed that middle and upper income households have more flexibility in their expenditures and, thus, would be able to spend 20 percent of their income on shelter.

The "Minimum Income Required for Full Cost Recovery" column of the table shows the income which would be required to afford a housing solution in which all costs, including on-site infrastructure, but excluding off-site infrastructure and community facilities, are amortized at current central bank lending rates.

While it may be unrealistic to expect that all costs of on-site infrastructure can be recovered directly from beneficiaries through housing sales, several of the projects indicate that a large portion of development costs could be recovered while still meeting target group objectives.

At the present standards of the projects studied, most households could not afford the housing being provided to them out of their annual income if all costs of developing and financing the projects were charged to them. At the present standards of most projects, only 0.1 percent of urban households could afford most housing options without paying more than 20 percent of their income if all costs were recovered. This situation could be improved through modified standards and through other methods of cost recovery such as user charges for utilities in which larger consumers of services pay larger unit costs for those services.

D. Utilities

1. Water and Wastewater Standards

Internationally, much attention has been focused on the need to provide lower cost technology options which can serve wider groups than conventional technologies. For example, the Energy, Water and Telecommunications Department of the World Bank has been sponsoring an ongoing study in appropriate technology for water supply and waste disposal in developing countries. The results of its studies of alternative sanitation facilities are presented in Table VI-4. The study concludes that lower cost sanitation solutions, i.e., pit latrines, simple septic tanks systems, etc., at least from a public health point of view, are appropriate for urban areas having gross densities of 250 to 300 persons/hectare.

Appropriate technology solutions are found in the master plan for Sadat City which proposes dividing the city into sewerage zones, each served by separate oxidation ponds. This technology reduces the need for large size trunk sewer mains, pumping stations and mechanical treatment plants. For example, oxidation ponds range L.E. 15.00 per capita while mechanical treatment plants can cost as much as L.E. 60.00 per capita.[1] The 10th of Ramadan Development Authority recognized the opportunity for similar savings in its first stage development of the city. It is serving the city with four oxidation ponds located around the periphery of the city. These oxidation ponds in a desert climate are an ideal solution as they require little maintenance, are inexpensive to construct and function well.

The variations in the wastewater system flows generally follow those of the water systems. It is significant to note however the differences in assumptions about the total wastewater flows as a percentage of total water consumption. These are as follows:

Community	Wastewater Flows as A Proportion of Total Water Consumption
10th of Ramadan	74%
Sadat City	54%
6th of October	66%
15th of May	67%
Helwan New Community	75%
New Ameriya City	55%
Greater Cairo/Helwan	56%
Alexandria	86%
Ismailia	68%
Port Said	71%
Suez	80%

TABLE VI-4
FINANCIAL REQUIREMENTS FOR INVESTMENT AND RECURRENT COST PER HOUSEHOLD
(1978 U.S. $)

	TOTAL INVESTMENT COST	MONTHLY RECURRENT COST	HYPOTHETICAL TOTAL MONTHLY COST	PERCENT OF AVERAGE LOW INCOME HOUSEHOLD
LOW COST				
Pour Flush Toilet	70.7	0.5	2.0	2
Pit Latrine Communal Facility	123.0	--	2.6	3
Vacuum Truck Cartage	107.3	1.6	3.8	4
Low Cost Septic Tanks	204.5	0.9	5.2	6
Composting Latrine	397.7	0.4	8.7	10
Bucket Cartage	192.2	2.3	6.3	7
MEDIUM COST				
Sewered Aqua Privy	570.4	2.9	10.0	11
Aqua Privy	1,100.4	0.5	14.2	16
Japanese Cartage	709.9	5.0	13.8	15
HIGH COST				
Septic Tanks	1,645.0	11.8	25.8	29
Sewerage (Design Population)	1,478.6	10.8	23.4	26

SOURCE: World Bank; Energy, Water and Telecommunications Department.

TABLE VI-5
RATIO OF PEAK FLOW TO AVERAGE DAILY FLOWS IN WATER AND SEWERAGE SYSTEMS

COMMUNITY	RATIO OF PEAK FLOWS TO AVERAGE DAILY FLOWS	
	WATER SYSTEMS	SEWERAGE SYSTEMS
Sadat City	1.26	N.A.
New Ameriya	2.20	1.30
New Helwan Community	1.25	2.00
Ismailia	2.50	2.00
Port Said	N.A.	1.72
Suez	2.00	N.A.

N.A. = Not Available.

SOURCE: Master plans of Sadat City, New Ameriya and New Helwan Community and water and wastewater master plans for Port Said and Suez. Ismailia data were derived from the physical standards quoted in the "Demonstration Projects" reports, Volume III.

Aside from total water and wastewater flows, these assumptions about the proportions of total water supply which will flow through sewerage systems affect the size and capacity of the wastewater system. These variations are due to several factors. For example, the master plan of Sadat City proposes to reduce wastewater flows by using wastewater from kitchens to irrigate private gardens rather than send it through the sewerage system for treatment. Greater flows may be required in the Alexandria system due to storm water problems which do not exist in the other cities. Suez wastewater flows are a greater proportion of water consumption than the others shown above because the system assumes large amounts of industrial and port facility wastes entering the system.

Not all the master plans indicate peak hour design assumption about water and wastewater flow characteristics. However, the range of ratios of peak flows to average daily flows for water supply and sewerage systems are as shown in Table VI-5.

Table VI-6 summarizes physical infrastructure data for the previously discussed urban settlement projects.

2. Proposed Standards for Water and Wastewater in Greater Cairo, Alexandria and the Canal Cities

As the need for improved potable water supply and sewerage in Egypt's five largest urban areas has been generally recognized, master plan studies have been conducted of their system and of their management and tariff structures. Table VI-7 summarizes the present and projected service levels of these utilities while Table VI-8 shows the required investment in plant and operating costs required to reach these service levels. Finally, Table VI-9 compares population growth rates with rates of increase in per capita investment and operating and maintenance expenditure.

3. Projected Revenues of Water and Wastewater Utilities

The management and tariff studies assume that expansion of these systems must be financed

TABLE VI-6
PHYSICAL INFRASTRUCTURE DATA OF SELECTED CASE STUDIES

	POPULATION	WATER CONSUMPTION l/c/d					WASTEWATER FLOW l/c/d				SOLID WASTE		ELECTRICITY					TELECOMMUNICATIONS		
		DOM.	IND.	IRR.	ALLOWANCES OR LOSSES	TOTAL AVER.	DOM.	IND.	TOTAL AVER.	OXIDATION PONDS	QUANTITY kg/c/d	DENSITY kg/m³	RES. (MW)	COMM. SERV. (MW)	IND.	STREET LIGHT	TOTAL	TOTAL NO. OF LINES	NO. OF TLXS	CENT. OFF. FAC.
New Cities																				
10th of Ramadan (year 5)	150,000	260	120	220	333	973	260	473	733	10	4.0 l/c/d	200-400	25	10	91	78 (60)	204	30,000	8,000	
Full Development (year 2000)	500,000	315	165	220	200	900	315	365	680	10	4.0 l/c/d	200-400	N.A.	N.A.	N.A.		N.A.	N.A.	N.A.	
Sadat City (year 5)	61,000	163	23	82	2	312	82	31	128	--	0.90	250	6.7	6.4	6.25	Included in services	19.40	10,000	--	1 cent. eff. fac.
(year 2000)	500,000	210	150	31	62	453	105	113	227	--	0.90	250	62.5	60.2	138.6	"	46	60,000	--	2
6th of October (year 5)	70,000	250	N.A.	N.A.	N.A.	N.A.	224	90	324	10	N.A.	N.A.	6.0	8.0	6.6	--	22.6 1/	7,750	100	1
(year 2000)	300,000	280	60	52	4	400	256	55	304	10	N.A.	N.A.	88.0	20.0	24.0	4.0	105.5 2/	40,000	300	2
15th of May (year 5)	50,000	N.A.	N.A.	N.A.	N.A.	200	N.A.	N.A.	180	-	N.A.	N.A.	8.0	N.A.	N.A.	N.A.	1.6	3,500		
(year 2000)	150,000	N.A.	N.A.	N.A.	N.A.	267			180		N.A.	N.A.	24.0	6.0		4.0	34.0	16,000		
USAID																				
Helwan New Community (final)	110,000	200				200	150		150		0.50	250	22.0	N.A.	N.A.	N.A.	22.0	350		
Suez Cabaret (final)	30,000	120	60	20	80	280	120	60	200		--	--	12	--	--	--	12	1,090		

1/ 9.50 MW added to the total of 20 MW due to the loads outside the city that is serving it.
2/ 19.50 MW added to the total of 86 MW due to the loads outside the city that is serving it.
N.A. Not Available.

SOURCE: MHPU Analysis of Master Plans.

TABLE VI-7
PHYSICAL DATA OF WATER AND SEWERAGE UTILITIES IN GREATER CAIRO/HELWAN, ALEXANDRIA, PORT SAID, SUEZ AND ISMAILIA

Community	Year	Population	WATER UTILITY			SEWERAGE UTILITY			Wastewater Flow as a Proportion of Water Consumption	Sewer Connections as a Percentage of Water Connections
			Average Consumption (l/c/d)	Number Connection (1,000)	Average Number of Persons/ Connection	Average Flow (l/c/d)	Number of Connections (1,000)	Average Number of Persons/ Connection		
Greater Cairo	1980	6,961	338	239	29.1	200	211	33.0	60.0	88.2
	1985	8,020	367	293	27.5	217	260	31.0	59.0	88.7
	1990	9,420	397	361	26.1	232	325	29.0	59.1	90.0
	2000	13,329	286	568	23.9	272	525	25.4	56.0	92.2
Alexandria	1980	2,428	288	238	10.4	221	89	21.5	77.0	37.4
	1985	2,726	307	259	10.8	243	102	26.2	72.0	39.0
	1990	3,090	330	282	10.7	265	130	25.8	80.0	42.0
	2000	4,125	373	388	11.8	329	170	24.3	86.0	43.8
Port Said	1980	306	298	16.7	28.6	137	11.5	26.6	46.0	107.5
	1985	369	316	16.3	22.6	176	14.0	26.4	56.0	86.0
	1990	446	335	22.7	19.6	217	18.0	24.8	65.0	92.0
	2000	650	381	39.4	16.5	272	26.0	25.0	71.0	66.0
Suez	1980	255	219	11.2	22.8	141	11.0	23.2	64.0	98.2
	1985	359	246	13.1	18.8	175	14.0	25.6	71.0	73.0
	1990	505	277	5.4	16.2	208	20.2	25.0	75.0	66.0
	2000	1,000	353	50.2	14.2	282	30.0	25.0	80.0	57.0
Ismailia	1980	220	219	8.6	28.0	113	7.6	31.6	52.0	88.4
	1985	297	222	12.4	22.7	131	9.1	32.6	52.0	73.0
	1990	361	278	19.9	18.1	153	11.3	32.5	55.0	57.0
	2000	500	353	37.9	14.8	232	21.0	26.2	68.0	55.2

SOURCE: Management and Tariff Studies Relative to Water/Sewerage Systems; Water Utility Tariffs, Volume I; Final Report and Sewerage Utility Tariffs, Volume II.

TABLE VI-8

CAPITAL VALUE PER CAPITA IN WATER AND SEWERAGE UTILITIES AND PER CAPITA OPERATION AND MAINTENANCE CHARGES: GREATER CAIRO/HELWAN, ALEXANDRIA, PORT SAID SUEZ AND ISMAILIA

December 31, 1978 Prices

	1980 (L.E.)			1985 (L.E.)			1990 (L.E.)			2000 (L.E.)			ANNUAL RATE OF GROWTH 1980-2000 (%)	
	Water	Sewerage	Combined	Water	Sewerage	Combined	Water	Sewerage	Combined	Water	Sewerage	Combined	Water	Sewerage
Greater Cairo/Helwan:														
Net Capital Value in Plant	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	208.69	88.31	160.03	248.31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operations and Maintenance	[illegible]	[illegible]	[illegible]	6.09	[illegible]	12.57	8.06	8.72	17.30	12.59	13.01	[illegible]	[illegible]	[illegible]
Alexandria:														
Net Capital Value in Plant	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	65.67	289.[illegible]	[illegible]	[illegible]	[illegible]	259.[illegible]	[illegible]	[illegible]
Operations and Maintenance	[illegible]	[illegible]	[illegible]	[illegible]	7.12	12.62	[illegible]	13.27	20.62	12.31	16.30	28.61	6.8	12.0
Port Said:														
Net Capital Value in Plant	[illegible]	22.19	[illegible]	[illegible]	162.43	283.[illegible]	216.33	197.33	412.66	220.31	181.08	401.39	[illegible]	[illegible]
Operations and Maintenance	[illegible]	2.39	[illegible]	7.29	8.[illegible]	16.03	11.93	11.59	23.42	18.92	15.28	34.20	8.7	9.8
Suez:														
Net Capital Value in Plant	[illegible]	89.20	[illegible]	[illegible]	298.33	596.48	862.20	365.20	417.20	314.70	154.02	468.72	4.9	2.8
Operations and Maintenance	[illegible]	2.22	[illegible]	[illegible]	13.26	27.01	17.12	19.60	36.72	26.20	18.00	44.02	8.6	9.9
Ismailia:														
Net Capital Value in Plant	[illegible]	93.7[illegible]	[illegible]	[illegible]	266.33	541.33	267.78	322.50	590.28	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Operations and Maintenance	[illegible]	2.7[illegible]	[illegible]	11.10	11.6[illegible]	22.72	16.64	16.[illegible]	33.21	29.59	26.21	56.00	8.2	9.1

SOURCE: Arab Republic of Egypt, Ministry of Development and New Communities, Management and Tariff Studies Relative to Water Sewerage Systems: Water Utility Tariffs, Volume I, Final Report; and Sewerage Utility Tariffs, Volume 2, Final Report. Prepared by BVI AIK Associates with Cabbet Associates.

TABLE VI-9

SUMMARY OF WATER AND SEWERAGE:

STANDARDS AND PER CAPITA COSTS AND ANNUAL GROWTH RATES

CITY (Ranked According to 1980 Population)	UTILITY	1980 POPULATION 1/ (1,000)	PROJECTED POPULATION GROWTH RATE to 2000	1980 NUMBER OF PERSONS PER CONNECTIONS	PROJECTED RATE OF REDUCTION IN PERSONS PER CONNECTION 2/	1980 CAPITAL INVESTMENT COSTS: Plant 3/ L.E.	Operation 4/ and Maintenance L.E.	Total 5/ L.E.	PROJECTED ANNUAL RATE OF GROWTH PER CAPITA COSTS, 1980-2000: Plant (%)	Operation and Maintenance (%)	Total (%)
Cairo and Helwan	Water	6,961	[illegible]	[illegible]	[illegible]	[illegible]	3.27	50.56	3.0	7.7	2.9
	Sewerage	6,961	[illegible]	33.0	[illegible]	[illegible]	2.28	61.73	7.0	9.3	5.8
Alexandria	Water	2,473	2.44	10.4		52.57	3.29	55.86	1.2	6.8	1.4
	Sewerage	2,473	2.44	22.5	0.99	83.06	1.68	54.74	7.6	12.0	6.5
Port Said	Water	306	3.82	28.6	2.67	47.89	3.64	51.03	8.5	8.7	7.0
	Sewerage	306	3.82	26.6	0.25	44.77	2.41	47.18	7.3	9.8	6.1
Suez	Water	255	2.07	22.8	2.35	117.65	4.91	122.55	4.9	8.6	4.4
	Sewerage	255	2.07	23.2	1.10	87.45	2.67	90.12	2.8	9.9	2.7
Ismailia	Water	250	4.32	27.9	3.16	85.42	4.52	89.94	6.2	8.2	5.3
	Sewerage	250	4.32	31.6	0.28	93.75	2.74	96.50	8.5	9.9	7.1

NOTES:

1/ Population and population projections from "Management and Tariff Studies - Water and Sewerage Utilities and Tariffs."

2/ Represents the rate at which growth in connections exceeds population growth.

3/ 1980 net plant in service or the current replacement cost of the existing plan for December 31, 1978 costs.

4/ Represents total operation and maintenance expense plus depreciation expense in September 31, 1978 costs. Interest expense is excluded.

5/ Total of Nos. 3 and 4, above.

SOURCE: Management and Tariff Study, Water and Sewerage Utility Tariffs and MPS analyses.

through revenues rather than subsidies due to the amount of investment required and the low level of maintenance currently found in this systems. To do so, it proposes a tariff structure on an "ability to pay" basis where larger consumers would be charged more than other consumers. By 1984, the year in which the study indicates that no subsidies would be required by the Greater Cairo/Helwan water utility, this would require the household expenditure as indicated in Table VI-10.

At the lowest income levels expenditure of 9 percent of income for water and sewerage is high. The World Health Organization estimates that no more than 5 percent of a low income household's income should be spent on these services. However, these expenditures become more acceptable as household incomes increase and the proportion of income required decreases.

4. Investment in Provincial Water Systems

The Provinical Water Supplies project studied water supply in all 24 provincial governorates. The study found that between 85 and 90 percent of the people living in provincial Egypt had access to public or industrial water supply systems. However, at least 50 percent of the provincial population relied on potentially polluted surface water sources for at least part

TABLE VI-10

PROJECTED 1984 HOUSEHOLD EXPENDITURES FOR WATER AND SEWERAGE CHARGES IN GREATER CAIRO/HELWAN

	Water Charges L.E.	Sewerage Charges L.E.
Average Expenditure per Capita per year	8.48	6.92
Expenditure per Low Income Household per year 1/	16.20	13.26
Percent of Income		
6th Percentile	9%	4%
20th Percentile	2%	2%
50th Percentile	2%	1%

1/ This assumes that average daily consumption of water of a low income household is 200 l/c/d or 60 cubic meters per 60 day billing period. Sewerage flows are estimated to be 50 percent of water consumption.

919

920

of its water supply. The study found that most of the water supply systems suffered from excessive system losses and inadequate sourceworks and system capacity.

After studying provincial systems, the study recommended priority be placed on several governorates due to present conditions of their water supply. (Table VI-11)

These per capita costs are based on water consumption standards which range from 200 l/c/d/ for the highest class of residential user to 55 l/c/d for standipes. The Provincial Water Supplies Project estimates that 50 percent of 1979 urban provincial populations were served by standpipes and 50 percent had connections. Current consumption from standpipes is estimated at 32 l/c/d, while the average highest domestic class connection uses 150 l/c/d. As shown above, only modest increases in per capita consumption were projected in priority governorates.

5. Total Projected Investment in Water and Wastewater Systems

All of these water and sewerage systems in existing urban settlements are estimated to require the following total capital requirements in 1980 prices. (Table VI-12)

TABLE VI-11
PRIORITY GOVERNORATE WATER SUPPLY SYSTEMS
1979

PRIORITY GOVERNORATES		POPULATION (Millions)	WATER CONSUMPTION (l/c/d)	TOTAL COST OF WATER SYSTEMS (L.E. Millions)	TOTAL COST PER CAPITA (L.E.)
Beheira	(1984)	3.0	94.4	17.1	5.70
	(2000)	4.3	109.1	139.8	32.51
Kafr El Sheikh	(1984)	1.6	101.1	12.2	7.63
	(2000)	2.3	113.1	79.9	34.74
El Fayoum	(1984)	1.3	97.0	10.1	7.77
	(2000)	1.8	106.3	78.4	43.56
Sharkia	(1984)	3.1	87.8	19.0	6.31
	(2000)	4.3	98.9	158.2	36.79

SOURCE: Provincial Water Supplies Project. Volume 1. Binnie and Taylor and Partners, 1979. (All price are 1979 prices.)

E. Comparative Analysis of Community Facilities

1. Education

The physical standards of educational facilities are presented in Table VI-13. These include the number of students per school, area per student, and the impact which these area requirements have on total land use within an urban settlement. Total land requirements for educational facilities, excluding higher level facilities, represent a significant land use within an urban fabric. These requirements range from 3 percent of the land requirements for Sadat City, 4.7 percent of 10th of Ramadan's first stage, and 25.4 percent of the Helwan New Community. However, when the Helwan New Community reaches its year 2000 population of 110,000, per capita land provision will be lower than the other projects since its expansion is vertical rather than horizontal.

TABLE VI-12
TOTAL PROJECTED INVESTMENT IN WATER AND WASTEWATER SYSTEMS

SETTLEMENT	WATER (L.E. Millions)	SEWERAGE (L.E. Millions)	TOTAL (L.E. Millions)	YEAR 2000 PER CAPITA INVESTMENT (L.E.)
Greater Cairo/ Helwan	899.6	1,402.9	2,302.5	172.7
Alexandria	152.2	1,789.7	1,942.0	470.8
Port Said	89.5	110.8	200.4	308.3
Suez	196.1	213.7	409.8	409.8
Ismailia	105.3	172.1	277.3	552.6
Provincial Cities	1,955.8	2,343.2 1/	4,299.5	309.3 2/
TOTAL	3,398.5	6,032.9	9,431.5	143.0

(These total water and wastewater requirements resulted in a total per capita investment requirement of between L.E. 93 to L.E. 555 in 1980 prices.

1/ Households with individual water connections sewered or provided with vaults and sullage water soakaways. Other households provided with vaults requiring periodic emptying.

2/ Based on NUPS projected 2000 urban population of 13.9 million for the Delta, North Upper Egypt, South Upper Egypt and the Remote Areas (Red Sea, New Valley and Sinai).

SOURCE: Management and Tariff Studies Relative to Water Sewerage Systems, "Water Utility Tariffs," Volume I, Final Report; and "Sewerage Utility Tariffs," Volume II, Final Report and "Provincial Water Supplies Project," Volume 1. Binnie & Taylor & Partners, 1979.

The total school requirements shown in the tables have been based on total Egyptian student population standards from the Ministry of Education which are presented in Table VI-14.

Generally, the master plans have used these standards with some modifications based on individual assumptions about population growth and composition to estimate individual school requirements.

2. Standards of Health Delivery Systems

A sample of the current physical planning standards for health delivery systems is shown in Table VI-15. These standards range from a provision of hospital beds at a standard of 9 beds per 1,000 population proposed for the 15th of May, to a provision of 3.0 beds per 1,000 population in Sadat City. Land use requirements for these facilities range from 0.38 square meters at Sadat City, to 1.57 square meters in 15th of May. The per capita costs of these health delivery sytems follow a similar pattern, with that of 15th of May having the highest per capita cost of L.E. 508, to Sadat City and the Helwan New Community having per capita costs of L.E. 255 and L.E. 193, respectively. The urban extension projects are not shown in the table since they have much smaller health components and generally provide either health centers or clinics which are intended to function within the general health delivery system of the urban area. They also are generally planned to bring these extension areas up to the general standard of the urban area.

These standards should be compared with existing national average urban standards to compare service levels. Egypt's urban population presently is served by a health delivery system which has a standard provision of 4.1 beds per 1,000 population, while rural areas have a provision of 0.4 beds per 1,000 (most rural areas have good access to urban facilities so the lower provision of health care in rural areas is

TABLE VI-13

ASSESSMENT OF EDUCATIONAL FACILITIES BY TYPE OF SCHOOL, PHYSICAL STANDARDS AND UNIT COSTS

(1980 Cost Estimates)

COMMUNITY	TYPE OF SCHOOL: Primary	Preparatory	GENERAL SECONDARY: Boys	Girls	SECONDARY TRADE and COMMERCE	INDUSTRIAL SECONDARY: Boys	Girls	SPECIAL SECONDARY: Agric.	Tech.	OTHER	TOTAL	UNIVERSITY and HIGH LEVEL	GRAND TOTAL
15th of Ramadan (150,000 Population)													
Number of Schools	34	9	2	2	4	4	--	--	--	3	58	1	59
Number of Student/School	700	750	750	400	700	400	--	--	--	450		500	
Building Area/Student (m^2)	6.0	8.0	10.0	10.0	15.0	20	--	--	--	15.0		50	
Plot Area/Student (m^2)	14.9	17.33	21.33	35.0	25.71	40.0	--	--	--	34.07		100	
Total Land Requirement per Capita	2.27	0.78	0.21	0.19	0.48	0.43	--	--	--	0.31	4.67	0.33	5.00
Percent of Total Land Budget	2.7	0.8	0.2	0.2	0.5	0.4	--	--	--	0.3	4.7	0.3	5.1
Cost of School/Capita (L.E.)	72.53	142.83	39.68	21.16	111.09	112.85	--	--	--	76.73	576.80	66.13	642.93
Sadat City (500,000 Population)													
Number of Schools	100	32	5	5	6	2	2	1	1	--	154	1	155
Number of Students/School	832	913	906	906	795	1,125	825	680	906	--	N.A.		
Building Area/Students (m^2)	2.52	4.38	6.07	6.07	6.62	6.67	6.67	13.97	2.32	--	N.A.		
Plot Area/Student (m^2)	5.62	8.32	13.13	13.13	15.76	14.79	19.66	84.71	35.32	--	N.A.		
Total Land Requirement per Capita	0.94	0.49	0.12	0.12	0.14	0.05	0.04	0.12	0.06	--	2.08		
Percent of Total Land Budget	1.2	0.6	0.2	0.2	0.2	0.1	0.1	0.2	0.1	--	3		
Cost of School/Capita (L.E.) 1/	62.89	38.94	10.87	10.87	13.69	6.84	5.02	12.78	12.78	--	175.66		
15th of May (150,000 Population)													
Number of Schools	36	12	6	6	--	--	--	--	1	--	61		
Number of Students/School	700	750	750	400	--	--	--	--	1,000	--			
Building area/Student (m^2)	6.0	8.0	10.0	10.0	--	--	--	--	30.0	--			
Plot Area/Student (m^2)	N.A.	N.A.	N.A.	N.A.	--	--	--	--	N.A.	--			
Total Land Requirement per Capita	N.A.	N.A.	N.A.	N.A.	--	--	--	--	N.A.	--	3.97		
Percent of Total Land Budget	N.A.	N.A.	N.A.	N.A.	--	--	--	--	N.A.	--	5.8		
Cost of School/Capita (L.E.)	101.39	190.44	119.03	119.03	--	--	--	--	79.35	--	609.23		
Helwan New Community (110,000 Population) 2/													
Number of Schools		20	1	1	--	--	--	--	--	--	22		
Number of Students/School		571	912	912	--	--	--	--	--	--	--		
Building Area/Student (m^2)		N.A.	N.A.	N.A.	--	--	--	--	--	--	--		
Plot Area/Student (m^2)		13.1	21.93	21.93	--	--	--	--	--	--	--		
Total Land Requirements/Capita (m^2)		1.36	0.18	0.18	--	--	--	--	--	--	0.20		
Percent of Total Land Budget		11.1	1.5	1.5	--	--	--	--	--	--	14.0		
Cost of Schools/Capita (L.E.)		145.17	19.8		--	--	--	--	--	--	157.9		
Suez Cabanon Community (41,900 Population)													
Number of Schools	8	4	2		1								
Number of Students/School	640	850	800 (Combined)		600								
Building Area/Student (m^2)	N.A.	N.A.	N.A.		N.A.								
Plot Area/Student (m^2)	12.50	18.80	30.00		33.33								
Total Land Requirements per Capita	1.53	1.53	1.15		0.57						4.93		
Percent of Total Land Budget	3.2	3.2	2.4		1.2						10.00		
Cost of Schools/Capita (L.E.)	23.81	23.95	10.02		7.70						65.48		

1/ Excludes industrial land provisions.

2/ Primary and preparatory schools are combined.

N.A. = Not Available.

SOURCE: Ministry of Education.

somewhat misleading). However, in spite of the capacity of Egypt's health delivery system as reflected in the provision of beds per 1,000 population, infant mortality remains high at 89.2 deaths per 1,000 live births.

F. Physical Standards and Costs of Industrial Areas

The land, water, wastewater and electrical standards and the costs of supplying infrastructure to these industrial areas of five of the case study projects are shown in Table VI-16.

The basis of the physical standards in the master plans for these industrial areas generally came from European or American standards for industrial areas and were modified to meet local requirements. In the new towns, these physical standards are fairly consistent.

The sources of cost data shown in Table VI-16 come from master plans of the new towns and the Suez Light Industrial Area. Additional information is also available from the tenders of construction of infrastructure of the first phases of 10th of Ramadan and Sadat City. The latter two range from L.E. 1,063 to L.E. 1,590 per

TABLE VI-14

STANDARDS FOR SCHOOL AGE POPULATIONS

Schools	Number of Pupils as Percentage of Total Population
Kindergarten/Nursery Schools	4.7
Primary Schools	14.0
Preparatory Schools	5.5
General Secondary Schools for Boys	0.9
General Secondary Schools for Girls	0.5
Commercial Secondary Schools for Boys and Girls	1.7
Industrial Secondary Schools for Boys	0.9
Total Secondary Schools	4.0

SOURCE: Ministry of Education.

TABLE VI-15
COMPARISON OF HEALTH CARE FACILITIES
(1980 Cost Estimates)

COMMUNITY	HOSPITALS General	HOSPITALS Special	HOSPITALS Total	POLYCLINICS	HEALTH CENTERS Primary	HEALTH CENTERS Emergency	SPECIAL CLINICS	OTHERS	TOTAL
10th of Ramadan (Population 150,000)									
Number of Facilities			3.00	--	4.00	1.00	1.00	3.00	12.00
1,000 Population Served/Facility			50.00	--	37.50	150.00	150.00	7.50	N.A.
Number of Beds/1,000 Population			4.00	--	--	0.07	0.50	1.70	6.30
Number of Health Workers			N.A.	--	N.A.	N.A.	N.A.	N.A.	N.A.
Total Building Area/Capita (m^2)			.09	--	0.19	0.01	0.01	0.05	N.A.
Percent of Total Land Area									
Cost Per Capita			185.15	--	123.43	3.09	6.17	33.94	351.78
Sadat City (Population 500,000)									
Number of Facilities	1.00	3.00	4.00	2.00	16.00	6.00	--	3.00	31.00
1,000 Population Served/Facility	500.00	500.00	500.00	250.00	31.30	83.30	--	500.00	N.A.
Number of Beds/1,000 Population	0.80	2.20	3.00	--	--	-	-	--	3.00
Number of Health Workers	175.00	460.00	635.00	64.00	210.00	35.00	--	340.00	1,284.00
Total Land Area/Capita (m^2)	0.08	0.22	1.02	0.03	0.10	0.01		0.12	N.A.
Percent of Total Land Area									
Cost Per Capita	48.67	133.84	182.51	11.41	7.30	4.38	--	49.43	255.03
15th of May (150,000 Population) 1/									
Number of Facilities			6.00		6.00				12.00
1,000 Population Served/Facility			2.50		74.00				N.A.
Number of Beds/1,000 Population			9.00		--				9.00
Number of Health Workers			N.A.		N.A.				N.A.
Total Building Area/Capita (m^2)			N.A.		N.A.				N.A.
Total Land Area/Capita (m^2)			1.45		0.12				1.57
Cost Per Capita 2/			502.55		6.00				508.55
Helwan New Community (110,00) 3/									
Number of Facilities			1.00		2.00			2.00	5.00
1,000 Population/Facilities			110.00		55.00			55.00	N.A.
Number of Beds/1,000 Population			3.20		--			--	3.20
Number of Health Workers			N.A.		N.A.			37.00	N.A.
Total Building Area/Capita (m^2)			N.A.		N.A.				N.A.
Total Plot Area/Capita			0.14		0.09			0.09	0.32
Cost Per Capita			144.27		45.08			3.61	192.96

N.A. = Not Available.

1/ General hospital design is based on 15th of May projected populations. General hospitals are planned for each district. A district comprises six neighborhoods or approximately 25,000 population. Health facilities may serve groups living outside the planned community.

2/ Hospital prices based on 10th of Ramadan prices.

3/ The first phase plan does not include the costs of a hospital, but land provisions were made for one. Therefore, since a community of 110,000 will require hospital facilities when developed, these costs have been added to Helwan New Community project estimates.

SOURCE: Ministry of Health.

worker, respectively. The difference between the two, which is not great, is due to the heavy industry planned for Sadat City.

The industrial areas within New Ameriya City, 6th October and the Suez Ataka Light Industrial Area are all aimed at medium to small industries. Their per worker investment in infrastructure is roughly in the same range as the medium to small-scale crafts industries of Sadat City, i.e. L.E. 423 to L.E. 502 per worker. (The Suez and New Ameriya estimates are based on updated cost estimates of 1977 master plans and may be low.)

G. Per Capita Costs of Urban Development

Estimates of the per capita development costs of the projects studied are presented in Tables VI-17 and 18. They have been ranked according to program type and total per capita costs; the highest per capita cost being 10th of Ramadan at L.E. 3,842, while the lowest is the Cairo upgrading project at Mansheit Nasser which is L.E. 42 per capita. Due to the methodological problems mentioned in the Introduction, these costs should be treated as indicative of per capita costs rather than actual costs. They represent a picture of the case study projects based on estimates of current developments costs.

The reasons for these cost differences are partly self-evident; one case study represents the construction of a completely new town in which a full level of urban services must be provided, while the other provides improved infrastructure, community facilities and some housing to an existing population presently without these services.

More importantly, however, these differences are due to the standards representing different levels of service to which these projects are being developed and particularly in the case of new towns, the need to make initial investments in facilities which will serve future populations, but which at the time of construction are under utilized. To the extent possible, this section will identify these various

TABLE VI-16

PHYSICAL STANDARDS AND COSTS OF SELECTED INDUSTRIES (1980 COST ESTIMATES)

SETTLEMENT AND POPULATION	TYPE OF INDUSTRY	DESCRIPTION	NUMBER OF ESTABLISHMENT	NUMBER OF EMPLOYEES	DENSITY (WORKERS PER HECTARE)	TOTAL AREA PER WORKER (m^2/worker)	WATER CONSUMPTION (l/w/d) 2/	WASTEWATER FLOWS (l/w/d)	ELECTRICITY PER CAPITA W	ELECTRICITY PER CAPITA MW	INFRASTRUCTURE PER ESTABLISHMENT	COSTS PER WORKER (Master Plan)	COSTS PER WORKER (1980 Tender Estimates)
10th OF RAMADAN (150,000)	Heavy		26	3,500	32 1/	317			8,571	30	516,162	3,829	2,189
	Medium		140	8,000	47 1/	213			4,750	38	147,335	2,575	1,969
	Light		340	8,500	315 1/	32			470	4	9,618	388	219
	Totals		506	20,000	65 1/	154	3,550	3,550	3,600	72	73,715	1,855	1,063
SADAT CITY (500,000)	Heavy I	Metal (Iron-Steel)	1	4,000	22	460	11,700	2,972	2,000	29.2	N.A.	N.A.	3,802
		Non-Metals, Chemicals, Paint	17	10,600			1,050				2,258,823	3,623	
	Heavy II	Assembly Plants, Glass, Sand-Lime Brick, Reinforced Concrete Products Textiles, Printing, Large Bakeries	127	10,530	30	360	770		2,374	25.0	403,016	1,046	2,478
	Medium	Tobacco, Needle Trades, Furniture	44	11,400	100	100	590	284	1,500	17.1	167,416	645	827
	Medium-Small	Hardware	268	11,510	330	30	180		591	6.8	10,363	241	248
	Small-Scale, Craft	Small Bakeries, Tailors, Leather Goods, etc.	1,500	12,000	670	15	50		608	7.3	1,117	140	129
	Totals (excluding Type I Heavy Industries)		1,839	45,440	94	106	384	284			12,417	502	877
	TOTAL ALL INDUSTRIES			60,000	52	196	1,257	938	1,432	85.4	N.A.	N.A.	1,590
NEW AMERIYA CITY (500,000)	A. Heavy	Cement, Chemicals		8,000	3	3,750	3,750			61			--
	B. Medium-Small	(Basic)		29,025	85	120	1,749			26		517	--
	C. Small-Scale	Basic & Non-Basic		24,575	116	86							--
	D. Small-Scale Craft			10,400	400	25	50			3			--
	Totals			72,000	22	498	1,718	1,086	1,250	90		494 3/	
6th OF OCTOBER (350,000)	Light			16,000	5	2,106	60	43		27		2,600	
SUEZ LIGHT INDUSTRIES (40,000)	Light			5,600	112	89	1,735	1,428		3		1,418	

1/ Net Densities 2/ Items per worker per day 3/ Excludes Macro Infrastructure

SOURCE: NUPS Analysis of Master Plans

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cost components and discuss four general groups of development projects: new towns, low income housing projects, cooperative housing projects and upgrading or improvement of the level of urban services supplied to existing population groups.

1. Per Capita Costs of New Towns

The range of per capita investment costs for the new towns is L.E. 848 for the final 110,000 population of the Helwan New Community to L.E. 3,842 projected to be invested in constructing the first phase of 10th of Ramadan serving a population of 150,000. Intermediate per capita cost estimates are found at Sadat City to have an ultimate per capita cost of L.E. 2,461 and the 6th of October, which will have an ultimate cost of L.E. 2,803 when it reaches a design population of 350,000.

10th of Ramadan, which was the first of the new towns to be developed, has higher development costs largely due to the standards to which it was developed. As pointed out, its gross density and net residential density are lower than the other new towns. The design standards of its water and sewerage systems are also higher than the other new towns. As its ground water resources are not adequate to support the entire city, 10th of Ramadan also requires the construction of a water pipeline from the Ismailia Canal and pumping stations to lift the water from the canal's elevation to that of the city. 6th of October water supply costs are

TABLE VI-17
PER CAPITA COSTS OF INFRASTRUCTURE IN SELECTED CASE STUDIES
(All Costs 1980 L.E./Capita)

COMMUNITY	STAGE	POPULATION	WATER SUPPLY			WASTEWATER			TOTAL WATER & WASTE-WATER	SOLID WASTE	ROADS	ELECTRICITY			TELECOM-MUNICA-TIONS	SITE GRADING & LAND SCAPING	TOTAL INFRA-STRUC-TURE
			NET-WORK	TREAT-MENT	TOTAL	NET WORK	TREAT MENT	TOTAL				NET-WORK	SUB-STATIONS	TOTAL			
New Towns																	
10th of Ramadan	5 years	150,000	--	--	81.1 1/	--	-	187.5	263.6	--	202.7	--	--	172.3	193.2	N.A.	831.8
	2000	500,000	--	--	85.2 1/	-	-	191.6	276.8	-	425.8	--	--	179.5	200.8	N.A.	1,082.9
First Phase Contractor Prices		150,00	73.3	93.5	166.8 2/	118.3	15.0	133.3	300.1	-	133.3	266.7	233.3	500.0	N.A.	N.A.	933.4
Sadat City	5 years	61,000	163.3	71.7	234.0	28.0	43.0	121.0	355.0	2.9	415.7	52.8	71.9	124.7	54.6 2/	--	952.9
	2000	500,000	120.2	88.5	208.7	54.2	39.2	93.4	302.1	17.2	243.6	42.0	27.1	69.1	54.5 2/	--	686.8
Initial Construction	(1980)	16,780	54.4	83.4	137.8	110.8		110.8	248.6	11.5	147.7	N.A.	369.5	369.5	54.5 2/	--	831.8
6th of October	Year 5	70,000	111.5	96.7	208.2	170.9	34.4	205.3	413.5	-	243.9	56.7	189.0	245.7	56.9	--	1,016.7
	2000	350,000	111.5	153.0	264.5	147.9	33.4	180.3	444.8	-	169.3	28.9	66.1	94.4	144.2	--	852.7
15th of May	2000	150,000	71.0	-	71.0	58.7		58.7	129.7	-	116.7	N.A.	N.A.	268.1	-	--	563.2
Updated Contractor Prices		24,070	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	209.4		73.1	N.A.	N.A.	111.4	82.7	--	676.6
Helwan New Community	First Stage	30,000	61.1	-	61.1	66.4	N.A.	66.4	127.5	4.6	86.3	179.8	40.6	220.4	10.1	173.9	778.6 5/
	2000	110,000	16.7	--	16.7	18.1	N.A.	18.1	34.8	1.3	23.5	49.0	11.1	60.1	2.8	47.4	212.3 4/
Public Housing																	
Deiwaka	First Stage	17,500	37.8	--	37.8	151.2	--	151.2	189.0	--	44.0	37.8	--	37.8	--	--	270.8
Full Development		30,000 4/	37.8	--	37.8	151.2	--	151.2	189.0	--	44.0	37.8	--	37.8	--	--	270.8
Demonstration Projects																	
Ismailia (El Hekr)	2000	90,000	31.2	--	31.2	41.2	--	41.2	72.3	--	16.0	15.0	--	15.0	--	1.3	104.6
(Abu Atwa)	2000	44,000															
Suez (Cabanon)	2000	40,900	71.5	38.6	110.1	50.4	16.1	66.5	176.6	--	20.4	20.1	3.6	23.7	4.1	2.6	227.5
Lowest Income Projects																	
Cairo (Mansheit Nasser)		55,000	2.9	--	2.9	3.2	--	3.2	6.1	0.1	6.2	6.5	--	6.5	--	0.5	19.5
(Zabbaleens)		15,000	3.6	--	3.6	--	--	--	3.6	--	2.6	0.5	--	0.5	--	--	6.7
Alexandria		9,000	3.8	--	3.8	22.5	--	22.5	26.3	0.8	14.6	25.8	--	25.8	--	--	67.2
Assiut		14,000	6.0	--	6.0	18.2	--	18.2	24.2	0.7	23.1	17.0	--	17.0	--	--	65.2

N.A. - Not Available.

1/ Masterplan Estimates.
2/ Estimated from First Stage.
3/ Based on First Stage Development.
4/ Includes Off-Site Infrastructure.
5/ Twenty-five percent overheads have been added to subtotals.

SOURCE: MUPS Analysis of Master Plans.

TABLE VI-18

COMPARATIVE ANALYSIS OF AVERAGE PER CAPITA INVESTMENT COSTS

SETTLEMENT	POPULATION	LAND	INFRASTRUCTURE							COMMUNITY FACILITIES				TOTAL PER CAPITA INVESTMENT
			HOUSING	WATER	SANITATION	ELECTRICITY	ROADS	OTHER	TOTAL	EDUCATION	HEALTH	OTHER	TOTAL	
NEW TOWNS														
10th of Ramadan[1] (Contractor Prices)	150,000	--	1,072	167	133	500	133	--	933	643	352	842	1,837	3,842
Sadat City[2] (Initial Construction)	16,780	--	952	138	111	370	148	66	833	242	20	213	475	2,260
	500,000	--	349	209	94	69	244	72	688	610	321	493	1,424	2,461
6th of October[3]	70,000	--	1,725	208	205	245	244	57	959	N.A.	N.A.	N.A.	342	3,026
	350,000	--	1,333	264	180	94	169	144	851	N.A.	N.A.	N.A.	619	2,803
15th of May[4] (Updated Contractor prices)	24,070	--	1,229	[409]		111	73	83	676	609	509	314	1,432	3,337
NEW HELWAN COMMUNITY (USAID)[5]														
(Demonstration Project)	30,000	432	133	61	66	220	86	189	779*	N.A.	N.A.	N.A.	1,373	2,717
	110,000	122	133	17	18	60	24	52	212	157	193	31	381	848
PUBLIC HOUSING (CAIRO GOVERNORATE)[6]														
Berket	250,000		660	38	152	38	44	--	272	N.A.	N.A.	N.A.	209	1,141
Deuwaka	30,000		239	38	152	38	44	--	272	N.A.	N.A.	N.A.	67	578
COOPERATIVE HOUSING[7]														
Total Program	385,000	--	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1,746
Heliopolis	6,500	646	1,816	N.A.	N.A.	N.A.	N.A.	N.A.	225	N.A.	N.A.	N.A.	N.A.	2,687
DEMONSTRATION PROJECTS[8]														
Ismailia (El Hekr & Abu Atwa)	134,000	12	--	31	41	15	16	1	104	43	11	15	69	185
Suez (Cabanon)	40,600	--	217	110	66	23	20	7	226	67	9	74	150	593
WORLD BANK LOW INCOME PROJECTS[9]														
Cairo Upgrading (Mansheit Nasser)	55,000	--	12	3	3	7	6	1	20	5	4	1	10	42
Alexandria Sites & Services	9,000	--	206	4	22	26	14	1	67	5	10	2	17	290
Assiut Sites & Services	14,000	44	124	6	18	17	23	1	65	5	10	3	18	251

* Includes provisions for 25% overheads.

NOTE: See footnotes at end of Part 3, Section VI.

SOURCE: NUPS Analysis of Master Plans.

831

832

estimated to be higher than other new towns because it requires a pipeline and pumping stations to convey water 30 kilometers to the city from the Nile.

Per capita electrical system costs are higher at 10th of Ramadan due to the distance over which transmission lines must be constructed to reach the city and the need for substations. Sadat City, 6th of October, the 15th of May and the Helwan New Community are all fairly close to the national transmission grid which lessens their requirement for major off-site electrical expenditures to bring power to them.

Investment in road systems tends to loosely follow land budgets for circulation. The Helwan New Community, having the lowest per capita circulation land budget, also projects to spend the least amount on road systems -- L.E. 86 per capita in its initial development stage of 30,000 population. However, a notable exception is the 6th of October which budgets 12.6 square meters of circulation per capita but projects large per capita expenditure on roads. This is largely due to the standards of its roads whose rights-of-way range from 72 meters to 12 meters, but has only 28 percent of its roads having rights-of-way less than 24 meters.

Infrastructure costs at 15th of May and Helwan New Community represent special cases as both are basically urban extension projects being designed to provide housing for workers of Helwan. They rely on urban trunk infrastructure, both have similar design flows in their water and wastewater systems, and they are built on rocky sites which increase excavation costs, particularly of infrastrucutre. Nevertheless, when they reach their ultimate populations, they will have per capita costs of infrastructure which differ greatly. These variations are due to the densities of the two communities. The first has a gross density of 145 persons per hectare, while the other has a density of 803. The 15th of May develops only 24 percent of its 1,033 hectares in multi-storey walkups while the Helwan New Community uses 37 percent of its net area of 136 hectares for three storey rental housing.[2] However, the primary difference between the two is the development process which in the Helwan Community emphasizes vertical expansion of privately owned land. This expansion over time utilizes the excess capacity built into the infrastructure system at the time of installation.

TABLE VI-19

ASSESSMENT OF CONSTRUCTION INVESTMENT AT 6TH OCTOBER, SADAT CITY, AND NEW HELWAN COMMUNITY IN FROZEN INFRASTRUCTURE ASSETS

	6th October 2/ Frozen Assets			Sadat City 3/ Frozen Assets			New Helwan Community 4/ Frozen Assets		
PERIOD	TOTAL FROZEN ASSETS (LE 1,000)	PERCENT OF TOTAL CUMULATIVE INVESTMENT 1/ (%)	PER CAPITA (LE)	TOTAL FROZEN ASSETS (LE 1,000)	PERCENT OF TOTAL CUMULATIVE INVESTMENT 1/ (%)	PER CAPITA (LE)	TOTAL FROZEN ASSETS (LE 1,000)	PERCENT OF TOTAL CUMULATIVE INVESTMENT 1/ (%)	PER CAPITA (LE)
1980-1985	1,919	12	5.48	3,419	11	56.05	2,398	9	79.94
1985-1990	6,518	10	94.54	5,687	9	38.69	1,649	6	29.98
1990-1995	6,632	6	30.01	6,275	6	25.00	824	3	9.99
1995-2000	5,548	2	19.54	4,956	3	13.73	--	-	--
TOTAL	20,717	8	59.19	20,337	10	40.67	4,871	18	44.28
UPDATED 1980 COSTS	20,717	8	59.19	30,930	10	61.86	4,871	18	44.28

1/Cumulative infrastructure investment was discounted at 12%. No allowances were made for inflation in these estimates.

SOURCES: 6th of October Master Plan,[2] Vol. III, 1980.

Sadat City Master Plan,[3] Vol. III, 1977.

Helwan New Community. Infrastructure Cost Estimates,[4] Vol. III, August 1980.

2. Frozen Assets in Investment in Infrastructure

Determining those investments which must be made during initial phase but which will not be fully utilized until a later development stage is fairly difficult in the absence of detailed physical and investment phasing plans. However as a partial solution, the Department of Economic and Social Affairs of the United Nations suggests a very simplified method to identify at least the significance of those costs which it calls "frozen assets" according to the following formula:[3]

$$F = Tr\,z$$

Where:

F = Frozen assets
T - Total or cumulated costs
r = The rate of interest or discount rate, and
z = The average period over which the asset is frozen

Table VI-19 shows an approximation of the "frozen assets" which may result from the construction of infrastructure at 6th of October, Sadat City and the Helwan New Community. As the table suggests, fairly sizeable amounts of initial investment in infrastructure will be underutilized during early developmpent periods. As the cities develop, these "frozen assets" will lessen as a percentage of total investment. Overall, these "frozen assets" equal between 8 and 18 percent of total infrastructure investment.

Data for the table were derived from master plan population projections and infrastructure construction programs of 6th of October and Sadat City. Since time phasing of the Helwan New Community project population growth was not available when the assessment was made, it was assumed that it would be fully occupied by 1995-2000 period. The frozen assets resulting are estimates of the rate at which infrastructure investment made during the 1980-1985 period would be utilized during the remaining periods.

Although it is inevitable that a portion of the investment in infrastructure for a new town must be "frozen" during initial stages of construction, these absolute amounts, though a small percentage of total infrastructure costs, still represent sizeable amounts of investment which could be utilized for other development. For example, the total "frozen assets" of the infrastructure of Sadat City is estimated to be in the range of L.E. 62 per capita in 1980 prices. This amount is almost equal to the total estimated costs of infrastructure in the Alexandria and Assiut sites and services projects, L.E. 67 and L.E. 65 per capita, respectively. It is also greater than the projected total 1980 expenditure on operation and maintenance and value of plant in service of the Greater Cairo/Helwan Water Utility (L.E. 50.46).[4]

TABLE VI-20
COMPARATIVE ANALYSIS OF PLANNED COST RECOVERY
1980 L.E. Prices

SETTLEMENT*	POPULATION (1,000)	PER CAPITA EXPENDITURES					PER CAPITA REVENUES			TOTAL CAPITAL SURPLUS OR DEFICIT PER CAPITA	PER CAPITA ANNUAL FINANCING			TOTAL PROGRAM SURPLUS OR DEFICIT**	
		LAND	INFRA-STRUCTURE	COMMUNITY FACILITIES	HOUSING	TOTAL	LAND PRICE	DWELL. UNIT PRICE	TOTAL		ANNUAL BENEFICIARY PAYMENTS (L.E.)	ANNUAL COSTS OF CAPITAL AT CEN. BANK RATES (L.E.)	ANNUAL SURPLUS OR DEFICIT	PER CAPITA	TOTAL PROGRAM (L.E. 1,000)
NEW TOWNS AND SATELLITE TOWNS															
10th of Ramadan[1/]	150	--	933	1,837	1,072	3,842	218	1,072	1,290	(2,552)	53	183	(131)	(6,359)	(953,850)
Sadat City[2/]	500	--	688	1,424	349	2,461	521	349	870	(1,591)	47	97	(50)	(1,500)	(750,000)
6th of October[3/]	350	--	853	619	1,333	2,805	N.A.	N.A.	5,486	2,681	107	93	(14)	101	35,350
15th of May[4/]	150	--	677	1,432	1,229	3,338	N.A.	N.A.	1,564	(1,774)	88	176	(84)	(4,294)	(644,100)
NEW HELWAN COMMUNITY DEMONSTRATION PROJECT[5/]	30	432	779	1,373	133	2,717	1,223	133	1,356	(1,361)	83	105	(21)	(1,991)	(59,730)
PUBLIC HOUSING[6/]															
Berket	250	--	272	209	660	1,141	--	1,141	1,141	--	38	88	(50)	(1,500)	(375,000)
Deuwaka	30	--	272	67	239	578	--	578	578	--	19	48	(29)	(870)	(26,100)
COOPERATIVE HOUSING[7/]															
Total Program	385	N.A.	N.A.	N.A.	N.A.	1,746	N.A.	N.A.	1,536	(201)	116	134	(18)	(739)	(258,630)
Heliopolis	6.5	646	225	N.A.	1,816	2,687		2,201	2,201	(486)	198	166	32	474	3,081
DEMONSTRATION PROJECT[8/]															
Ismailia	134	12	104	69	--	185	114	--	114	(71)	9	9	--	(80)	(10,720)
Suez	41	--	226	150	217	593	98	217	315	(278)	22	29	(7)	(446)	(18,286)
WORLD BANK[9/]															
Cairo	70	--	20	10	12	42	--	22	22	(20)	3	2	1	18	(1,260)
Alexandria	9	--	67	17	206	290	N.A.	N.A.	299.46	9.46	23.36	25.73	(2.37)	(62.54)	(563)
Assiut	14	44	65	18	124	251	N.A.	N.A.	212.62	(38.38)	16.36	16.74	(0.38)	(45.98)	(644)

* See footnotes at end of Part 3, Section VI.
** See footnotes at end of Part 3, Section VI for terms of individual program recovery periods.

SOURCE: NUPS.

3. Public Housing Per Capita Costs

The two public housing projects being constructed by the Governorate of Cairo represent intermediate development proposals in that their costs are lower than the new towns, but higher than the upgrading and sites and services projects. Both of the projects provide primary, preparatory and secondary schools. The Berket project also includes a 300-bed hospital. Infrastructure costs are lower than the new communities because neither project provides treatment or major distribution systems. Housing costs are lower because unit sizes are smaller and because the governorate provided contractors with maximum price guidelines of L.E. 35 per square meter.

4. Per Capita Costs of Cooperative Housing

The General Organization for Housing and Building Cooperatives aims for a total program of 70,000 loans for construction of mainly private cooperative housing throughout urban areas of Egypt. The Organization projects that its 1980/1981 program will require financing amounting to L.E. 480 million of which they have borrowed L.E. 306 million. The remainder will come from initial deposits from borrowers. The organization generally provides financing for land and housing as individual cooperative projects are too small to require a total urban development package. Thus, as shown in Table VI-20, its total projected per capita expenditure is roughly L.E. 1,746.

The General Organization for Housing and Building Cooperatives also develops its own housing projects. The Heliopolis project, shown in Table VI-20, is an example of these cooperative projects. As the projects are mainly urban infill or urban periphery projects, they do not require large investments in community facilities, which in any event, the Organization does not finance. It does, however, finance on-site infrastructure, land purchase and housing. Those at the Heliopolis project total L.E. 2,687 per capita. These costs are roughly in the range of the new towns because land costs of L.E. 35 per square meter are included and the dwelling unit costs are greater than the average new town costs.

5. Demonstration Projects in Ismailia and Suez Per Capita Costs

The projected 134,000 population of the projects in the low income districts of Ismailia, Abu Atwa and El Seloum, show the lowest per capita development costs except, of course, for purely sites and services and upgrading projects. These costs are achieved because the projects are a combination of urban upgrading and extension, they have lower infrastructure and community facilities service levels, they rely on the private sector for construction of dwelling units, and they will be able to tie into the new water supply system being provided through the Suez Canal Authority.

The two projects were designed to provide incremental improvement to infrastructure. Initially, only standpipes serving 40 households each and a limited number of connections would be provided. Similarly, sewerage design flows are lower than those of the new towns. They also provide incremental improvement to educational and health facilities but rely on city-wide facilities for specialized services. Finally, limited administrative, social and religious facilities are included in the projects' design.

The infrastructure costs of the Cabanon New Community in Suez are higher than Ismailia projects because partial treatment of sewerage is provided, a more complete water system is required, and high voltage power transmission lines are needed. This off-site infrastructure also serves a proposed light industry area which will provide employment to the community. However, costs were distributed to the two projects on a consumption basis, so that each bears a portion of the costs.

6. Per Capita Costs of Sites and Services and Upgrading

The two sites and services projects in Alexandria and Assiut are fairly small projects aimed at serving low income populations. They provide basic standards of infrastructure, minimum plot sizes, miminal core units, and building materials loans to allow individual households to build their own housing units. The two projects aim at reaching income groups ranging from the 6th through the 81st percentile.

The Cairo upgrading project at Mansheit Nasser provides basic improved infrastructure to an existing population of 70,000 currently lacking water supply, sanitation and adequate community facilities. It provides this low income community with a combination of individual house water supply and in areas where densities are too great, standpipes serving an average of 40 households each. Since the site is rocky, improvements to sanitation are difficult. Thus, improvement is provided to cesspits and limited amounts of sewerage are constructed. The project also provides low income households with tenure to their plots.

H. Planned Cost Recovery

Two major components of cost recovery are presented in this section: recovery of capital costs for construction through plot sales and recovery of financing costs through beneficiary loan payments. As mentioned in the introduction to this chapter, this is a financial cost assessment where all costs of residential land, on-site infrastructure and housing not recovered directly through plot sales are treated as subsidies and then shown as initial losses to the project. Annual financing costs have been assumed to be those of the current central bank lending rate of 10 percent over 30 years. These financing costs have been applied against the portion of the dwelling unit prices which would be financed by a lending agency. The other costs are treated as direct capital subsidies and not financed. (Table VI-20)

1. Cost Recovery in New Towns

As with physical standards and per capita costs, the new towns present a range of cost recovery options from complete cost recovery through land sales, as is proposed by the 6th of October master plan, to a total subsidy of 62 percent of total program costs over the 30 year period of financing at 10th of Ramadan. Sadat City represents an intermediate solution where total subsidies are about 42 percent of total program costs.

As no sales of housing units have been completed in Sadat City, financing cost recovery was assumed to be similar to cooperative housing finance. However, if this is not the case and financing follows the 10th of Ramadan example, the total program subsidy will be in the same range due to initial capital subsidies and long term financing subsidies.

The 6th of October aims for full cost recovery through land sales. It develops cross subsidies from industrial, tourism and commercial land sales to partially subsidize housing costs and potentially fully subsidize construction costs of community facilities. The table indicates that the city development agency should be able to finance housing construction without assistance from central bank loans and, thus, show a program surplus. However, if the development agency did borrow at current cental bank rates, it would show a financing subsidy requirement of L.E. 86 per capita due to the differences in lending interest rates of 7 percent and borrowing rates of 10 percent.

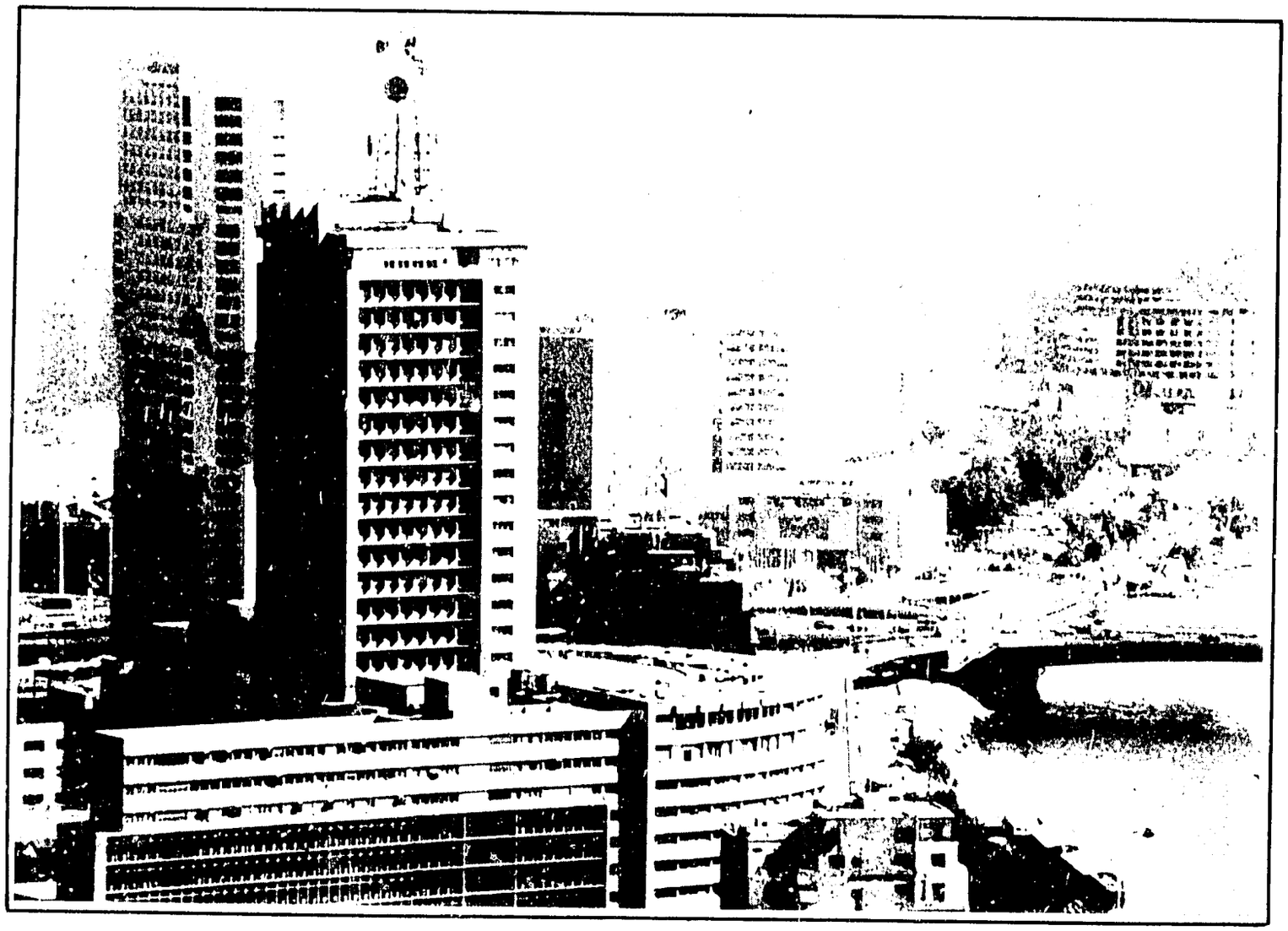
Cost recovery of the Helwan New Community costs presents some difficulties as the cost of the development will be recovered from the purchases of plots, all of which will be developed when the community reaches 30,000. However, the project is designed to have an ultimate population of 110,000 as initial plot purchasers are expected to build second and third storey rental units, thus, potentially tripling the community's population. However, as most of this investment must be made in initial stages to serve the 30,000 population, Table VI-20 shows the ultimate costs of the project recovered from initial purchasers.

2. Cost Recovery from Cooperatives

The total program losses of the General Organization for Housing and Building Cooperatives result from initial subsidies on land on its own construction projects and the interest rate subsidies between its average lending rate of 3.35 percent and the 10 percent rate of the Central Bank from which it borrows. However, due to the policy of leasing land on its own projects, it should achieve a return of 7.67 percent overall, which will reduce its total program subsidy requirement. The project which the Organization is developing at the Heliopolis site demonstrates this method of cost recovery. Its initial capital subsidies due largely to land costs are estimated at L.E. 486 per capita. However, this amount should be fully recovered through beneficiary interest payments and monthly leasehold payment for land projected at L.E. 1.00 per net square meter. Thus, over the program life, it should show an ultimate surplus of roughly L.E. 474 per capita. This surplus can be used to reduce the Organization's requirements for goverment interest rate subsidies on its loans to private cooperatives.

3. Per Capita Recovery in Demonstration Projects

The combined projects of Abu Atwa and El Hekr, having a total population of 134,000 were designed to be self-financing after initial subsidies for community facilities and major infracturture. These account for about 41 percent of development capital costs.



4. Cost Recovery in Upgrading and Sites and Services Projects

The Cairo upgrading and sites and services projects in Alexandria and Assiut show the least subsidies, as these have the lowest design standards of all the case studies. These subsidies result from the costs of community facilities and off-site infrastructure. Some of these initial costs, such as electrical power installations, however, are expected to be recovered through user charges.

5. Total Program Cost Recovery

The final two columns of Table VI-20 show estimates of total program surpluses or losses on a per capita basis and for the total program. These are indicative projections of the surpluses or losses which will occur due to the financing assumptions shown on the Table. They result from adding the capital surplus or losses to the expected sum of the annual surplus or deficit over 30 years on the projected recovery period.

FOOTNOTES
(Section D)

1 Subsequent to preparing this report, it has been learned that mechanical treatment systems have been substituted for oxidation ponds. This will negate the savings shown above and generally not result in a higher level of service.

(Section G)

2 Reserves for highways are excluded for the area of the Helwan New Community.

3 "Threshold Analysis Handbook," Department of Economic and Social Affairs, United Nations, New York, 1977, pp 98-105.

4 "Management and Tariff Studies Relative to Water/Sewerage Systems. Water Utility, Tariffs." Volume 1, Final Report. BVI-ATK Associates with Sabbour Associates, 1980, Table 12-I.

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NOTES TO TABLE VI-3

1. Data about the costs and standards of housing solutions presented for 10th of Ramadan were derived from discussions of tender costs with 10th of Ramadan Development Authority officials in charge of implementing housing and infrastructure of the project and the following master plan report:

   Arab Republic of Egypt, Ministry of Development and New Communities. Advisory Committee for Reconstruction. "Tenth of Ramadan. First Stage. Final Report." 1978. Prepared by COPA, Egypt and SWECO, Sweden.

2. Sadat City data was derived from review of tenders for the infrastructure of the first industrial areas and the first residential areas, review of Sadat City bills of quantities and discussion of development costs with Sadat City Development Authority officials. In addition, data were taken from the following planning volumes:

   "Final Report: Elements of the Plan. The Planning of Sadat City." Arab Republic of Egypt, Ministry of Reconstruction and Development, September 1977, Vol. I, II, III and IV. Prepared by Sabbour Associates, David A. Crane and Partners, Marcel Breuer and Associates, Parsons Brinckerhoff International, Inc., Peat, Marwick, Mitchell and Co., and Warner Burns Toan Lunde.

   "Planning the First Stage, Sadat City Task 1G-1, 1G-3, The Planning of Sadat City." Arab Republic of Egypt. Ministry of Development and New Communities. Advisory Committee for Reconstruction. February 1979 (various unofficial documents).

3. Data of the 6th October were taken from:

   The Sixth of October Master Plan dated 1979 was prepared by the General Organization for Physical Planning. Only average housing standards are shown because the plan does not detail its housing proposals.

4. The standards and costs of the 15th of May new community come from cost estimates and contractor prices supplied by the 15th of May Development Authority and the following:

   New Helwan Residential Community Master Plan, Vol. II. The Ministry of Housing and Reconstruction, Central Authority for Reconstruction, General Organization for Physical Planning. Prepared by the consultants for Planning and Design of Helwan City. 1976.

5. Data on the standards and costs of the New Helwan Community were derived from discussions with the Project Implementation Unit of the Joint Housing Team, consultants preparing the designs of the project, USAID Office of Housing and the following:

   "Helwan New Community," Vol. III — Cost Estimates. Submitted August 1980.

   These other documents were used for reference to the project:

   ES-Parsons/ECG. "Final Engineering and Feasibility Report," submitted September 1978.

   U.S. Department of State, Agency for International Development, "Project Paper — Egypt: Housing and Community Upgrading," July 1978.

6. Data on the public housing projects of the Governorate of Cairo came from unofficial documents prepared by the Housing Division of the Governorate and from discussions of the projects/costs with the governorate officials in charge of developing the projects.

7. Details of the cooperative housing program came from discussions with the chairman and various officials of the General Authority of Housing and Building Cooperatives.

8. Details of the projects at El Hekr and Abu Atwa were derived from discussions of the projects with project consultants and the following:

"Ismailia Demonstration Projects, Final Report," April 1978. Arab Republic of Egypt. Prepared by Clifford Culpin for the Ministry of Housing and Reconstruction, Advisory Committee for Reconstruction, Volumes I, II, and III. April 1978.

9. The standards and costs of the New Cabanon Community of Suez came from discussions with the consultants preparing the project and advising the Governorate of Suez and the following:

Advisory Committee for Reconstruction, Ministry of Housing and Reconstruction, Arab Republic of Egypt. Ministry of Overseas Development, United Kingdom. "Suez Demonstration Project." Volumes I-VI. Robert Matthew, Johnson-Marshall and Partners, Sir William Halcrow and Partners, Economic Consultants Limited, Hamed Kaddah and Partners, April 1978.

10. Details of the sites and services projects at Assiut and Alexandria and the upgrading project at Mansheit Nasser, Cairo came from discussions of the projects with the Urban Project Department of the World Bank and the following:

The World Bank. "Arab Republic of Egypt, Egypt Urban Development Project." Staff Appraisal Report. June 1978. Report No. 1976-EGT.

11. Average total per capita costs are shown in Table VI-9.

NOTES TO TABLE VI-18

1. Cost data for the first stage (150,000 population) of 10th of Ramadan come from the following sources:

Infrastructure from discussions of actual tender costs with 10th of Ramadan Development Authority officials; community services from "10th of Ramadan First Stage Final Report," 1978; and were updated using a standard 15 percent annual increase in construction costs and housing from 10th of Ramadan Development Authority officials.

2. Cost data for the first stage (population 41,900) came from discussions of actual tender costs of infrastructure with Sadat City Development Authority officials and 1977 cost data presented in various unpublished reports submitted to the Ministry of Development by the Sadat City consultants. Cost data for the total city (population 500,000) come from the 1977 Master Plan for Sadat City and were updated using a standard 15 percent annual rate of increase in construction costs. As housing costs in both reports are similar to 1980 construction costs, these were used with updating.

3. The costs of the 6th of October New Town were derived from various volumes of the "Sixth of October Master Plan". As these costs were developed as of December 1979, no cost updating was necessary.

4. 15th of May cost data have been derived from discussions of actual tender costs with 15th of May Development Authority officials and from standards presented in the "New Helwan Residential Community Master Plan". As the Master Plan does not present cost data, costs from estimates of similar facilities in Sadat City and 10th of Ramadan were used to estimate the costs of 15th of May community services. All 1977 costs were updated using a standard 15 percent annual rate of increase in construction costs.

5. The costs of the USAID Helwan New Community were taken from Helwan New Community Cost Estimates. Volume I. Submitted October 1980 (Scheme II base cost estimates plus 15 percent contingencies).

Helwan • New Community. Phase I: Dwellings. December 1980.

Tender costs from 15th of May were used to estimate costs for parks and open space; tender costs from new towns for schools, estimated costs from Sadat City Master Plan were used for health care facilities.

Two estimates are shown based on Project Paper prepared by USAID. The first shows level payment mortgages at 7 percent while the second shows variable payment mortgages as no institutional data showing the impact on lending institutions using variable payment mortgages were presented in project documents.

6. Public housing cost data was derived from discussions of the current public housing program of the Cairo Governorate. As these result from 1979 tenders, no updating is necessary. The infrastructure costs are based on the full development of Deuwaka. Berket infrastructure and community facilities costs are based on Deuwaka costs as the physical standards of the projects are similar.

7. Cooperative housing program cost data were derived from discussion of the General Authority for Housing and Building Cooperative's current lending program and more detailed discussions with authority officials of specific projects in Heliopolis and Nasr City. As these projects have recently been tendered, no cost updating was necessary.

8. Data for the demonstration projects were updated from the programs for these demonstration projects presented in the "Ismailia Demonstration Projects: Final

Report," Vol. I-III, April 1978. As these are 1977 costs, they have been updated using a standard 15 percent annual rate of increase in construction costs.

9. World Bank Project. The source of standards and costs for both upgrading and sites and services projects is the "Arab Republic of Egypt, Egypt Urban Development Project". Staff Appraisal Report, June 1978. Report No. 1976-EGT. Since only limited construction has occurred, the costs of these projects were updated using a standard 15 percent annual rate of increase in construction costs.

NOTES TO TABLE VI-20

1. 10th of Ramadan land prices have been sold in residential areas at L.E. 3 per net square meter of residential land. Although there have been some changes in land selling prices, the bulk of the land of the first stage (150,000 population) was sold at L.E. 3. Therefore, this analysis shows the financial impacts of selling land at those prices. Financing for dwelling units is at 3 percent annual interest over 30 years with downpayments of 10 percent.

2. Sadat City land prices have been estimated at L.E 7 per net square meter, plus an additional annual charge of L.E. 0.35 which will be imposed during the initial two-year development period prior to sale of residential land. Since no units have actually been sold at Sadat City, it has been assumed that housing financing terms would be similar to cooperative housing finance (i.e., loans of L.E. 4,000 or less would be financed at 90 percent of their value at 3 percent over 30 years, while loan amounts greater than L.E. 4,000 would be financed at 80 percent of their value at 5 percent over 25 years.

3. The total per capita land selling prices for 6th of October include estimates of selling prices of industrial, commercial and tourism land. Residential land prices are roughly 24 percent of the total prices shown in the table. Since the 6th of October aims at having a positive annual cash flow through the sales of land, it should be able to finance housing without loans from the Central Bank. However, if mortgage loans are financed at Central Bank rates, a subsidy from profits of land sales would be required.

4. 15th of May financing is as follows:

Housing Type	Annual Interest	Period	Down Payment
Economic	3%	30 yrs.	10%
Middle	5%	20 yrs.	20%
High	9%	10 yrs.	30%

5. The Helwan New Community proposes to lend to initial plot purchasers (30,000 population) at 7 percent over 30 years with a 20 percent downpayment.

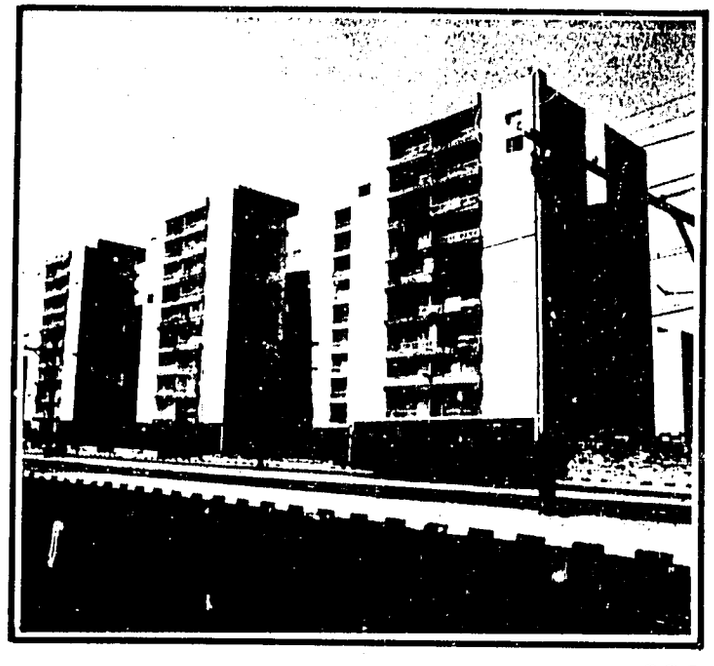
6. Public housing shown here is being financed directly by the Cairo Governorate through budget subvensions. These in turn are only lent to low income beneficiaries at Berket of 0 (zero) percent interest over 30 years. Land, infrastructure and community facilities are fully included. The Deuwaka project is rented at L.E. 1 per room per month.

7. The General Authority for Housing and Building Cooperatives program has been estimated as shown as much of it is in early planning stages. The case study program shown at Heliopolis shows a project surplus over the period of the program due to the L.E. 1 per month per net square meter lease charges which are imposed on land.

8. The demonstration project agencies at Ismailia were designed to be self-financing after initial subsidies community facilities and trunk infrastructure. The project agencies finance their activities through equity participation and through loans which are repaid through beneficiary mortgages.

The low income project at Suez shows larger subsidies due to the difference between 3 percent lending rates and the 7 percent central bank lending rates which were current when the project was designed.

9. The small subsidies shown in annual financing of the World Bank projects result through differences in repayments from beneficiaries to the governorates and the governorate repayments to the National Housing Fund, and assumptions about costs which might be recovered through user charges such as electricity and other major trunk infrastructure.



Part Four : Households and Housing

I. Household Characteristics
II. Urban Household Income and Expenditure Estimates
III. Income Tax Structure and Rates
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EGYPT NUPS
دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

PART FOUR

HOUSEHOLDS AND HOUSING

I. HOUSEHOLD CHARACTERISTICS

A. Average Household Size

Egypt has experienced an increase in average household size between 1960-1976. Although urban settlements have higher average size households, this increase has been more prevalent in rural areas than in urban settlements.

The size of the family is determined by the type, whether nuclear or extended, and the number of surviving children.

1. Extended families are more a pattern of rural existence than urban in Egypt. In cities, families live together mainly because of shortages in housing. New migrants to the city, including students, reside with relatives until they are more economically established or until they are ready to form their own family.

Extended family ties are still relatively strong in Egypt. It is socially and culturally expected that extended family members provide all necessary financial, material, moral and social support to each other in times of need. However, the trend toward nuclear residence is increasing, especially when the head of the nuclear family can support such an existence. What will persist, even without housing shortages are three types of extended family households.

The first type includes families with elderly parent(s) living with them. It is still the responsibility of children to take care of their aged parents, especially a widowed mother. This responsibility usually lies with the oldest son. However, it may be decided among brothers and sisters, who will be responsible to host the parent(s). It may also be a rotating responsibility.

A second type of extended household that may persist is the urban household that will accommodate young relative migrants from the village of previous residence.

TABLE I-1

NUMBER OF HOUSEHOLDS, AVERAGE ANNUAL PERCENT INCREASE, AVERAGE HOUSEHOLD SIZE, BY RURAL GOVERNORATES, 1960 - 1976

GOVERNORATE		Number of Households 1960	Number of Households 1976	Compound Annual Increase 60-76 %	Average Size of Household 1960	Average Size of Household 1976
Giza	T	275,571	482,709	3.57	4.8	5.0
	U		291,002			4.7
	R		197,707			5.4
Qalyubia	T	195,814	316,711	3.05	5.0	5.3
	U		136,379			5.0
	R		180,332			5.5
Beheira	T	298,258	400,470	1.86	5.6	6.3
	U		114,733			5.7
	R		285,737			6.5
Ismailia	T	53,488	68,148	1.53	5.3	5.2
	U		35,750			4.9
	R		32,398			5.5
Sharkia	T	348,654	468,310	1.86	5.2	5.6
	U		102,154			5.2
	R		366,156			5.7
Menoufia	T	269,899	311,401	0.90	5.0	5.5
	U		63,659			5.3
	R		22[illegible],742			5.6
Kafr El Sheikh	T	166,099	230,249	2.06	5.8	6.1
	U		53,951			5.4
	R		176,298			6.3
Dakahlia	T	374,112	489,741	1.70	5.4	5.6
	U		130,428			5.0
	R		359,913			5.8
Gharbia	T	332,552	421,741	1.50	5.1	5.6
	U		130,428			5.0
	R		359,313			5.8
Damietta	T	71,321	105,653	2.45	5.4	5.3
	U		28,484			5.0
	R		77,169			15.4
Fayoum	T	185,587	220,698	1.09	4.5	5.2
	U		54,426			5.0
	R		166,272			5.2
Beni Suef	T	198,880	229,343	0.89	4.3	4.8
	U		56,104			4.9
	R		173,237			4.8
Assuit	T	267,955	318,345	1.08	4.9	5.3
	U		91,448			5.1
	R		226,897			5.4
Sohag	T	309,211	367,655	1.09	5.1	5.2
	U		78,099			5.2
	R		289,556			5.2
Qena	T	283,711	341,798	1.17	4.7	5.0
	U		77,470			5.0
	R		264,328			5.0
Aswan	T	86,892	128,509	2.48	4.4	4.8
	U		46,084			5.0
	R		82,425			4.7
Minia	T	349,123	415,782	1.10	4.5	5.0
	U		86,513			5.0
	R		329,269			4.9
Matruh	T	N.A.	18,696	N.A.	N.A.	6.0
	U		9,343			5.5
	R		9,353			6.6

SOURCE: NUPS Analysis of CAPMAS 1976 Census Data.

TABLE I-2

NUMBER OF HOUSEHOLDS, AVERAGE ANNUAL RATE OF INCREASE, AVERAGE SIZE OF HOUSEHOLDS, CITIES OF 50,000 AND ABOVE, 1960-1976

City	Number of Households 1960	Number of Households 1976	Compound Annual Increase 1960-1976 %	Average Size 1960	Average Size 1976
Cairo	687,858	1,065,357	2.77	4.8	4.8
Alexandria	299,271	466,063	2.81	5.0	4.9
Port Said	46,098	52,156	0.77	5.2	5.0
Suez	40,334	40,113	(0.03)	5.0	4.8
Giza	83,052	262,505	7.46	4.8	4.7
Benha	9,844	17,034	3.49	5.3	5.2
Shoubra El Kheima	22,320	82,020	8.47	4.5	4.8
Qalyubia	8,079	12,065	2.54	5.3	5.2
Damanhour	23,062	37,384	3.07	5.4	5.1
Idku	6,180	8,883	2.29	6.[illegible]	7.0
Kafr El Dawar	7,492	27,212	8.40	5.7	5.9
Zagazig	23,422	40,580	3.49	5.2	5.0
Ismailia	21,974	28,073	1.55	5.3	5.2
Abu Kabir	6,994	9,795	2.13	5.3	5.6
Belbeis	6,897	12,994	4.04	5.5	5.3
Shebin El Kom	10,740	20,117	4.00	5.0	5.1
Menouf	8,290	10,306	1.37	5.0	5.3
Kafr El Sheikh	7,175	15,266	4.83	5.3	5.1
Dessouk	7,551	11,066	2.42	5.2	5.[illegible]
Mansoura	29,433	54,019	3.87	5.1	4.8
Mataria	7,101	11,760	3.20	5.1	5.2
Balkas	6,969	9,270	1.80	5.1	5.4
Mit Ghamr	7,562	14,441	4.13	5.3	5.0
Tanta	35,975	58,285	3.06	5.1	4.9
Mahalla	34,790	58,505	3.30	5.1	5.0
Zefta	5,717	9,165	2.99	5.5	5.5
Damietta	13,541	19,026	2.15	5.3	4.9
Fayoum	21,409	33,828	2.90	4.9	4.9
Beni Suef	16,539	24,883	2.59	4.6	4.7
Minia	20,107	29,285	2.38	4.7	5.0
Assuit	25,233	43,424	3.45	4.7	4.9
Sohag	12,389	20,352	3.15	5.0	5.0
Akhim	8,150	10,237	1.44	5.1	5.2
Gerga	8,327	10,777	1.62	5.0	5.0
Qena	11,671	18,774	3.02	4.7	4.9
Luxor	7,249	18,928	6.18	4.8	4.9
Aswan	10,689	29,091	6.46	4.4	4.9

SOURCE: NUPS Analysis of CAPMAS 1976 Census Data.

A third type of extended residence that may persist is one where a single, divorced or widowed young female is living with parents, brother, or sister. In case of widowhood, when the children are young, the widow may live with her in-laws. There are social pressures to marry off young females. Families usually are not willing to cope with the responsibilities involved in hosting or "protecting" unmarried young women. On the other hand if one of her sons is a teenager, she may be allowed to live alone and even be discouraged from remarrying.

2. The second factor that affects the average family size is the average number of surviving children. Families that experience a drop in infant mortality because of betterment in health conditions without substantially altering their reproductive behaviour have higher number of survivals. There is usually a time lag between the decrease in infant mortality and the decrease in fertility. This has been labelled a "transition period".

In general, families of white collar occupations have the lowest fertility rates, followed by skilled and semi-skilled workers, unskilled and service workers, then farm labor. Unskilled and service workers have fertility rates closer to farm workers than to skilled workers. The greater the level of urbanization of the socio-spatial environment of residence, the lower the fertility. Even among white collar occupations those residing in urban environments have on the average lower fertility rates than families residing in rural areas. The same is true for skilled and semi-skilled production workers.

Infant mortality rates have been declining steadily. However, families in rural areas and families of low income groups in urban areas still have higher rates of infant mortality than urban families in the middle and upper strata of society.

Added to this picture, large families are still valued in Egypt. There are persisting strong norms toward large families. The largest proportion of married females practicing modern family planning methods, intend to terminate reproduction rather than to space children. These females are different from the previous generation in that they achieve high surviving parity at a younger age than their mothers because of overall conditions.

All population projections assume a gradual decline in fertility in Egypt until the year 2000. The question is when and how much. It may be expected that average size of families especially in urban settlements will start to decline.

B. Compound Rate of Growth of Number of Households

From Tables I-1 and 2, it is clear that the compound annual rate of growth in number of households of urban governorates (excluding Port Said and Suez) and of capitals of rural governorates, are higher than secondary cities and rural governorates in total. The only two exceptions are the cities of Damietta and Minia, both of which had relatively low growth rates when compared with other rural governorate capitals.

TABLE I-3

HOUSEHOLD SIZE DISTRIBUTION 1976

* Number of households by number of members.

Household Size Distribution	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15+	Total Households
U	206,923	380,803	417,068	492,275	489,558	427,903	326,436	218,279	127,020	73,254	25,901	11,235	5,983	3,482	6,936	3,213,056
%	6.4	11.9	13.0	15.3	15.2	13.3	10.2	6.8	4.0	2.3	0.8	0.3	0.2	0.1	0.2	100.0
R	212,074	380,462	420,725	483,876	511,876	491,379	414,825	305,811	199,412	139,738	57,870	32,712	22,502	16,505	44,212	3,733,979
%	5.7	10.2	11.3	12.9	13.7	13.2	11.1	8.2	5.3	3.7	1.6	0.9	0.6	0.4	1.2	100.0
T	419,997	761,265	837,793	976,151	1,001,290	919,282	741,261	524,090	326,432	212,992	83,771	43,947	28,485	19,987	51,148	6,946,891
%	6.0	11.0	12.1	14.0	14.4	13.2	10.7	7.5	4.7	3.1	1.2	0.6	0.4	0.3	0.7	100.0

SOURCE: 1976 Population Census.

The major source of these different rates of growth is population movements. Settlements that experience net in-migration have higher rates of growth in numbers of households. Rural settlements and smaller cities that experience net out-migration have lower rates of growth.

Another factor affecting rates of family formation is average age at first marriage of females. This factor affects family formation from two dimensions. Age at marriage affects the duration of exposure to pregnancy risks, hence it has an impact on number of surviving children. Age at marriage also affects the length of generation interval of family formation. The lower the average age at marriage, the higher the rate of growth in number of families.

C. Household Size Distribution

Table I-3 presents the actual household size distribution for 1976. It can be seen that there is a wide range of household size and that the use of an average size of five persons is misleading for some purposes. The tendency of urban households to be smaller is self-evident. It is interesting to note that there are an equal number of households of one to four persons (1.5 million) in urban and rural areas in spite of the fact that there are in total over 500,000 more rural households. Only 14.7 percent of the urban households contain eight persons or more while in rural areas 21.9 percent of the households are eight persons or more.

II. URBAN HOUSEHOLD INCOME AND EXPENDITURE ESTIMATES

A. Introduction

There have been no comprehensive income or expenditure surveys since the 1974-1975 Urban Household Expenditure Survey conducted by CAPMAS. Therefore, most comprehensive annual data since then is based on the original CAPMAS survey and adjusted for inflation and other factors.

Basic information about household incomes and expenditures is a prerequisite for designing urban plans, programs, projects, and policies. Expenditure patterns of the household determines the affordability to the household and what, if any, subsidy element the government will provide.

TABLE II-1

URBAN HOUSEHOLD EXPENDITURE DISTRIBUTION, 1979

Expenditure Bracket L.E./Year	Percent of Households Bracket	Percent of Households Cumulative	Expenditure Bracket L.E./Year	Percent of Households Bracket	Percent of Households Cumulative
0-99	0.2	0.2	2000-2099	1.5	89.0
100-199	0.3	0.4	2100-2199	1.3	90.3
200-299	2.0	2.4	2200-2299	1.2	91.5
300-399	3.5	5.9	2300-2399	1.1	92.6
400-499	5.6	11.5	2400-2499	1.0	93.6
500-599	7.2	18.7	2500-2599	0.95	94.55
600-699	7.6	26.3	2600-2699	0.90	95.45
700-799	7.8	34.1	2700-2799	0.80	96.25
800-899	7.9	42.0	2800-2899	0.70	96.45
900-999	7.7	49.7	2900-2999	0.60	97.55
1000-1099	7.2	56.9			
1100-1199	6.4	63.3	3000-3499	1.80	99.35
1200-1299	5.4	68.7			
1300-1399	4.3	73.0	3500-3999	0.585	99.935
1400-1499	3.4	76.4			
1500-1599	2.9	79.3	4000-4499	0.050	99.985
1600-1699	2.6	81.9			
1700-1799	2.1	84.0	4500-5000	0.015	100.000
1800-1899	1.8	85.8			
1900-1999	1.7	87.5			

Lowest quartile L.E. 0 -	683	L.E. 57/Month
Midpoint	- 1,004	L.E. 84/Month
3rd quartile	- 1,459	L.E. 122/Month

SOURCE: USAID Memorandum, based on CAPMAS 1974-75 Urban Household Expenditure Survey, adjusted for inflation. Household defined as a nuclear family.

The NUPS team has undertaken a collection of available expenditure and income surveys and analyzed them to provide an estimate of urban household income and expenditure for 1979-1980.

This process has been to essentially accept the 1979 estimate of USAID for household expenditures (see Table II-1) and compare it against other known data to see if it seems realistic. Our conclusion is that it is a reasonable basis for use in calculations of current urban household income though it probably has underestimated the number of households in the lowest income categories, say under L.E. 300 annually.

Furthermore, the data does not concern itself with household savings, which is important in determining relevant proposals for housing strategy. Savings make up a very large "floating" pool of funds, a significant amount of which is outside normal financial institutions, and which clearly affects the housing market in Egypt. Some effort to obtain information on the amount and distribution of savings among urban households would be highly desirable.

B. Comparison of 1975 and 1979 Data

Table II-2 presents the comparison between the USAID income estimate prepared in 1975 with the 1979 data. This 1979 data was reduced to allow for inflation using the CAPMAS Consumer Price Index (Statistical Yearbook, July, 1979), adjusted to 1975 as a base year. The result has been spread against the Income /Expenditure curves to show the estimated real growth rate of Income/Expenditure during the five-year period.

The interim year estimates of the World Bank and USAID for 1977 and 1978 are used in deriving Table II-2. The table shows the percentiles (10, 20, 50, 80, 90th) of urban households across the top of the table and the estimate of income by year for each percentile below. Thus, the lowest 10 percent of the urban households earned less than L.E. 420 per year in 1979; 20 percent of the households earned less than L.E. 620 per year; 50 percent of the households earned less than L.E. 1,000; and 50 percent earned more than L.E. 1,000 per year.

This data is then summarized in the aggregate total change between 1975 and 1979 at each percentile unit, the percentage of annualized growth in income this represented, the real gain in income compared to 1975 as the

base year, and the adjusted percent annual rate of increase. Using the average amount of expenditure on housing from the 1975 survey, the amount available for housing by each income group is estimated (keeping in mind that these percentage levels are artificially low because the data include all households, many of which enjoy low rent controlled expenditures, and not just those looking to obtain housing who might well be prepared to spend more than the levels shown).

It should be stressed that these income levels are to be considered indicative of the general order of magnitude.

C. Comparison with Other Data Sets

There are various income estimates and survey data for small areas which have been undertaken at various times during the past few years. These estimates have been reviewed for general consistency with the overall estimate prepared by USAID. They have been summarized in Table II-3. The five 1979 income surveys used for comparison can support the logical range of the AID findings, but cannot be used to statistically validate them.

TABLE II-2

ESTIMATED ANNUAL INCOME OF URBAN HOUSEHOLDS AT SELECTED PERCENTILE LEVELS

1975-1979

YEAR**	HOUSEHOLD INCOME AT PERCENTILE (L.E.)					INCREASE GENERAL	ANNUAL % INCREASE
	10th	20th	50th	80th	90th	Cost of Living*	
1975	100	170	360	800	1,100	100.0	
1976	--	--	--	--	--	110.3	10.3
1977	150	300	520	1,000	1,600	124.3	12.7
1978	230	350	750	1,250	2,000	138.0	11.0
1979	420	620	1,000	1,600	2,200	155.6	12.8
Total Increase (LE)	320	450	640	800	1,100	+55.6	--
Annual % Increase	43.2	38.2	29.1	18.9	18.9	11.7	--
1979 Income Adjustment for Cost of Living	270	398	643	1,028	1,414	--	--
Annual % of Real Increase	28.2	23.7	15.6	6.5	6.5	--	--
% Spent on Housing	10.5	9.4	9.1	8.8	6.5	--	--
1979 Average Annual Housing Expenditure (LE)	44	58	91	191	156	--	--

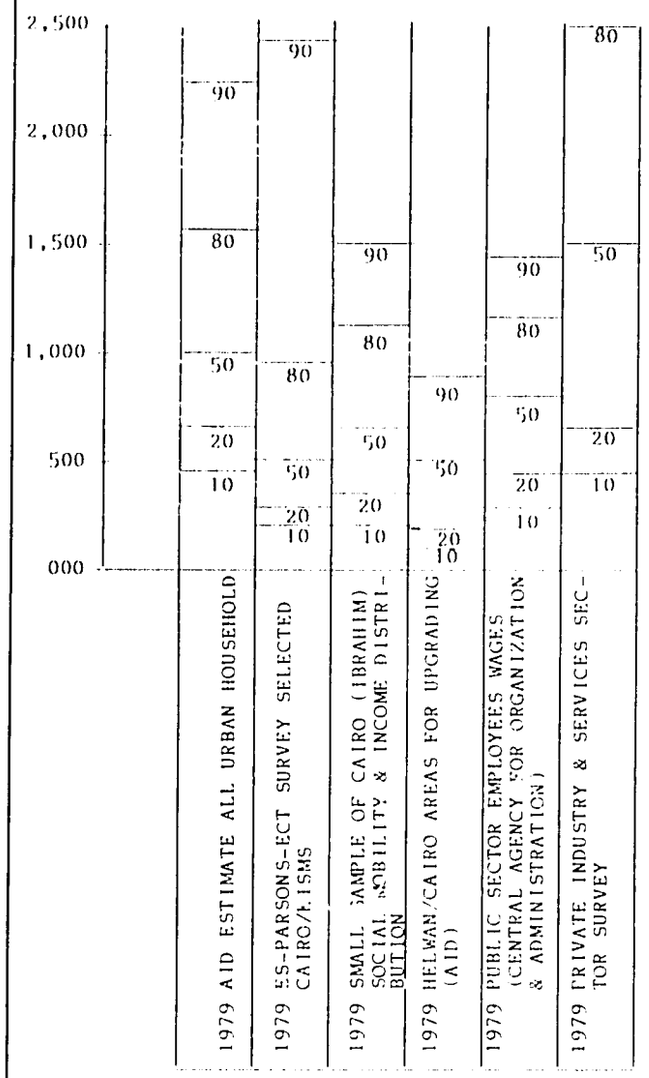
SOURCES:

* Index numbers of consumer prices (urban) Statistical Yearbook 1979, page 236 (adjusted for 1975 base year of 100; NUPS 1979 estimate).

** 1975 AID estimate.
1976 CAPMAS Family Expenditure Survey.
1977 World Bank estimate.
1978 AID estimate.
1979 AID estimate.

TABLE II-3

COMPARISON OF SELECTED ANNUAL INCOME SURVEYS IN EGYPT ORGANIZED IN PERCENTILE GROUPS



858

1. ES-Parsons-ECG interviewed 1,000 plus households in selected Cairo Kisms. The sample was made on the basis of presumed water supply deficiencies, and thus results would reflect somewhat lower household incomes in general.

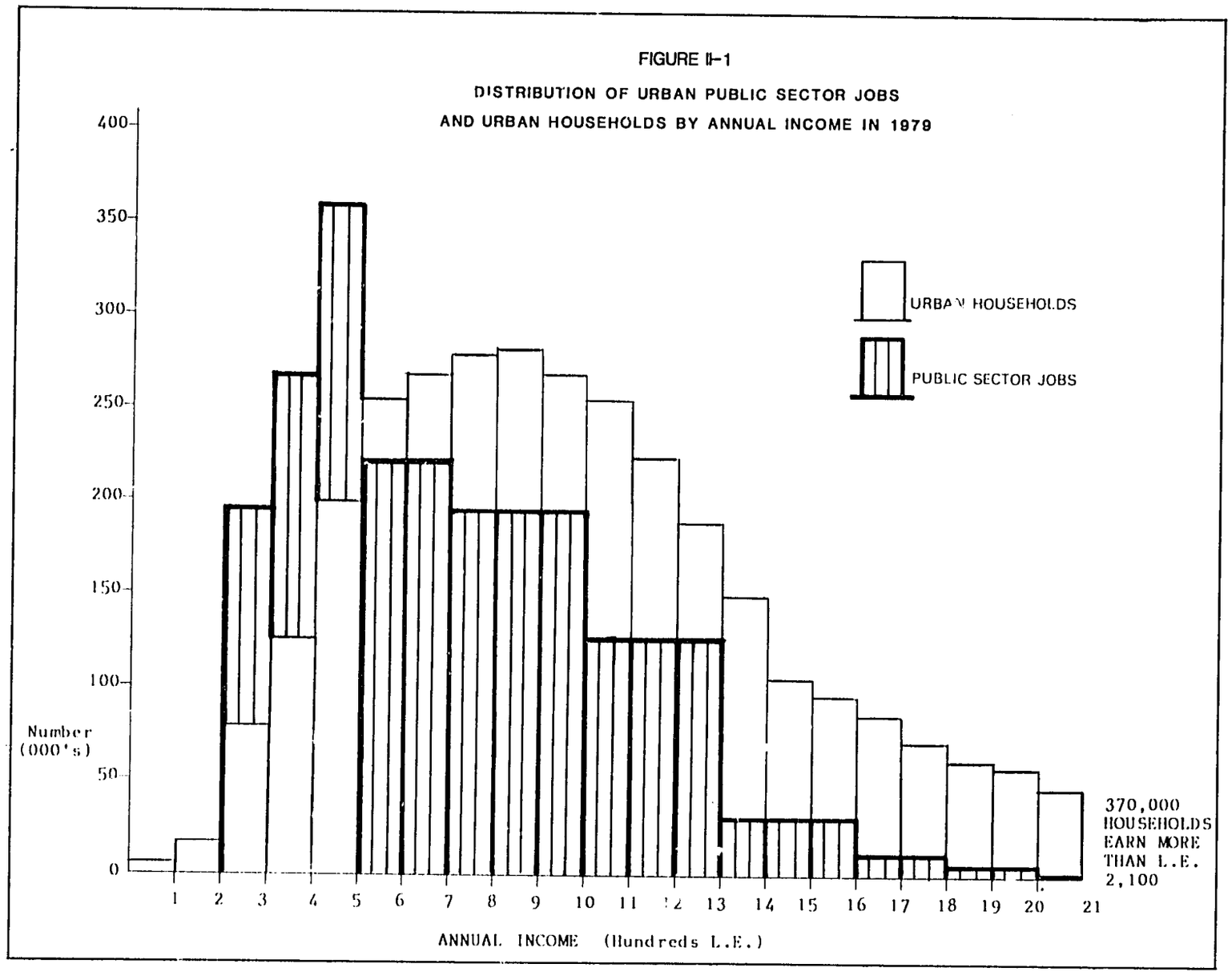
2. A very small sample of 350 households was taken by Mr. Ibrahim as part of his research on "Social Mobility and Income Distribution" which seems consistent given the small sample.

3. AID sponsored a survey in specific areas selected for upgrading which were presumed to be low income areas in Cairo and Helwan. This data seems to fit logically with the lower income percentile ranges.

4. A 1979 estimate of all public sector workers (national, local and enterprises) provides a large data base as there are two public sector jobs for each three urban households. Given the fact that public sector jobs are known to pay less than the private sector, this data is conistent both with the overall AID estimates and the related private sector data.

5. The Middlee East Advisory Group's 1979 country-wide "Survey of Personnel Policies and Salary Levels in Egypt" is based on interviews with over 4,000 persons in private sector employment, for the most part with firms having international partners. This is thought to bias the data upward about 10-15 percent above private sector firms without international partners.

It is interesting to note from Figure II-1 that in the lower income group categories (below L.E. 500 per year) there are actually more urban public sector jobs than there are urban households in these income categories. This tends to confirm the known tendency for low income persons to hold more than one job while working for the public sector. This increases their household income and therefore moves the household up the income curve.



D. Household Income Estimates to the Year 2000

Obviously, making household income estimates to the year 2000 must be viewed as speculative and subject to error. The only point in attempting such an estimate is to provide some sense of the order of magnitude of household incomes in order to provide a rough guide to such issues as the potential affordability of housing and infrastructure services and facilities based on the ability to pay.

Aggregate urban household income projections have been derived by correlating 1979 household income (Table II-4) with NUPS projections of Gross National Product to the year 2000 (based on assumed seven percent annual growth). NUPS urban population estimate data were disaggregated by income groups as indicated in Table II-4, and applied to the income projections. The result is an average annual growth in income (1979 L.E.) for all urban households averaging 3.85 percent.

Assuming that the commitment of the

TABLE II-4

APPROXIMATION OF FUTURE URBAN HOUSEHOLD INCOME DISTRIBUTION TO THE YEAR 2000 IN 1979 L.E.

Estimate % Growth in Income 1979-2000	Income Categories Mid-Points (L.E.) 1979	1985	1990	1995	2000	Proportion of Households in Category
	100	130	160	190	230	0.004
4.1	300	380	460	560	680	0.054
	500	640	780	950	1,160	0.128
	700	890	1,090	1,330	1,630	0.155
4.0	900	1,140	1,390	1,690	2,060	0.153
	1,100	1,390	1,690	2,060	2,500	0.134
3.8	1,300	1,630	1,960	2,360	2,840	0.097
	1,600	1,880	2,260	2,720	3,500	0.064
	1,700	1,090	2,480	2,940	3,490	0.046
	1,900	2,330	2,780	3,300	3,920	0.034
	2,100	2,580	3,050	3,630	4,310	0.028
	2,300	2,830	3,360	3,990	4,740	0.023
	2,500	3,070	3,650	4,330	5,140	0.019
3.5	2,700	3,320	3,940	4,680	5,560	0.017
	2,900	3,560	4,230	5,020	5,960	0.013
	3,200	3,930	4,670	5,550	6,590	0.018
	3,700	4,550	6,400	6,410	7,610	0.006
	4,500	5,530	6,570	7,800	9,260	0.005
	4,740+	5,870	6,940	8,240	9,790	0.002
Aggregate Annual Increase 3.85%						
TOTAL	--	--	--	--	--	1.000

SOURCE: NUPS Analysis.

TABLE II-5

APPROXIMATE FUTURE HOUSEHOLD DISTRIBUTION BY INCOME GROUP 1979-2000

Estimate of Growth in Income	Annual Income By Group 1979	Proportion of Households in Group	TOTAL URBAN HOUSEHOLDS 000's 1979	1985	1990	1995	2000
	100	0.004	15	18	26	26	30
4.1	300	0.054	200	247	294	347	408
	500	0.128	470	586	696	822	966
	700	0.155	565	710	843	995	1,170
4.0	900	0.153	570	701	832	982	1,155
	1,100	0.134	494	614	729	860	1,012
3.8	1,300	0.097	355	444	528	623	732
	1,500	0.064	230	293	348	411	483
	1,700	0.046	170	212	250	295	347
	1,900	0.034	125	156	185	218	257
	2,100	0.028	102	128	152	180	211
	2,300	0.023	83	105	125	148	174
	2,500	0.019	71	87	103	122	143
3.5	2,700	0.017	61	78	92	109	128
	2,900	0.013	48	60	71	84	98
	3,200	0.018	66	82	98	116	136
	3,700	0.006	21	27	33	39	45
	4,500	0.005	18	23	27	32	38
	4,750+	0.002	6	9	11	13	15
		1.000	3,670	4,580	5,440	6,420	7,550
Aggregate Annual Increase 3.85%			4,400	5,520	6,670	8,060	9,740

SOURCE: NUPS Analysis.

TABLE II-6

SUMMARY OF EGYPT'S FOOD AND ENERGY SUBSIDY IN 1979 (L.E. MILLION)

Type	Urban	Rural	Total
I. Food (All Direct)	1,019	0	1,019
A. Wheat	590	0	590
B. Oil	200	0	200
C. Sugar	44	0	44
D. Meat	44	0	44
E. Other	141	0	141
II. Energy	1,171	725	1,896
1. Direct	569	243	812
A. Kerosene	163	176	340
B. Butagas	82	7	89
C. Electricity	199	24	222
D. Gasoline	125	36	160
2. Indirect	602	483	1,085
A. Fuel	472	378	850
B. Electricity	130	105	235 1/
III. Total*	2,190	725	2,915 1/

*Totals may not add due to rounding.

SOURCE: U.S. AID. Egypt's Food and Energy Subsidies

1/ Does not include LE 54 million estimated indirect electricity subsidy provided in the production of exported aluminum.

government to achieve social equity objectives has an impact, the lowest quartile of the population might enjoy a 4.1 percent annual growth of income, the second quartile would experience 4.0 percent growth, the third quartile 3.8 percent growth, and the highest income quartile 3.5 percent. These estimates, again, are somewhat arbitrary.

The results of this approach are shown in Tables II-4 and 5. The major conclusion is that in the year 2000, given realistic assumptions, there will still be an extensive population of low income households. The median annual income will be approximately L.E. 2,060 and the lowest quartile will have an annual income of roughly L.E. 1,355 in 1979 L.E.s. While this would be a dramatic improvement in household income, it falls short of increasing the affordability of housing and infrastructure services that the government is currently trying to provide.

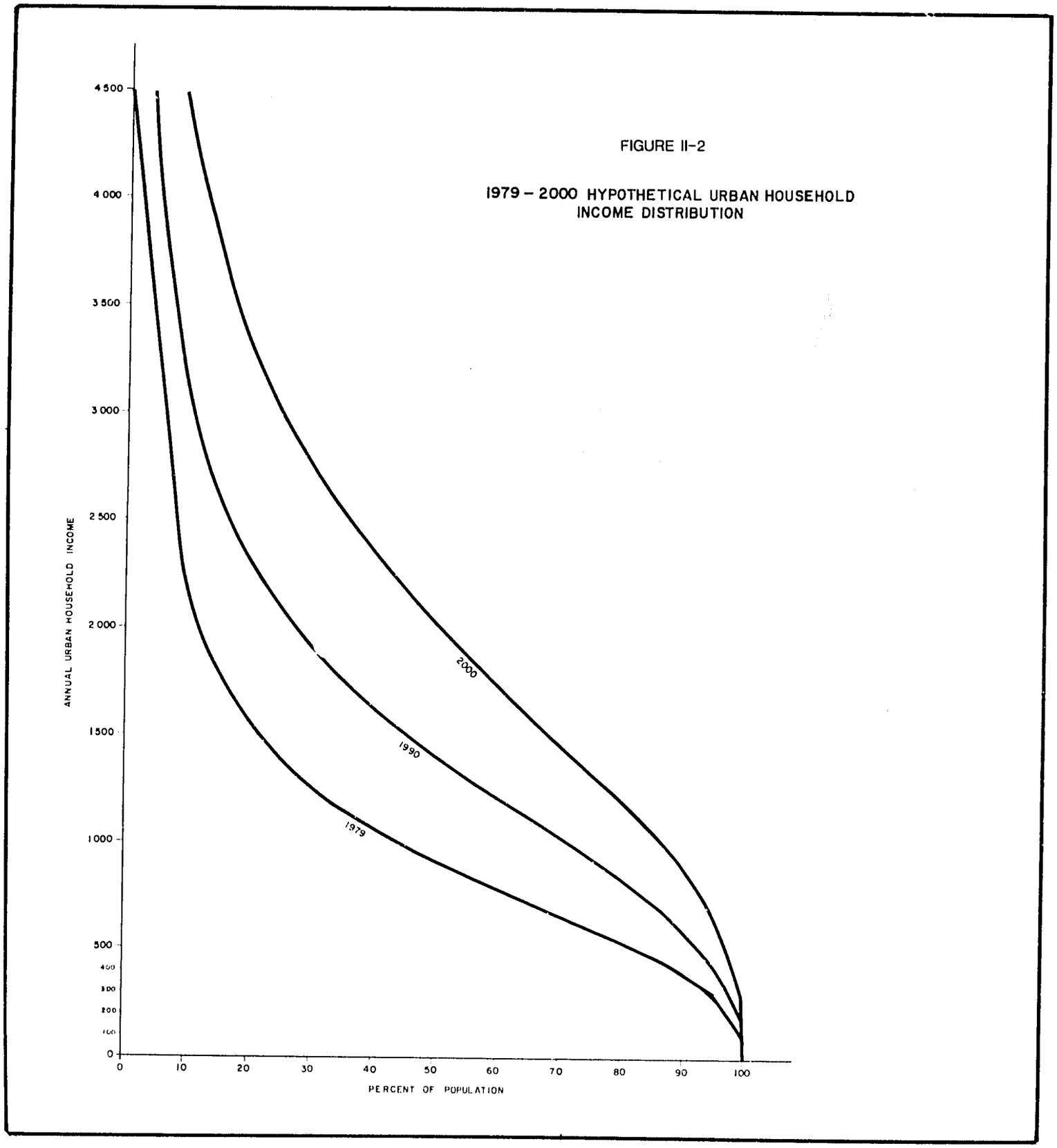
Figure II-2 compares the hypothetical 1990 and 2000 household income distribution to the 1979 data.

E. The Effect of Subsidies on 1979 Household Income Distribution

The material in this section has been summarized from an AID Report, "Egypt's Food and Energy Subsidies." It is important to consider the magnitude of these subsidies on the present level of household income.

1. Background

The Government has been providing subsidies (direct and indirect) to households since the 1950's. It was in the mid 1970's that these income transfers took on major significance as international prices started to rise dramatically and the government attempted to moderate local prices to protect the public from their effect. By 1979, the energy and food subsidy amounted to L.E. 2.9 billion (see Table II-6).



Food subsidies represent "the difference between the purchase price plus handling costs of subsidized items, and the sales revenue for them." The energy subsidy is defined as "the difference between the domestic sales price of petroleum products and electricity, and their opportunity costs to Egypt. The opportunity cost to Egypt of petroleum products is the product's international sales value. The real value of electricity is its marginal economic cost of production."[1]

2. Distribution of the Subsidies to Urban/Rural Households

As Table II-6 indicates, the subsidy program highly favors urban households over rural households by a factor of three. The subsidies represent a 41 percent addition "in kind" to urban household incomes. As shown in Tables II-7 through 11, the subsidies are unevenly distributed among urban households. The higher income groups obtain a significantly larger share of the subsidy than the lower income groups. Based on a U.S. AID study, 38 percent of the total subsidy value in food and energy is available to the lowest fifty percent of the urban households and 62 percent to the highest fifty percent. Even within the lower income groups the subsidies tend to be least available to the lowest income households. Food subsidies have a more equal distribution among all income groups (particularly wheat, and sugar while fats, and meats favor the higher income groups).

Energy subsidies, particularly gasoline and electricity, favor the higher income groups, and only the kerosene subsidy is of significance to the lowest income groups.

Put another way, the top 21.2 percent of the urban population received in-kind subsidies valued at L.E. 736.8 million in 1979. This is larger than the total cash income of the lowest 34 percent of the urban population. (See Table II-5 for 1979 data.)

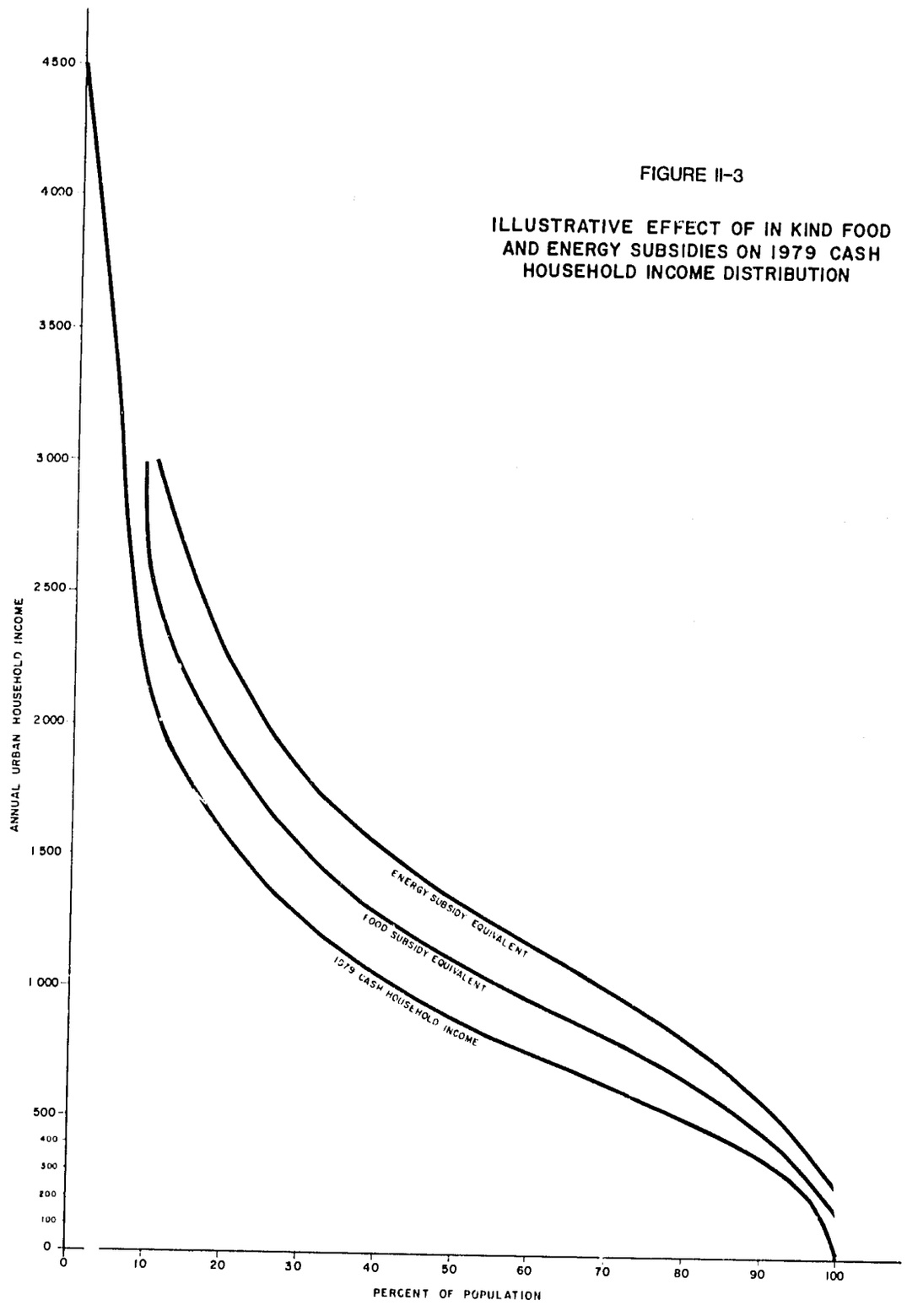


FIGURE II-3

ILLUSTRATIVE EFFECT OF IN KIND FOOD AND ENERGY SUBSIDIES ON 1979 CASH HOUSEHOLD INCOME DISTRIBUTION

Figure II-3 provides an illustrative effect of spreading the in-kind subsidies across the 1979 Household Cash Income Distribution Curve. The impact is considerable for all but the very lowest income groups in real terms.

For example, when the 1979 Urban Household Income Curve adjusted by in-kind food and energy subsidies is compared with the hypothetical 1990 urban household income distribution, it can be seen that if the subsidy element were removed there would be very little real income improvement for all income groups. This assumes that the value of removed subsidies would not be used for investments which would produce sizeable income increments. A household in 1979 with an annual cash income of L.E. 500 is assumed to receive in-kind subsidies valued at L.E. 260 for a total income of L.E. 760. This group will receive a cash income of L.E. 780 by the 1990 estimate.

The issue of housing subsidies is another large in-kind transfer of value to the relatively high number of households which either obtain subsidized dwelling units or subsidized loans. This point is discussed in the housing section of this report.

F. The Ownership of Capital Assets and Wealth

A particularly complex set of issues surrounds the question of wealth in the form of savings both in cash (either bank deposits or "under the tiles") and in semi-liquid form such as jewelry). It is believed by some observers that these savings are quite extensive, but no solid estimates exist.

Even in the case of worker remittances from abroad the data base is not particularly firm. AID estimated in July, 1980 that worker's remittances in 1979 amounted to US$ 2.2 billion or approximately L.E. 3.2 billion. AID pointed out that this estimate was based on the flow through "official channels" and therefore is probably underestimated. There are approximately 1.5 million Egyptians abroad (of course, all persons abroad are not workers), which would mean that the average Egyptian abroad is

865

862

TABLE II-7

SUMMARY PRESENTATION OF FOOD AND ENERGY SUBSIDIES CAPTURED BY SHARES OF THE URBAN POPULATION IN SELECTED HOUSEHOLD EXPENDITURE LEVELS (HEL) 1979

79 Est. Urban HEL (LE)	Urban Population in each HEL			Food Subsidy by HEL			Energy Subsidy by HEL			Total Food & Energy Subsidy by HEL		
	LE Mil.	%	Cum.%	LE Mil.	%	Cum.%	LE Mil.	%	Cum.%	LE Mil.	%	Cum.%
0-778	6.36	26.6	26.6	221.0	21.7	21.7	181.4	15.5	15.5	402.4	18.4	18.4
779-1,113	5.66	23.7	50.3	224.7	22.1	43.8	211.7	18.1	33.6	436.4	19.9	38.3
1,114-1,782	6.82	28.5	78.8	297.2	29.2	72.9	317.5	27.1	60.7	614.7	28.1	66.4
1,783+	5.11	21.2	100.0	276.0	27.1	100.0	460.8	39.3	100.0	736.8	33.6	100.0
Total*	23.95	100.0		1,018.9	100.0		1,717.3	100.0		2,190.2	100.0	

79 Est. Urban HEL (LE)	Per Capita Subsidies (LE/person)			Subsidy as a Share of Estimated Total Household Expenditures (%)			
	Food	Energy	Total	Household Exp. (L.E. Mil.)	Food	Energy	Total
0-778	34.8	28.5	63.2	775.4	28.5	23.4	51.9
779-1,113	39.5	37.4	77.1	881.0	25.5	24.0	49.5
1,114-1,782	43.6	46.6	90.1	1,472.5	20.0	21.6	41.7
1,783+	54.0	90.2	144.0	2,213.5	12.5	20.8	33.3
Total*	42.5	48.9	91.4	5,342.3	19.1	21.9	41.0

*Totals may not add due to rounding.

SOURCE: U.S. AID, Egypt's Food and Energy Subsidies.

TABLE II-8

SUMMARY DETAIL OF FOOD SUBSIDIES

DISTRIBUTION WITHIN SELECTED HOUSEHOLDS EXPENDITURE LEVELS (HEL) 1979

Est. 1979 Urban HEL (LE)	% Urban Pop. in each HEL		Total Food Subsidy		Of Which: A. Selected										B. Other	
					Total		Wheat		Fats		Sugar		Meat		Total	
	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %	%	Cum %
0-778	26.6	26.6	21.7	21.7	21.7	21.7	22.9	22.9	18.5	18.5	27.1	27.1	14.1	14.1	21.7	21.7
779-1,113	23.7	50.3	22.1	43.8	22.1	43.8	23.2	46.1	19.7	38.2	23.6	50.7	16.5	30.6	22.1	43.8
1,114-1,782	28.5	78.8	29.2	72.9	29.2	72.9	29.5	75.3	29.7	67.7	28.5	79.2	28.1	58.7	29.2	72.9
1,783+	21.2	100.0	27.1	100.0	27.1	100.0	24.7	100.0	32.3	100.0	20.8	100.0	41.3	100.0	27.1	100.0
Total*	100.0		100.0		100.0		100.0		100.0		100.0		100.0		100.0	

*Totals may not add due to rounding.

SOURCE: U.S. AID, Egypt's Food and Energy Subsidies.

remitting in excess of L.E. 2,100 per year. Furthermore the two largest job categories of workers abroad are construction workers and teachers. It can be concluded that much of the remittance money is benefiting a fairly wide range of households in Egypt.

The impact of remittances is significant, amounting to L.E. 460 per year for every household in Egypt. However, since the distribution is uneven, it makes it difficult to use household income data alone as a criterion for establishing the affordability of publicly-provided services and housing. One "low income" family may have savings which would allow it to pay much more for a public housing unit than another with the same income.

The enormous building activity in the informal sector (which is largely done with cash or with very short term credits) is undoubtedly substantially financed by remittance money.

Accumulation of other capital assets such as durable goods (cars, washing machines, TV's, furniture, etc.) is also financed largely from savings. The "Solid Waste Management Study"[2] showed fairly widespread ownership of durable goods by even low income groups. Though the sample was small (87 households in low income areas of the three Canal Cities) the results are interesting. Some 60 percent of the low income households owned radios; 41 percent television sets; 47 percent gas stoves; 28 percent washing machines; and 22 percent refrigerators.

FOOTNOTES

(Section E)

1 U.S. AID, Egypt Food and Energy Subsidies, p.4.

(Section F)

2 NORCONSULT and Sherif El Hakim and Associates, Solid Waste Management Study, February 1981.

TABLE II-9

SUMMARY DETAIL OF FOOD SUBSIDIES AS A SHARE OF ESTIMATED HOUSEHOLD EXPENDITURES 1979 (%)

Urban HEL (LE)	I. Urban Pop. Distrib. (%)	II. Household Expend. (LE/Mil.)	III. Total Food Sub. (A.1 & B) as % of II.	Of Which: A. Selected % 1. Total	2. Wheat	3. Fats	4. Sugar	5. Meat	B. Other % Total
0-778	26.6	775.4	28.5	24.5	17.5	4.7	1.5	0.8	4.0
779-1,113	23.7	881.0	25.5	22.0	15.5	4.5	1.2	0.8	3.5
1,114-1,782	28.5	1,472.5	20.2	17.4	11.7	4.0	0.9	0.8	2.8
1,783+	21.2	2,213.5	12.5	10.7	6.6	2.9	0.4	0.8	1.7
Total*	100.0	5,343.3	19.1	16.5	11.0	3.7	0.8	0.8	2.6

*Totals may not add due to rounding.

SOURCE: U.S. AID, Egypt's Food and Energy Subsidies.

TABLE II-10

SUMMARY DETAIL OF URBAN ENERGY SUBIDIES

DISTRIBUTION WITHIN SELECTED HOUSEHOLD EXPENDITURE LEVELS (HEL) 1979

Est. 1979 Urban HEL (LE)	% Urban Pop. in each HEL %	Cum %	Total Energy Subsidy %	Cum %	Of Which: A. Indirect Total %	Cum %	B. Direct 1. Total %	Cum %	2. Kerosene %	Cum %	3. Butagas %	Cum %	4. Electricity %	Cum %	5. Gasoline %	Cum. %
0-778	26.6	26.6	15.5	15.5	15.3	15.3	15.7	15.7	32.9	32.9	6.8	6.8	11.5	11.5	5.6	5.6
779-1,113	23.7	50.3	18.1	33.6	18.1	33.4	18.0	33.7	25.6	58.5	16.9	23.7	16.2	29.7	8.7	14.3
1,114-1,782	28.5	78.8	27.1	60.7	28.2	61.6	25.9	59.6	26.0	84.5	32.4	56.1	29.5	59.2	15.6	29.9
1,783+	21.2	100.0	39.3	100.0	38.4	100.0	40.4	100.0	15.4	100.0	43.9	100.0	40.8	100.0	70.0	100.0
Total*	100.0		100.0		100.0		100.0		100.0		100.0					

*Totals may not add due to rounding.

SOURCE: U.S. AID, Egypt's Food and Energy Subsidies.

TABLE II-11

SUMMARY DETAIL OF URBAN ENERGY SUBSIDIES AS A SHARE OF ESTIMATED HOUSEHOLD EXPENDITURE IN 1979 (%)

Est. 1979 Urban HEL (LE)	I. Urban Pop. Distrib. (%)	II. Household Expend. (LE/Mil.)	Total Urban Energy Sub. (A & B.1) as % of II. (%)	Of Which: A. Indirect Total (%)	B. Direct 1. Total	2. Kero.	3. Buta.	4. Elec.	5. Gaso.
0-778	26.6	775.4	23.4	11.9	11.5	6.9	0.7	2.9	0.9
779-1,113	23.7	881.0	22.0	12.4	11.6	4.7	1.6	4.1	1.2
1,114-1,782	28.5	1,472.5	21.6	11.6	10.0	2.9	1.8	4.0	1.3
1,783+	21.2	2,212.3	20.8	10.4	10.4	1.1	1.6	3.7	3.9
Total*	100.0	5,342.3	21.9	11.3	10.7	3.1	1.5	3.7	2.3

*Totals may not add due to rounding.

SOURCE: U.S. AID, Egypt's Food and Energy Subsidies.

III. INCOME TAX STRUCTURE AND RATES

Direct income taxation was first introduced in 1939 with a Schedular Income Tax imposed on direct income from: movable capital, industrial and commercial profits, wages and salaries, non-commercial professional income. In 1949, a Global Income Tax was introduced to tax all net income received, including income from property and other types of income. Other supplementary taxes were levied beginning in 1967 for defense and national security objectives.

A. The Schedular Income Tax

Three components of this tax are described below.

i) Tax on Income from Movable Capital:

This tax is assessed at a flat basic rate of 17% (withheld) plus the following additional taxes:

10.5%	Defense Tax
8.0%	National Security Tax
2.55%	Locational Government Tax
2.5%	Jihad Tax

The aggregate rate reaches 40.55 percent.

ii) Application:

Two kinds of income are subject to this tax:

- Income from negotiable securities, including income from shares, bonds, founder's shares and shares in limited partnerships, director's fees, attendance fees; redemption premiums paid to creditors, prizes drawn in lottery bonds paid to bondholders; and redemptions and repayments by companies on their shares of capital invested in limited partnerships prior to the dissolution winding up of a company or limited partnership.

TABLE III-1

WAGES AND SALARIES TAX SCHEDULE

Bracket (Taxable Income)		Bracket Rate
First L.E.	100	2%
next	150	3
next	150	4
next	150	5
next	200	7
next	300	9
next	300	11
next	500	13
next	1,000	15
next	2,000	18
excess over		22

SOURCE: Tax Department, Ministry of Finance.

TABLE III-2

TAX SCHEDULE FOR NON-COMMERCIAL PROFESSIONAL ACTIVITIES

Bracket Taxable Income		Total Taxable Income		Bracket Rate*	Basic Rate
First L.E.	1,500	L.E.	1,500	32%	11%
next	500		2,000	34%	13%
next	1,000		3,000	36%	15%
next	2,000		5,000	39%	18%
Over	5,000		5,000	43%	22%

* The bracket rate is equal to the "Basic Rate" plus flat rates of 10.5% (defense tax), 8% (national security tax), and 2.5% (Jihad). These flat rates total 21%. The Jihad tax, however, is not assessed if total non-commercial income is less than L.E. 500.

SOURCE: Tax Department, Ministry of Finance.

- Income from debts, deposits and guarantees, including interest on privileged mortgage and ordinary debts and all cash deposits and guarantees due to Egyptians or foreigners domiciled or resident in Egypt. Non-residents will also be liable to tax on interest from capital investment in Egypt.

iii) Exemptions:

Egyptian Government securities and certain types of Egyptian bonds are exempt from the tax. Repayments resulting from the sale of assets or by means of appropriations from funds other than those included in profit and loss account, from reserves or from funds shown in the balance sheet and certain total or partial redemptions of capital by companies which hold concessions from the State or other public concerns will also be exempt.

B. Taxes on Wages and Salaries

Taxes on wages and salaries are made on the following schedule: (See Table III-1)

i) Application:

The tax applies to wages, salaries, indemnities, emoluments, annuities and allowances in kind paid by State, local authorities, banks, companies and private individuals to Egyptian residents and to persons residing outside Egypt in respect to services performed in Egypt. Pensions are exempt from taxation.

ii) Deductions:

Deductions include pension and social security contributions, compulsory savings, health insurance premiums.

iii) Family Allowances:

Bachelor or married without children	L.E. 600
Married with children	L.E. 660

Workers paid a daily wage of not more than L.E. 2 are exempt, and they pay 1% tax if their wage exceeds L.E. 2 and 2% if it exceeds L.E. 3.

C. Tax on Income from Non-Commerical Professional Activities

Taxes on non-commercial professional activities are made on the following schedule: (See Table III-2)

i) Application:

This tax applies to income from non-commercial professional activities as well as other activities which are not subject to any other schedular tax.

ii) Exemptions:

Exemptions are provided for agricultural enterprises not constituted as a limited liability company, non-profit bodies and for persons working in professions and registered in their respective syndicates for the last three years.

iii) Family Allowances:

Tax payers of net annual income less than the L.E. 600 are exempted. If their net income exceeds L.E. 600, tax is levied on the difference between the L.E. 600 and L.E. 1200. The tax payer will benefit from each allowance if his net income exceeds L.E. 200.

D. The General Income Tax on Total Net Income

The General Income Tax Schedule on total net income is as follows: (See Table III-3)

i) Application:

Total annual income for the purpose of this tax is the aggregate annual income from all sources as computed for the four schedular taxes.

Certain deductions may be made from total annual income in order to arrive at taxable income:

a) Interest on loans.
b) Premium for life annuties and alimony.
c) Losses from a sale or closure of a.
d) Life insurance premium up to 10% of net total income or L.E. 400 whichever is less.
e) All other direct taxes paid during previous years.

TABLE III-3

GENERAL INCOME TAX SCHEDULE ON TOTAL NET INCOME

Bracket	Income Bracket		Bracket Rate
1st	L.E.	0-1,200	exempt
2nd	Over L.E.	1,200-2,000	8%
3rd	" "	2,000-3,000	9%
4th	" "	3,000-4,000	10%
5th	" "	4,000-5,000	11%
6th	" "	5,000-6,000	12%
7th	" "	6,000-7,000	15%
8th	" "	7,000-8,000	20%
9th	" "	8,000-9,000	25%
10th	" "	9,000-10,000	30%
11th	" "	10,000-15,000	35%
12th	" "	15,000-20,000	40%
13th	" "	20,000-30,000	45%
14th	" "	30,000-40,000	50%
15th	" "	40,000-50,000	55%
16th	" "	50,000-60,000	60%
17th	" "	60,000-70,000	65%
18th	" "	70,000-100,000	70%
19th	" "	100,000	

SOURCE: Tax Department, Ministry of Finance.

f) Gifts and donations to the State are also deductible up to 3% of net income.

ii) Allowances:

An allowance of L.E. 75 for wife and dependent children (maximum 4) is deductible where the tax payer's income does not exceed L.E. 3000.

iii) Exemptions:

Members of the diplomatic and consular missions are exempt from the tax, and foreign experts and technicians are also exempt in respect of their foreign source of income.

Individuals whose total income does not exceed L.E. 1,200 are exempt from the tax as well.

E. Actual Performance, 1974-1979

Revenues from income tax seems to be very low, only amounting to 25 percent of total tax revenues on an average basis for the six-year period 1974-1979. (See Table III-4)

TABLE III-4

TAX REVENUE

(L.E. Million)

	1974	1975	1976	1977	1978	1979
Total Tax Revenue	749	1,040	1,341	1,990	2,176	2,584
1. Indirect Taxes	552	784	996	1,530	1,563	1,841
2. Direct Taxes	197	256	345	460	613	743
2.1 Personal income taxes	33	31	48	55	52	55
2.2 Business income taxes	143	195	278	387	538	659
2.3 Other	21	30	19	18	23	29
% of income taxes (2.1 + 2.2) to total taxes	23.4	21.7	24.4	22.2	26.6	27.6

SOURCE: Ministry of Finance.

Direct taxes have been about six percent of GDP during 1978 and 1979, while indirect taxes are about 15 percent. The bulk of revenue comes from the business profits tax. The share of business profits tax in GDP and in total government revenue has increased very rapidly, from 3.3 percent of GDP in 1974 to 5.4 percent in 1979. This increase was due to the rapid growth of profits from the petroleum sector and the Suez Canal especially during 1978 and 1979. In both cases, the share of taxable profits to total value added is very high and there are no collection problems. (See Table III-5)

Table III-5 also points out that the contribution of the personal income tax as a component of GDP is rather insignificant. First, its share in GDP has remained stable if not declining. In absolute terms (See Table III-6), the personal income tax revenue has been increasing since 1974 at a compound annual rate of 10.7 percent, while the compound increase in the business profits tax reached 35.7 percent a year.

TABLE III-5

GOVERNMENT TAX REVENUES (1974-1979)

(PERCENT OF GDP)

	1974	1975	1976	1977	1978	1979
Indirect Taxes	12.7	15.0	14.8	18.5	16.2	14.8
Excise duties & price differentials	4.5	4.4	4.2	4.1	3.8	4.5
Foreign trade taxes	5.3	7.7	8.0	11.8	9.5	7.3
Local government collections	1.5	1.8	1.3	1.3	1.5	1.3
Other indirect taxes	1.4	1.1	1.3	1.3	1.4	1.7
Direct Taxes	4.6	4.9	5.1	5.6	6.3	6.0
Business profit tax	3.3	3.7	4.1	4.7	5.6	5.4
(Petrol & Suez)	(0.5)	(0.8)	(1.4)	(1.6)	(2.2)	(2.4)
Personal income tax	0.8	0.6	0.7	0.6	0.5	0.4
Property taxes	0.5	0.6	0.3	0.3	0.2	0.2

SOURCE: Tax Department, Ministry of Finance.

TABLE III-6

INCOME TAX REVENUES, 1974-1979 (In Million L.E.)

	1974			1975			1976			1977			1978			1979		
	Public	Priv.	Total	Public	Priv.	Total	Public	Priv.	Total	Public	Priv.	Total	Public	Priv.	Total	Public	Priv.	Total
Commercial & Industrial Profit Tax	53.7	11.5	65.2	91.7	20.8	112.5	121	27.1	148.1	170.4	31.0	201.4	233.2	42.0	275.3	319.3	89.2	408.5
Tax on Income from Movable Capital	58.7	3.2	61.9	59.6	1.2	60.2	71.4	39.3	110.3	71.9	132.2	193.2	193.2	14.6	207.9	123.1	68.0	191.1
Tax on Non-Commercial Professions	--	1.9	1.9		2.3	2.3	-	3.1	3.1	-	4.3	4.3		5.7	5.6	--	8.1	8.1
Tax on Wages & Salaries	-	29.0	29.0		26.9	26.9	-	41.7	41.7		46.1	46.1	--	39.0	39.0		39.2	39.2
General Income Tax	--	1.8	1.8	-	1.8	1.8	-	2.8	2.8		4.4	4.4	-	7.0	7.0	-	7.2	7.2
TOTAL	112.4	47.4	159.8	151.3	53.0	204.3	192.4	95.6	287.0	280.7	107.7	388.4	426.4	108.3	534.7	442.4	211.7	654.1

SOURCE: Tax Department, Ministry of Finance.

TABLE III-7

NUMBER OF TAXPAYERS FROM 1973 THROUGH 1979

YEAR	Commercial Profits Tax (L.E.) A over 1,000	B 1,000-500	C 500-250	D Exempt	TOTAL	LIBERAL PROFESSIONS TAX	GENERAL INCOME TAX
1974	37,126	55,688	286,756	309,961	686,561	44,948	45,830
1975	35,920	50,964	240,017	359,815	681,116	43,478	67,322
1976	38,131	56,580	291,679	317,451	753,841	51,105	75,764
1977	53,901	77,550	375,081	394,011	870,542	91,117	86,107
1978	24,356	63,600	112,179	728,890	933,395	64,024	107,046
1979	28,430	93,158	333,810	604,565	1,010,009	62,150	124,869

SOURCE: Tax Department, Ministry of Finance.

TABLE III-8

LAGGING BALANCE (ARREARS) ON JANUARY 12, 1980

TYPE OF TAX	PRIVATE SECTOR			PUBLIC SECTOR			TOTAL BALANCE
	Can Be Collected	Cannot Be Collected	Balance	Can Be Collected	Cannot Be Collected	Balance	
Tax on Dividends Movable Property	1,324,640	93,462	1,418,107	146,248,251	--	146,248,251	147,666,358
Debt Interests Tax	397,148	77,758	474,906	--	--	--	474,906
Commercial & Industrial Profits Tax	87,623,947	21,461,082	109,085,029	8,592,916	--	8,592,916	117,677,945
Liberal Professions	4,200,517	71,171	4,901,688	--	--	--	4,901,688
General Income Tax	32,008,435	2,595,388	34,603,823	--	--	--	34,603,823
Tax on Wages & Salaries	1,326,922	280,496	1,607,418	--		--	1,607,418
Stamp Duties	1,210,424	701,552	1,911,976	24,096,011		24,096,011	26,007,987
Inheritance	9,781,173	147,179	9,928,352	--	--	--	9,928,352
Additional Taxes	47,813	--	47,813	--	--	--	47,813
TOTAL	137,921,019*	26,058,093	163,979,112	178,937,178	--	178,937,178	342,916,290

* Private arrears are scheduled to be collected in the following manner: L.E. 33,152,667 to be paid on installment; L.E. 104,768,352 to be paid in cash.

SOURCE: Tax Department, Ministry of Finance.

Revenues from the tax on wages and salaries have dropped as a result of increased family allowances which took place in 1978. (See Table III-6) This downward trend can be expected to continue if the allowance rate is pegged to the inflation rate as proposed in the new income tax law.

The number of general income tax payers increased from 86,107 in 1977 to 107,046 in 1978 and to 124,869 in 1979. (Table III-7)

F. Collections and Arrears

According to the system of assessment and collection of the income tax, the taxpayer should pay the tax based on his declared income and the Tax Department assesses the tax after reviewing the taxpayers declared income within a period of five years after which any tax differences need not be paid by the taxpayer (statute limitation).

The lagging tax collections (arrears) are striking. The balance of the arrears reached L.E. 342.9 million on December 1, 1980. (Table III-8) The bulk of the balance falls within the tax on income from Movable Capital as well as the tax on Commercial and Industrial Profits.

Arrears of the General Income tax is also significant, L.E. 34.6 million amounts to about 5 times of the tax collected in 1979.

On the whole, income tax evasion is very common. An official in the Tax Department estimates that over 75 percent of the tax payers reporting underestimate their taxable income, and as much as 33 percent of the tax payers do not declare their income at all.

IV. NUPS TARGET GROUP IDENTIFICATION

A. Introduction

"Target Group" is a term designed to denote a specific identifiable group of the population for which a particular action program can be designed by Government to achieve explicit objectives.

For example, "adult literacy programs" as the title implies are designed for a specific target group of the population, i.e. persons beyond normal school age who are presently illiterate. It would not be expected that persons who are already literate would be interested in participating in the program nor, of course, would the government be interested in spending program funds to provide such training which would be redundant to the already literate and therefore provide no return on the government investment.

In a case-by-case situation, the identification of target groups can be quite simple, but when an integrated program or policy is being developed, the problem of target group identification becomes more complex.

A national housing policy, for instance, will consist of a bundle of discrete but related program actions (a variety of physical housing solutions, a mixture of housing finance programs, related roles for the public and private sectors etc.) designed to cover the entire urban and sometimes rural population. There cannot be a "custom" solution for each household at any tolerable cost. Therefore, the population must be grouped into target groups and a specific program response designed for each of a limited number of target groups. If the national program does not offer a broad enough mix of program actions, some percentage of the population will not be able to receive any benefit. For example, if the cost to households with or without subsidies, is beyond their ability to pay or if the cost of government per household of a program is too high to provide the program service to all the population for whom it was intended.

It is, therefore, important for policy and program planners to consider the target group and their particular characteristics when designing their projects. The failure to match the program content with the target group will lead to a misuse of scarce capital resources and generate inadequate benefit to the population.

B. Target Group Identification for National Urban Policy

The need for target group identification is particularly important in the design of a national urban policy. Fundamentally the national urban policy is concerned with:

i) The spatial location of the urban population across the nation.

ii) The provision of jobs, infrastructure, services, and housing to the population at appropriate standards and affordable costs.

iii) The protection of arable land for food security purposes.

iv) The accomplishment of the above at a sustained rate to the year 2000 and beyond.

This requires the integration of public and private investment of limited capital, direct and indirect development controls, and public management and administration. The key is the formation of target groups as the focus of public action which will be responsive to the desired policy.

A national urban policy is complex, and one target group classification will not be appropriate in all situations. Nonetheless, a broad typology can be built around the critical concepts of physical and economic mobility.

1. Physical Mobility

Physical mobility of households is one critical variable affecting the spatial allocation of population in Egypt. Obviously, if no one were willing to move from their present location there would be no point in attempting to influence locational choice through a national urban policy. This is not the case in Egypt, however, where movement is a widespread national phenomenon. There are four types of migration which can be considered:

i) Rural to urban migration

ii) Urban to urban migration

iii) Intra-urban migration within an urban area

iv) International migration

These types of migration need to be considered in a national urban policy so that a desirable pattern of migration develops which contributes to the achievement of the desired spatial allocation of the population in Egypt.

2. Economic Mobility

The second major consideration in target group formation is the economic mobility of the population. Economic mobility is, of course, a key factor in physical mobility as opportunity for a better job is a prime motivator in the migration process.

There are four types of economic mobility to be considered:

i) Target groups which are not upwardly mobile because they have already achieved a high economic position.

ii) Already economically mobile target groups which are in the process of improving their status.

iii) Potentially mobile groups which could improve their economic situation under the proper stimulus.

iv) Fundamentally disadvantaged groups which cannot improve their economic situation without major outside stimulus over a prolonged period of time.

C. Household Characteristics Affecting Target Group Formation

Physical and economic mobility are related to the characteristics of households in their present situations. Action programming for a target group therefore must relate to these characteristics in a way which stimulates the desired response from the household. There are six major household characteristics to be considered. All six interact to influence the household's potential for physical and economic mobility.

1. Household Income

Household income is a factor of earned income from labor or from income generated from the utilization of capital assets (see below).

Households enjoying a high income or expecting to achieve a satisfactory income in their present situation in relation to their other characteristics discussed below are not likely to be physically mobile. This does not mean a household member might not relocate temporarily in another urban area. For example, a senior government officer might be transferred to another city, but is not likely to make it a permanent home.

Fundamentally disadvantaged households which usually have extremely low incomes are typically not mobile or, if in desperation they are forced to migrate, they are of little economic value in their new location.

Therefore, it is the wide middle range of income groups which are potentially both physically and economically mobile. Their mobility is in turn influenced by other factors operating in the household.

2. Ownership of Capital Assets

Household capital assets include durable goods (furniture, TV's, refrigerators, automobiles, etc.) which are transportable and therefore less important in a physical mobility decision. Other capital assets, however, effect both economic and physical mobility of households. Among these are savings, land, housing, and businesses. Households without capital assets and with other appropriate characteristics are more likely to be physically mobile than those with such assets. However, under given circumstances the possession of capital assets need not be a deterrent to physical mobility and can even be a catalyst.

i) Savings:

Household savings in the form of cash or bank deposits are difficult to measure in Egypt. The foreign worker remittances are a major factor influencing investment in housing and business in Egypt. Households with savings to invest are likely to be economically mobile and potentially physically mobile.

ii) Land and Housing (Urban and Rural):

Land ownership is a major objective of Egyptians. Households with potential to own land are candidates for physical mobility. Households already owning rural land which they currently farm have three choices: 1) to continue to farm the land, 2) to build on the land themselves to generate rental income, or 3) to sell the land to others (for farming or for non-agricultural use). It is of course government policy to discourage the conversion of arable land to non-agricultural use, but a combination of factors make this policy difficult to enforce at present. In addition, in the short-term, rural land ownership offers little potential for economic upward mobility itself.

If income from the land is unsatisfactory, households will seek to improve their income through migration of family members or through the sale of their land for reinvestment in more productive assets (which also stimulates physical mobility).

Ownership of urban land, on the other hand, is more likely to reduce the potential of a household's physical mobility in part because continued increases in land value provide potential economic upward mobility. This is particularly true if the land can be put to its highest use (often difficult because of rent control). It should be noted that sitting tenants with very low rents are also relatively immobile. Conversely, individuals and households without land or housing are potentially more physically mobile.

It should be mentioned that upper income persons with housing are likely to keep that housing even if transferred to another location. Such a household is likely to split its occupancy between the two locations, particularly because of lack of incentive to rent the orginal unit because of rent control.

iii) Businesses:

The ownership of a business, whether a service or an industrial enterprise, automatically makes the household potentially economically mobile. The owners of businesses and potential owners are a critical target group for national urban policy because they generate economic activity and employment. All types of businesses deserve consideration in a national urban policy from the very small operations to the large domestic and international firms. Small household-owned and operated businesses will be influenced in terms of physical mobility in a variety of ways. If the business is already successful and growing at the owner's expectation, it is unlikely that they will move from their present location. More likely, a family member would be designated to start a similar business in a new location while

maintaining the present business. The critical interdependence of small scale business in Egypt makes this a more difficult choice as frequently many small businesses, closely related to each other, must be clustered together for their own survival.

3. Job Skills and Education

The mix of job skills and education within the household is important in determining economic mobility. Among upper income groups there has been a tendency for educated women to enter the labor force. Managerial, professional and high government jobs confer "class status" as important or more so than the higher incomes. These job classifications are largely concentrated in Cairo and except for temporary transfers are not very physically mobile.

Education at the university level has been the key to upward social and to some extent economic mobility. It is therefore a key objective of all households for their children and is a major motivating force for physical mobility; first to go to the university itself and next to stay in an urban center to enjoy the rewards of the education.

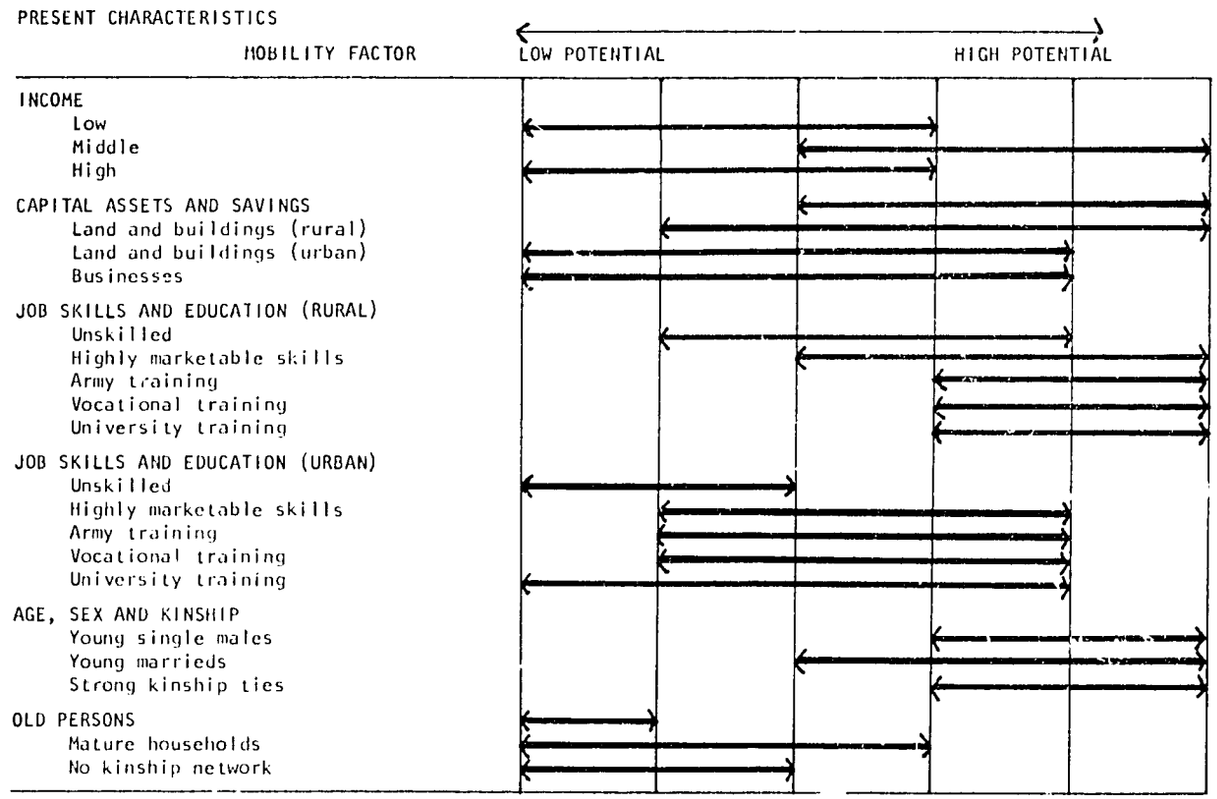
The Army can also be considered in this sense a part of the "educational" system for rural and lower income groups since many receive training in marketable skills which will also contribute to their potential economic and physical mobility.

Migrants tend to be better educated than non-migrants. People with readily marketable job skills are also potentially physically mobile, but many without such education or job skills also migrate.

The creation of formal sector jobs alone may not generate the kind of permanent migration needed to achieve national urban policy objectives. Industrial workers, for example may be from households with a variety of informal sector job holders as well. Older children may be working, wives may be working, or the industrial worker himself may be holding more than one job. The creation of a better job opportunity or a transfer of his job to another physical location may not justify moving his family. He may endure a long commute to the job in order to maintain his present location or he may go but not bring along his family. To make the decision to migrate as a family the new location would have to provide increased benefit for the family in the aggregate.

FIGURE IV-1

SUMMARY OF ECONOMIC AND PHYSICAL MOBILITY POTENTIAL RELATED TO HOUSEHOLD CHARACTERISTICS



SOURCE: Wheaton, William C.

4. Age, Sex, and Kinship Ties

Young males with strong family or kinship ties are most likely to be potentially economically and physically mobile. Young women will tend to follow husbands or fathers but not be physically mobile as individuals, except to go to universities. Any program to induce physical mobility must be designed to attract the young and young married families (before children have grown to the point that they are economically active). The future location of these physically mobile persons will be strongly influenced by family, kinship, or regional ties in the new location.

Older persons and pensioners are less likely to be physically and economically mobile.

D. Summary of Target Group Characteristics

Table IV-1 indicates the relationships between the household characteristics and economic and physical mobility. There is no way to refine this generalized indication without substantial additional research.

The general characteristics of the most potentially physically mobile group for permanent settlement would include:

i) Young adult males or young married couples with and without infant children.

ii) Persons with job skill training obtained from the army, vocational classes, or university.

iii) Persons with some family or regional ties in the future settlement.

The general characteristics of the least potentially physical mobile group for permanent settlement would include:

i) Old persons and mature families with multiple incomes.

ii) Households holding significant capital assets which they cannot or wish not to convert to cash savings.

iii) Households without kinship or family ties outside of their current place of residence.

iv) Upper income and upper class persons with no perceived economic gain from migration on a permanent basis.

v) Lowest income persons without requisite job skills.

Obviously such a crude profile is not precise or even mutually exclusive, but it does suggest a general policy focus if the behaviour of these target groups is to be influenced by government action. Target groups and subgroups can be related to generalized types of actions to be recommended by the national urban policy.

YOUNG MARRIEDS ARE GENERALLY MORE MOBILE

V. 1976 HOUSING CENSUS DATA

The housing condition in Egypt is frequently described as seriously deterioriated. However, careful review of census statistics reveals that, although the situation is far from good, remarkable strides have been made in urban housing conditions in spite of the apparent problems. The improvements of housing conditions have occurred largely as the result of private sector activities, much of it without official sanction. Thus, much of the increased activity in housing bears the stigma of being informal or illegal.

A. Housing Stock

The housing stock in urban areas consist of a wide variety of building types. These range from traditional mud and red brick buildings built around interior courts to multi-storey concrete frame structures containing a large number of modern apartments serviced by banks of elevators. More typically, however, the bulk of the housing stock is comprised of rooms and flats located in one and two storey buildings (the average number of floors per building is 1.85)[1] and having an average of 2.36 dwelling units per building.

Egypt's total building stock in 1976 was 5.4 million buildings of which 1.5 million were used for residential purposes in urban areas. These residential buildings contained a total of 3.6 million dwelling units (rooms and flats combined).[2] This represented a total increase of dwelling units since the 1966 census of almost 1.2 million units. or an annual average growth rate in dwelling units of 3.8 percent. This average annual rate of growth in dwelling units indicates that construction of housing more than kept pace with the increase in urban population over the period (urban average rate of population growth between 1966 and 1976 was 2.9 percent). (Table V-1)

Two major exceptions to dwelling unit annual growth outstripping annual population growth occurred in Giza and Beheira governorates where, due to very high growth rates in the populations of some settlements (notably Giza City in Greater Cairo, and Kafr El Dawar and Damanhour in Beheira), additions to housing stock fell behind population growth rates. In the two largest urban settlements, Cairo Governorate and Alexandria, the growth rates of new dwelling units exceeded population growth rates. (Table V-2)

B. Housing Conditions

Since the census did not enumerate the housing stock according to its age or condition, only general assessments can be made about the stock. While the rate of construction would appear to have accommodated new population growth, other indicators of housing conditions such as room occupancy rates, access to infrastructure and the age of the stock suggest that there were modest improvements in the condition of the stock, but that serious problems may still exist. Between 1960 and 1976 there was a small reduction in the number of persons per room of 1.9 to 1.8 persons per room. (Table V-3) Furthermore, this improvement in occupancy

TABLE V-1
URBAN HOUSING DATA BY GOVERNORATE (1966-1976)

GOVERNORATE	(1) URBAN POPULATION 1976	(2) URBAN POPULATION GROWTH RATE (1966-1976) (%)	(3) TOTAL NO. OF RESIDENTIAL BUILDINGS (1976)	(4) TOTAL NUMBER OF DWELLING UNITS (1960)	(5) TOTAL NUMBER OF DWELLING UNITS (1976)	(6) AVERAGE ANNUAL GROWTH RATE (%)	(7) AVERAGE NUMBER OF FLOORS/ BUILDING (1976)	(8) AVERAGE NO. OF DWELLINGS/ BUILDING (1976)	(9) RATE AT WHICH GROWTH IN DWELLING UNITS EXCEEDS POPULATION GROWTH RATES (6-2)
Cairo	5,084,463	1.88	273,666	782,254	1,140,216	3.8	2.42	4.17	1.9
Alexandria	2,318,700	2.56	138,815	323,722	477,262	4.0	2.32	3.44	1.4
Port Said	262,600	-0.74	14,060	51,136	51,474	0.1	2.37	3.66	0.8
Suez	194,000	-3.04	19,645	52,464	50,877	-0.3	1.81	2.59	-2.8
Damietta	142,815	2.20	21,144	52,464	38,156	3.2	1.87	1.81	1.0
Dakahlia	655,272	3.40	75,464	89,616	145,719	5.0	1.75	1.93	1.6
Sharkia	530,354	3.20	70,836	72,847	111,748	4.4	1.66	1.58	1.2
Qalyubia	681,586	6.02	68,560	72,719	149,745	7.5	1.60	2.18	1.5
Kafr El Sheikh	291,859	3.20	39,467	42,051	63,766	4.3	1.51	1.62	1.1
Gharbia	766,337	2.50	84,911	105,831	168,142	4.7	1.82	1.98	2.2
Menoufia	336,691	3.50	52,765	50,597	79,477	4.6	1.42	1.56	1.1
Beheira	653,458	6.30	72,686	83,058	119,860	3.7	1.47	0.17	-2.6
Ismailia	174,184	-0.46	21,547	33,975	44,855	2.8	1.49	2.08	3.3
Giza	1,379,277	7.90	112,646	173,086	337,888	6.9	1.98	3.00	-1.0
Beni Suef	276,193	2.70	43,735	45,173	70,350	4.5	1.52	1.61	1.8
El Fayoum	276,428	3.30	43,877	43,919	66,896	4.3	1.49	1.53	1.0
Minia	430,830	2.40	63,068	76,085	108,007	3.6	1.51	1.71	1.2
Assiut	470,032	3.40	66,618	62,626	98,064	4.6	1.74	1.47	1.2
Sohag	396,867	1.90	51,289	73,812	86,420	1.6	1.70	1.69	-0.3
Qena	391,052	0.30	72,275	71,574	96,918	3.1	1.47	1.34	2.8
Aswan	229,657	2.30	43,010	43,248	52,258	1.9	1.19	1.22	-0.4
Red Sea	47,948	9.56	9,270	8,934	4,806	6.4	1.08	0.96	-3.2
New Valley	34,407	5.30	5,367	8,271	4,507	6.3	1.63	1.54	1.0
Matruh	51,036	6.60	9,277	1,309	4,517	9.6	1.18	1.22	3.0
Sinai	10,104	-15.74	930	--	--	--	--	--	N.A.
TOTAL	16,086,150	2.90	1,474,091	2,391,424	3,478,738	3.8	1.85	2.36	0.9

SOURCE: 1976 Census, CAPMAS and 1966 Census (CAPMAS).

TABLE V-2
HOUSING IN MAJOR SETTLEMENTS

SETTLEMENT	AREA OF SETTLEMENT (Sq. Km)	NO. OF BUILDINGS	NO. OF DWELLING UNITS	OWNERSHIP OF BUILDINGS				TYPE OF USE		
				GOVERNMENT	PUBLIC	PRIVATE COOPERATIVE	OTHERS	RESIDENTIAL	WORK	COMBINED
Cairo	214.2	273,666	1,140,216	13,612	3,365	272,455	575	247,475	24,958	7,698
Giza	76.7	88,452	306,215	1,894	295	91,359	153	84,898	657	1,402
Shoubra El Kheima	29.6	33,239	87,957	215	619	32,793	12	30,394	2,102	743
Alexandria	192.9	138,815	477,262	6,894	2,089	139,022	625	126,774	16,096	1,869
Damietta	11.0	9,434	22,703	294	112	9,837	-	8,116	1,407	214
Mansoura	24.8	24,455	59,070	537	72	25,878	5	22,622	2,391	306
Belkas	3.7	7,060	10,361	84	12	7,329	--	6,939	345	73
Mit Ghamr	5.1	8,201	17,938	220	38	8,643	--	7,670	585	88
Zagazig	7.9	19,923	46,062	491	43	20,749	36	18,683	1,481	347
Abu Kebir	1.8	8,810	9,951	110	11	9,509	--	8,308	550	153
Belbeis	4.9	9,512	14,659	189	21	9,814	--	8,846	695	47
Benha	11.2	9,066	19,125	405	63	9,037	--	8,251	954	151
Qalyub	6.6	8,346	10,548	160	8	8,538	2	7,687	565	220
Kafr El Sheikh	8.8	8,346	16,344	776	61	8,101		7,528	938	41
Desouk	5.4	7,250	15,553	169	26	7,694		6,659	723	136
Tanta	8.8	27,582	62,556	947	89	28,830	15	25,043	3,217	542
Mahalla El Kubra	19.2	30,285	66,183	410	905	29,876	6	27,556	1,968	863
Zefta	7.8	6,824	11,251	168	24	7,175	1	2,329	478	91
Kafr El Zayat	13.5	5,332	10,789	1[illegible]	88	5,464	2	4,529	474	399
Shebin El Kom	6.6	13,192	26,876	366	118	13,823		12,078	1,064	354
Menouf	4.6	8,660	12,558	145	33	8,985		6,329	478	91
Damanhour	4.7	15,576	37,391	818	64	15,465		13,843	1,978	318
Edku	238.0	7,164	8,202	912	1	7,030		7,082	521	61
Kafr El Dawar	5.6	15,871	30,909	164	1,865	14,029		15,020	725	189
Ismailia	14.3	16,132	38,874	3,302	336	14,025	154	14,648	1,857	168
Suez	87.9	19,645	50,877	3,856	1,889	17,517	44	18,147	2,751	321
Port Said	72.1	14,060	51,474	5,916	1,494	10,648	172	14,426	2,916	356
Beni Suef	10.0	15,564	31,279	424	41	16,026		14,813	1,075	195
El Fayoum	12.8	22,895	43,946	522	45	23,512	6	20,914	1,972	316
Minia	11.0	16,186	35,800	1,303	454	14,839	4	14,802	1,144	437
Mallawi	3.9	11,593	78,704	196	26	11,638		10,975	625	122
Assiut	9.6	22,534	43,332	874	44	24,167	14	20,640	2,267	509
Sohag	3.9	10,643	21,976	372	40	10,803	1	9,664	966	147
Ekhmim	3.1	9,090	9,945	53	1	9,402		8,378	546	180
Girga	3.9	7,167	11,164	81	16	7,138		6,223	929	51
Qena	18.9	15,470	23,244	1,720	59	15,557	--	14,380	1,474	156
Naga Hamadi	3.5	2,638	4,497	185	81	2,607		2,358	257	39
Luxor	7.4	17,827	21,604	262	31	19,393		16,977	1,677	73
Hurgada										
Safaga										
Kharga										
Ras Gharib	N/A									
El Arish										
El Tor										
Marsah										
Aswan	15.1	26,528	33,015	2,652	750	24,456	5	24,666	2,189	185

SOURCE: Census of Buildings and Dwelling Units in the Urban Towns, 1976, CAPMAS.

might be drastically reduced if more data about the age and physical condition of the stock were available.

The second major classification of the condition of dwelling units by the census is according to whether the unit consists of a single room or several rooms (an apartment). The definition of single room by the census includes single room dwellings in different types of structures, roof dwellings, dwellings in tombs and grave houses and other temporary structures. As such, the definition is a broad category and includes dwellings which are both structurally sound as well as deficient. Due to problems with this census definition, the reduction in the proportion of the total dwelling units that are separate rooms from 36.3 percent in 1964 to 20.5 percent in 1976 (Table V-4) can with some caution be viewed as an improvement in the condition of the stock.[3]

Access to infrastructure is a third measurement of quality of housing stock which would indicate that some improvement in the condition of the housing stock has occurred over the period 1960 to 1976. For example, during the period buildings having access to sewerage increased from 21 percent to 29 percent nationwide, while those served by electricity dramatically increased from 37 percent to 62 percent.[4]

Tables V-5 and 6 show buildings connected to water, sewerage and electricity in 1976, while Table V-7 provides more detailed data about housing statistics by major urban settlement in 1976. As is shown in Table V-6, the census provides data on households having dwellings connected to water and electricity only.

Quantitatively, at least, the census data would seem to indicate that there is no deficit nationwide in the housing stock, since in cities having 1976 populations greater than 50,000 there was 1.03 dwelling units per urban household. Furthermore, in all urban areas there was a vacancy rate of 3.4 percent which consisted of 3.0 percent of the apartments and 4.8 percent of the separate rooms.

TABLE V-3
AVERAGE URBAN HOUSEHOLD SIZE, NUMBER OF PERSONS PER ROOM, 1960 AND 1976

GOVERNORATE	Average Size of Household		AVERAGE NO. OF ROOMS PER HOUSEHOLD	AVERAGE NUMBER OF PERSONS PER ROOM	
	1960	1976	1976	1960	1976
Cairo	4.8	4.8	2.5	2.3	1.9
Alexandria	5.0	4.9	2.5	2.0	1.9
Port Said	5.2	5.0	2.3	1.2	2.1
Suez	5.0	4.8	2.7	1.2	1.8
Total of Urban Governorates	4.9	4.8	2.5	2.1	1.9
Damietta	5.4	5.3	3.0	2.2	1.7
Dakahlia	5.4	5.6	3.2	1.8	1.7
Sharkia	5.2	5.6	3.8	1.5	1.5
Qalyubia	5.0	5.3	2.9	2.0	1.8
Kafrel Sheikh	5.8	6.1	3.4	1.8	1.8
Gharbia	5.1	5.4	3.0	1.8	1.8
Menoufia	5.0	5.5	3.2	1.7	1.7
Beheira	5.6	6.3	2.9	2.2	2.2
Ismailia	5.3	5.2	2.9	1.2	1.8
Total of Lower Egypt Governorates	5.3	5.6	3.1	1.8	1.8
Giza	4.8	5.0	2.8	2.0	1.8
Beni Suef	4.3	4.8	2.9	1.6	1.7
El Fayoum	4.5	5.2	3.0	1.8	1.7
Minia	4.5	5.0	3.0	1.8	1.6
Assiut	4.9	5.3	2.7	2.1	2.0
Sohag	5.1	5.2	2.3	2.5	2.3
Qena	4.7	5.0	2.4	2.5	2.1
Aswan	4.4	4.7	3.0	1.5	1.6
Total of Upper Egypt Governorates	4.7	5.0	2.7	2.0	1.8
Total of Remote Area Governorates	--	5.9	3.0	--	1.9
Total	5.0	5.2	2.8	1.9	1.8

Sources: CAPMAS
The General Population and Housing Census, 1976, the Preliminary Results (March 1977).

TABLE V-4
RESIDENTIAL DWELLING UNITS AND VACANCY RATE, URBAN AREAS 1976

	RESIDENTIAL DWELLING UNITS FOR HOUSING, HOUSING AND WORK OR VACANT			VACANCY RATE (IN %)			
					SEPARATE		
	APARTMENT	SEPARATE ROOM	TOTAL	APARTMENT	ROOM	TOTAL	SEPARATE ROOMS AS % OF TOTAL
Cairo	802,331	313,854	1,116,185	4.4	6.0	4.9	28.1
Alexandria	348,563	122,400	470,963	4.9	5.2	5.0	30.0
Port Said	45,447	5,289	50.736	1.0	5.8	1.5	10.4
Suez	40,868	9,455	50,323	5.4	5.8	5.5	18.8
Urban Governorates	1,237,209	450,998	1,688,207	4.5	5.8	4.8	26.7
Damietta	36,002	1,527	37,529	1.7	20.7	2.5	4.1
Dakahlia	137,024	7,037	144,061	2.4	4.3	2.5	4.9
Sharkia	102,812	6,919	109,731	1.8	5.3	2.1	6.3
Qalyubia	112,274	35,941	148,215	1.2	1.4	1.3	24.2
Kafr El Sheikh	54,226	8,454	62,680	1.9	5.8	2.5	13.5
Gharbia	146,213	18,648	164,861	2.5	5.2	2.9	11.3
Menoufia	60,422	18,158	78,580	2.3	1.5	2.0	23.1
Beheira	102,351	15,990	118,341	2.1	2.5	2.2	13.5
Ishmilia	29,642	14,780	44,422	2.1	2.1	2.1	33.3
Lower Egypt	780,966	127,454	908,420	2.1	2.4	2.2	14.0
Giza	265,382	68,068	333,450	2.1	0.8	1.9	20.4
Beni Suef	63,098	6,013	69,111	0.9	1.6	1.0	8.7
El Fayoum	52,002	14,013	66,015	2.1	2.6	2.2	21.2
Minia	80,188	26,270	106,458	0.9	1.5	1.1	24.7
Assiut	91,793	4,773	96,566	1.2	23.8	2.4	4.9
Sohag	80,031	4,304	84,335	2.6	15.4	3.3	5.1
Qena	88,376	6,423	94,799	1.1	3.2	1.2	6.8
Aswan	50,717	1,035	51,752	3.1	20.9	1.7	2.0
Upper Egypt	771,587	130,899	902,486	1.7	2.8	1.8	14.5
Rea Sea	8,637	122	8,759	2.8	14.4	3.0	1.4
Wadi El Gedid	7,552	639	8,191	0.8	8.9	1.4	7.8
Matruh	8,665	1,853	10,518	2.2	3.4	2.5	17.6
Frontier Governorates	24,844	2,114	26,958	2.0	3.0	2.4	7.8
Total	2,814,606	711,465	3,526,071	3.0	4.8	3.4	20.2

SOURCE: CAPMAS Census of Buildings and Dwelling Units, 1976.

TABLE V-5
DISTRIBUTION OF BUILDINGS (ORDINARY RESIDENTIAL PLUS WORK) IN URBAN AREAS, BY INFRASTRUCTURE CONNECTION, 1976

GOVERNORATE	PERCENT OF BUILDINGS CONNECTED TO GENERAL NETWORK OF						TOTAL NO. OF BUILDINGS
	WATER		ELECTRICITY		SEWAGE		
	#	%	#	%	#	%	
Cairo	175,055	64.0	211,447	77.3	159,582	58.3	273,666
Alexandria	105,998	76.4	110,311	79.5	81,042	58.4	138,815
Port Said	11,939	84.9	12,759	90.8	10,471	74.5	14.060
Suez	10,251	52.2	12,503	63.7	9,123	46.5	19,645
Urban Governorates	303,243	70.0	347,020	77.8	260,217	58.3	446,186
Damietta	15,782	74.6	16,395	77.5	13,496	63.8	21,144
Dakahila	48,922	68.8	48,747	64.5	25,193	33.4	75,464
Sharkia	33,789	47.7	41,974	59.3	13,522	19.1	70,836
Qalyubia	19,211	28.0	46,432	67.7	11,960	17.4	68,560
Kafr El Sheikh	18,138	46.0	20,808	52.7	3,244	8.2	39,467
Gharbia	48,922	57.6	57.055	67.2	26,218	30.9	84,911
Menoufia	17,264	32.7	26,393	50.0	4,135	7.8	52,765
Beheira	27,408	37.7	40,194	55.3	13,121	18.0	72,686
Ishmailia	10,018	46.5	14,669	68.1	6,725	31.2	21,547
Lower Egypt	239,454	47.2	312,667	61.6	117,614	23.2	507,380
Giza	47,947	42.6	79,820	70.9	36,215	32.2	112,646
Beni Suef	13,922	31.8	19,086	43.6	5,328	12.2	43,735
El Fayoum	13,613	31.0	19,281	43.9	6.034	13.8	43,877
Minia	21,953	34.8	30,581	48.5	2,901	4.6	63,068
Assiut	21,559	32.4	26,434	39.7	4,618	6.9	66,618
Sohag	19,606	32.0	22,193	36.2	0	.0	61,289
Qena	18,619	25.8	26,198	36.3	0	.0	72,275
Aswan	11,826	27.5	18,012	41.9	279	.7	43.010
Upper Egypt	169,045	33.4	241,605	47.7	55,393	10.9	506,518
Red Sea	2,744	29.6	4,773	57.5	1,447	15.6	9,270
Wadl El Gedid	2.071	38.6	3,471	64.7	0	.0	5,367
Matruh	1,953	21.0	5,324	57.4	0	.0	9,277
Sinai	0	.0	90	96.8	0	.0	93
Frontier Governorates	6,768	28.2	13,658	56.9	1,447	6.0	24,007
TOTAL	718,510	48.4	923,950	61.6	434,671	29.3	1,484,091

SOURCE: CAPMAS Census of Buildings and Dwelling Units, 1976.

TABLE V-6
STATISTICS FROM 1976 CENSUS

SETTLEMENT	TOTAL NUMBER OF BUILDINGS	ACCESS TO INFRASTRUCTURE									
		BUILDINGS CONNECTED TO INFRASTRUCTURE						HOUSEHOLDS CONNECTED TO INFRASTRUCTURE			
		WATER NO.	%	POWER No.	%	SEWERAGE NO.	%	WATER NO.	%	POWER NO.	%
Greater Cairo	395,597	222,491	56.2	303,034	76.6	202,246	51.1	1,041,579	73.9	1,154,325	81.9
Alexandria	138,815	105,998	76.4	110,311	79.5	81,041	58.4	417,635	89.6	417,700	89.6
Port Said	14,060	11,939	84.9	12,759	90.8	10,471	74.5	45,318	86.9	46,599	89.3
Ismailia	16,132	7,680	47.9	11,668	72.3	6,725	41.5	17,610	58.7	23,753	79.2
Suez	19,645	10,351	52.7	12,503	63.6	9,133	46.5	26,032	64.9	31,534	78.6
Mahalla El Kubra	30,285	19,962	65.9	20,131	66.5	10,209	33.7	44,652	76.3	44,723	76.4
Tanta	27,582	17,086	62.0	21,924	79.5	13,007	47.2	49,864	85.6	43,129	74.0
Mansoura	24,375	18,654	76.3	19,273	78.8	16,412	67.1	47,449	87.8	45,242	93.8
Zagazig	19,923	14,867	74.6	15,736	79.0	10,322	51.8	35,481	87.8	36,140	89.0
Damanhour	15,576	9,900	63.6	13,030	83.7	8,483	54.5	29,344	78.5	34,161	91.4
Kafr El Dawar	15,872	5,047	31.8	7,521	47.4	4,638	29.2	10,782	39.5	16,468	60.3
Shebin El Kom	13,197	6,110	46.3	8,700	65.9	4,135	31.3	12,645	62.9	16,433	81.7
Damietta	9,434	7,953	84.3	8,395	89.0	7,042	74.6	17,761	93.4	17,687	93.0
Benha	9,006	6,180	68.2	7,092	78.2	5,037	55.4	13,812	81.1	14,977	87.9
Kafr El Sheikh	8,346	5,187	62.2	5,819	69.7	3,244	38.8	11,790	77.2	12,536	82.1
Mit Ghamr	8,201	5,831	71.1	6,197	75.6	1,985	24.2	11,005	76.6	11,340	78.9
Belbeis	9,512	5,005	52.6	5,156	54.2	1,486	15.6	8,671	66.7	8,467	65.2
Salyub	8,346	2,119	25.4	4,026	48.2	--	--	4,527	37.7	7,434	61.8
Badku	7,164	4,213	58.8	3,611	50.4	-	--	5,918	66.6	5,482	61.7
Margita	5,735	4,237	73.9	2,857	49.8	--	--	10,374	89.3	6,810	58.6
Desouk	7,250	4,485	61.9	5,317	73.3		--	8,360	75.1	8,891	79.9
Menouf	8,660	3,654	42.2	5,136	59.3	--	--				
Abu Kebir	8,819	2,768	31.4	3,243	36.8	-	--	3,889	39.9	4,457	45.8
Zetta	6,824	3,625	53.1	4,262	62.5	--	-	6,232	67.7	6,810	74.0
Belkas	7,000	4,000	57.1	3,831	54.7	2,667	38.1	5,604	60.4	5,472	59.0
Beni Suef	15,564	8,986	57.7	10,404	66.8	5,328	34.2	16,386	65.9	18,154	73.0
El Fayoum	22,895	10,475	45.8	13,485	58.9	6,034	26.4	19,471	57.6	23,356	69.0
Minia	16,186	8,339	51.5	10,117	62.5	1,977	12.1	18,777	62.9	21,456	71.9
Malawi	11,593	4,405	38.0	5,399	46.6	924	8.0	6,788	45.5	8,355	56.0
Assiut	22,534	11,291	50.1	14,626	64.9	4,618	20.5	29,507	68.0	33,953	78.2
Naga Hamadi	2,638	1,129	42.8	1,783	67.6	--	--	--	--	3,337	82.7
Qena	15,470	5,391	34.9	6,720	43.4	-	--	9,422	50.2	10,939	58.3
Aswan	26,528	7,129	26.9	11,374	42.9	297	1.1	13,782	47.4	19,291	66.3
Sohag	10,643	6,193	58.2	6,416	60.3	-	--	15,382	75.9	15,497	76.4
Luxor	17,827	4,901	27.5	6,625	37.3	--		7,897	41.9	1[illegible],646	55.5
Ekhmim	9,099	1,846	20.3	2,775	30.5	--	--	2,706	26.3	3,884	37.7
Gerg	7,167	4,284	59.8	4,322	60.3	--	-	8,211	80.7	7,742	76.1
Matoh	4,629	1,514	32.7	2,802	60.5	--	--	1,196	37.6	3,491	66.9
New Valley	4,055	1,577	38.9	2,665	65.7	--	--	2,191	51.9	3,226	76.5
TOTAL	1,022,315	586,804	54.7	721,045	70.5	417,461	40.8	2,038,784	74.9	2,207,715	80.9

SOURCE: CAPMAS Census of Buildings and Dwelling Units, 1976.

Significantly, the vacancy rates are higher in the urban governorates than in other governorates. For example, the highest vacancy rate was found in Suez largely due to migration away from the Canal Zone during the war period.[5] The next highest vacancy rates are found in the largest metropolitan areas, Cairo and Alexandria. In Alexandria's case, this high rate can be explained by the large number of the stock which is used for vacation homes, while the Cairo rate is due in large part to vacant separate rooms. Overall, the lowest vacancy rates are found in Upper Egypt governorates which could indicate possible poorer housing conditions than in other governorates.

C. Housing in Major Metropolitan Areas

Although serious housing problems exist in Greater Cairo and Alexandria, census statistics indicate conditions in them are better than many other urban settlements in Egypt. Infrastructure access in particular is better, as the percentage of households connected to water and power is higher in both settlements than in the rest of urban Egypt. Greater Cairo had 74 percent of its households connected to water supplies, while Alexandria had almost 90 percent. Rates of power connection are even higher in the two metropolitan areas as is true of most other urban settlements. Both metropolitan settlements had household connection rates greater than 80 percent.

A comparison of census data from Table V-1 and Table V-7 would seem to indicate that residential construction in the metropolitan areas tends to consist of larger multi-storey buildings. The average number of floors per building in Cairo and Alexandria Governorates is 2.4 and 2.3 floors, respectively, while the number of dwellings per building is also higher in the metropolitan areas (4.2 in Cairo and 3.4 in Alexandria vs. 2.4 nationally). Room occupancy rates have declined since 1960 and they are roughly equal to national average room occupancy rates. (Table V-3) Finally, although gross densities in Greater Cairo are higher than national average gross densities (Alexandria has a gross density slightly lower), they are not the highest in the country. Urban settlements in

895

996

Beheira had higher densities (Damanhour had the highest 405 persons/gross hectare); they also had higher room occupancy rates (2.2 persons/room) and lower vacancy rates (Damanhour: 2.1 percent and Kafr El Dawar: 3.2 percent), both of which would indicate that overcrowding is much more serious.[6]

However, due to the size of both Greater Cairo and Alexandria, their problems tend to overwhelm the problems of other settlements. For example, although Greater Cairo had roughly 73 percent of its households connected to water supply, the absolute number of persons not connected is approximately 1.8 million, a population which is greater than any other urban settlement outside the metropolitan areas.

TABLE V-7
SETTLEMENT HOUSING

SETTLEMENT	POPULATION (000)	HOUSEHOLDS (000)	AVERAGE HOUSEHOLD SIZE	TOTAL NO. OF RESIDENTIAL BUILDINGS	TOTAL NO. OF RESIDENTIAL UNITS	NO. OF UNITS PER BUILDING	PERCENT OF RESIDENTIAL UNITS VACANT OR UNOCCUPIED	NO. OF RESIDENTIAL UNITS PER HOUSEHOLD
Greater Cairo	6,710.9	1,409.5	4.8	373,574	1,534,388	4.1	4.1	1.1
Alexandria	2,318.7	466.0	4.9	128,643	477,262	3.7	5.0	1.0
Suez Canal								
Port Said	262.6	52.2	5.0	14,782	51,474	3.5	1.5	1.0
Ismailia	146.0	30.0	4.9	14,816	38,874	2.6	1.8	1.3
Suez	194.0	40.1	4.8	18,468	50,877	2.8	5.5	1.3
Delta								
Mahalla El Kubra	292.0	58.5	5.0	28,419	66,183	2.3	2.9	1.1
Tanta	284.6	58.3	4.9	25,585	62,556	2.5	2.2	1.1
Mansoura	257.5	54.0	4.8	22,928	59,070	2.6	3.3	1.1
Zagazig	202.6	40.6	5.0	19,030	46,062	2.4	2.0	1.1
Damanhour	188.9	37.4	5.1	14,161	37,391	2.6	2.1	1.0
Kafr El Dawar	160.6	27.3	5.9	15,209	30,909	2.0	3.2	1.1
Shebin El Kom	102.8	20.1	5.1	12,432	26,876	2.2	1.8	1.3
Damietta	93.4	19.0	4.9	8,330	22,703	2.7	3.6	1.2
Benha	89.0	14.0	5.2	8,402	19,125	2.3	0.6	1.1
Kafr El Sheikh	77.5	15.3	5.1	7,569	16,344	2.2	3.0	1.1
Mit Ghamr	72.2	14.4	5.0	7,758	17,938	2.3	2.3	1.3
Belbeis	69.3	13.0	5.3	8,893	14,659	1.7	1.4	1.1
Qalyub	62.7	12.0	5.2	7,907	10,518	1.3	1.7	1.0
Edku	62.2	8.9	7.0	7,143	8,202	1.2	0.2	0.9
Matarria	61.1	11.6	5.2	6,100	12,049	2.0	0.5	1.0
Desouk	58.7	11.1	5.3	6,795	15,553	2.3	3.6	1.4
Menouf	55.1	10.3	5.3	7,743	12,558	1.6	2.3	1.2
Abu Kebir	54.9	9.7	5.6	8,461	9,951	1.2	2.7	1.0
Zefta	50.4	9.2	5.5	6,420	11,251	1.8	3.0	1.2
Belkas	50.1	9.3	5.4	7,012	10,361	1.5	1.7	1.1
North Upper Egypt								
Beni Suef	118.1	24.9	4.7	15,008	31,729	2.1	1.5	1.3
El Fayoum	167.1	33.8	4.9	21,330	43,946	2.1	2.5	1.3
Minia	146.4	29.9	4.9	15,239	35,800	2.4	0.5	1.2
Mallawi	74.2	14.9	5.0	11,097	17,804	1.6	2.5	1.2
South Upper Egypt								
Assiut	214.0	43.4	4.9	21,149	22,656	1.1	6.2	0.5
Naga Hamadi	46.9	4.0	5.0	2,397	4,497	1.9	3.3	1.1
Sohag	93.8	18.8	4.9	14,536	23,244	1.6	1.1	1.2
Aswan	144.3	29.0	4.9	24,851	33,015	1.3	1.7	1.1
Sohag	101.8	20.3	5.0	9,811	21,976	2.2	6.7	1.1
Luxor	92.7	18.8	4.9	17,050	21,654	1.3	1.1	1.2
Ekhmim	53.2	10.3	5.2	8,558	9,945	1.2	4.8	1.0
Girga	51.1	10.2	5.0	6,274	11,164	1.8	0.7	1.1
Remote Areas								
Matruh	27.9	5.2	4.9	4,093	6,113	1.5	1.8	1.2
New Valley	26.4	4.2		4,069	6,748	1.7	1.2	1.6
Red Sea				2,319	2,628		0.9	
AVERAGES OR TOTAL	13,336.6	2,722.7	4.9	964,361	2,792,413	2.9	4.0	1.0

SOURCE: CAPMAS Census of Buildings and Dwelling Units, 1976.

FOOTNOTES
(Section A)

1 1976 Census. CAPMAS and NUPS analysis.

2 The census defines dwelling units as either flats or apartments having more than one room, and rooms which includes one-room dwellings in buildings, mud huts, roof dwellings and certain other categories of unclassified dwellings.

(Section B)

3 According to CAPMAS 1964 Building Census and 1976 Census of Urban Buildings and Dwelling Units as quoted by Appendix A8 of the CIS Draft Final Report. 1980.

4 CAPMAS data as cited by William C. Wheatan, Public Policy and the "Shortage" of Housing in Egypt. (M.I.T.) 1979.

5 More recent unpublished surveys conducted by the Planning Department of Suez indicate that due to migration to Suez since 1976, population growth rates may have reached 10 percent or more between 1976 and 1981. Furthermore, although there has been increased formal and informal housing construction in Suez, the rate of housing construction has not kept pace with population growth rates and thus occupancy rates have probably substantially increased.

(Section C)

6 See Part 3 which discusses gross densities of major urban settlements.

VI. LAND VALUES IN URBAN AREAS

Comprehensive statistics about the changes in urban land values are not available for all urban areas of the country. However, since land values are not controlled, as development pressure in urban areas has increased land values have soared. In some cases, these increases have been dramatic yielding average annual growth rates of up to almost 50 percent over fairly long periods. This has resulted in increased land speculation which has delayed development in some residential areas. Nasr City, for example, has only recently begun developing although it was planned and land areas sold in the mid-1960's. Table VI-1 gives examples of price increases in various sections of Greater Cairo.

Some areas such as the central business district have shown slower rates of growth in land prices due to rent control legislation which has made changes in land use from residential to other uses more difficult. Thus, the slower rates of increase shown in those areas reflect the relative lack of change in ownership patterns due to rent control rather than the actual market value for land.

Similar high growth rates have also been experienced in informal settlements as land uses changed from agricultural to urban. Although time series data for land values in all informal settlements of Greater Cairo are not available (since they are informal, by definition, land transactions are not recorded), data from selected settlements indicates that rates of increase in land prices have exceeded both general inflation and inflation in housing building costs.[1] These rates have also probably been fairly consistent in other urban settlements throughout Egypt which have been experiencing rapid population growth. (Table VI-2)

FOOTNOTES

1 The Informal Housing in Egypt report quotes these rates of increase as 23.6 percent between 1971-1981.

TABLE VI-1
URBAN LAND VALUES IN SELECTED AREAS OF CAIRO
(L.E./m2)

AREA	1966	1968	1970	1972	1974	1976	1978	1980	AVERAGE ANNUAL GROWTH RATES (%)
CENTRAL AREA									
Including Garden City						500		750 - 1,000+	18.9
NORTHERN INDUSTRIAL AREA									
Nile Frontage						500		200 - 1,000	18.9
Dokkim Mohandesin, Giza								250 - 400	
Zamalek						150 - 500		400 - 750	10.7 - 49.5
Nasr City	5		7.5		26	30 - 60		100 - 200	20.6 - 25.9
Heliopolis	5	10			14	100 - 150		200+	20.6 - 25.9
Maadi			7.5			30 - 60		100 - 300	29.6 - 44.6
Shoubra El Kheima								60 - 150	
Agricultural Land in Delta								0.75 - 1.5	
Agricultural Land near Delta Road								2.0 - 2.5	
Desert Land near Cairo								1.0 - 6.0	

SOURCE: Land values between 1966-1974 are from records of the Price Control Committee of the General Organization for Housing quoted in the Appendix to Urban Land Use in Egypt, Joint Land Policy Team, August 1977 (p. 80); also, 976 values are from the same report, page 82. Values for 1980 are from the Rehabilitation and Extension of the Cairo Wastewater System, Interim Development Report, Part 1, Volume 2, by AMBRIC for the General Organization for Sewerage and Sanitary Drainage; June 1980, p. 109.

VII. HOUSING PRODUCTION (1960-1979)

Four major groups are involved in the production of housing: the government through the Ministries of Housing and Development and governorates, public sector authorities who are required to devote 15 percent of their profits to worker housing, the formal private sector (those who have building permits and build on legally registered land) and the informal sector. Exclusion of the informal sector previously led to large over-estimates of housing deficits as the informal sector constructed up to 84 percent of the total housing stock between 1966 and 1976. (Table VII-1) This estimate was made in an unpublished National Urban Sector Report by the World Bank by subtracting the number of dwelling units constructed by government, public sector and formal private sector groups supplied by the Ministry of Housing from census figures. The demolition losses shown on the table resulted by assuming an annual loss of stock due to fire, demolition and abandonment of one percent.[1]

Total public sector construction (government plus public sector companies) amounted to only about 6.6 percent of total housing construction between 1966 and 1976. Of that amount, the government's "economic housing" program con-

TABLE VI-2
LAND PRICES IN INFORMAL SETTLEMENTS
(L.E./m2)

YEAR	GREATER CAIRO SETTLEMENTS			BENI SUEF CITY
	MIT OBA	DAR ES SALAAM	BASATIN	
1963	-	1.50	-	2.00
1968	4 - 5	4 - 5	1.50	3.50
1975	30 - 35	25	35 - 45	15 - 29
1980	80	60 - 150	80 - 150	80 - 100
1968-80 Rate of Increase (%)	28.4	25.3 - 32.8	39.3 - 46.8	29.8 - 32.2

SOURCE: Abt Associates, Dames and Moore and GOHBPR, Informal Housing in Egypt, January 1982, p. 159.

899

900

structed by the governorates with the Ministry of Housing direction produced the largest share of total public sector housing, i.e., 54,000 out of the total 78,600 units constructed.

This total production of housing units represented a drop in public sector production from an annual average production of 13,400 units between 1960 to 1966 to 7,856 units between 1966 to 1976. (Table VII-2) Recently, due to increased government interest in housing, public sector housing construction increased over four times by 1979 to 34,800 units.

Formal private sector construction contributed about 15 percent of the increase in housing stock between 1966 and 1976. This represented a small increase in average annual housing production of 15,400 units between 1960 and 1966 to 17,800 units between 1960 and 1976. Like public sector housing, due to improved economic conditions, formal private sector housing construction soared after 1976, achieving almost 64,000 units by 1979 or about 65 percent of total public and formal private sector construction. The November 1981 draft final report of Informal Housing in Egypt indicates equally impressive gains in housing production in informal private sector construction.

A. Public Sector Housing

Prior to the development of the new towns, public sector housing consisted of economic housing produced by the governorates with Ministry of Housing direction and worker housing constructed by public sector companies. Since the start of construction of the new towns and satellite towns, public sector housing construction and public sector housing efforts broadened into producing complete settlements encompassing housing and associated services along with provisions for employment. The following paragraphs discuss each of these public sector housing types briefly as details of existing projects are presented in Part Three of the UGUDR under the discussion of new settlement projects.

Typically, public sector housing (excluding new town housing) consisted of 45 to 50 square meter units containing two to three rooms with private service facilities located in relatively low density projects consisting of five storey walk-up

TABLE VII-1
DETERMINATION OF INFORMAL SECTOR SHARE IN TOTAL CONSTRUCTION

	URBAN	RURAL	TOTAL
Dwelling Units, 1960 (000's)	1,675		
Dwelling Units, May 1966 (000's)	2,395	3,427	5,822
Dwelling Units, Oct 1976 (000's)	3,586	3,724	7,311
Period 1966-76			
Net Construction (000's)	1,191	297	1,489
Demolition Loss, 1% annually (000's) 1/	299	357	656
Gross Construction (000's)	1,490	654	2,144
Formal Private Plus Public Construction (000's)	257	79 2/	336 2/
Informal Sector Share (in percent)			
Demolition Loss 1% annually	83%	88%	84%
Demolition Loss 0% annually	78%	73%	77%
Period 1960-66			
Net construction (000's)	720	n.a.	n.a.
Demolition Loss, 1% annually (000's)	122	n.a.	n.a.
Gross Construction (000's)	842	n.a.	n.a.
Formal Private Plus Public Construction (000's)	173	n.a.	n.a.
Informal Sector Share (in percent)			
Demolition Loss 1% annually	79%	n.a.	n.a.
Demolition Loss 0% annually	76%	n.a.	n.a.

1/ Determined through linear interpolation between stocks.

2/ Includes estimated construction for 1975 and 1976.

Source: Unpublished draft of National Urban Sector Report. HRD. February 1981, p. 92.

TABLE VII-2
COMPOSITION OF FORMAL SECTOR HOUSING CONSTRUCTION 1960-1976

Year	Urban: Public Sector: GOVERNMENT 2/	Urban: Public Sector: Total 1/	Urban: Private Formal 1/	Rural: Total 1/	Rural: Public 1/	Rural: Private Formal 1/	Rural: Total 1/	Total Urban plus Rural: Public 1/	Total Urban plus Rural: Private Formal 1/	Total Urban plus Rural: Total 1/
1960/61	1,634	2,594	11,564	14,158	n.a.	n.a.	386	n.a.	n.a.	16,526
1961/62	14,679	16,768	25,675	42,443	n.a.	n.a.	3,229	n.a.	n.a.	45,672
1962/63	19,628	21,288	22,590	43,878	n.a.	n.a.	3,682	n.a.	n.a.	47,560
1963/64	9,263	10,115	10,864	20,979	n.a.	n.a.	20,504	n.a.	n.a.	41,483
1964/65	7,890	9,020	8,893	17,913	n.a.	n.a.	7,899	n.a.	n.a.	25,372
1965/66	19,267	20,509	13,000	33,509	n.a.	n.a.	14,863	n.a.	n.a.	48,372
1960/61 to 1965/66	72,361	80,294	92,586	172,880	n.a.	n.a.	50,563	n.a.	n.a.	223,443
1966/67	8,493	9,844	15,738	25,582	8,400	21,000	29,400	18,244	36,738	54,982
1967/68	9,832	10,967	29,505	40,472	4,711	3,600	8,311	15,678	33,105	48,783
1968/69	2,878	5,099	22,910	28,009	1,479	5,200	6,679	6,578	28,110	34,688
1969/70	8,222	9,491	28,717	38,208	1,242	9,000	10,242	10,733	37,717	48,450
1970/71	4,038	5,250	22,520	27,770	1,097	4,000	5,097	6,347	26,520	32,867
1971/72	4,903	3,052	16,470	19,522	2,100	6,280	8,380	5,062	22,750	27,812
1973	7,586	9,697	15,032	24,729	966	1,900	2,866	10,663	16,932	27,595
1974	8,088	9,623	8,646	18,270	1,527	0	1,527	11,151	8,646	19,797
1975	n.a.	6,500	8,500	15,000	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1976	n.a.	7,036	10,564	19,600	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1966/67 to 1976	54,040 4/	78,560	178,602	257,162	21,522 4/	50,980 4/	72,502 4/	84,456 4/	210,518 4/	294,974
1960/61 to 1976	126,401 4/	158,854	271,188	430,042	n.a.	n.a.	123,065 4/	n.a.	n.a.	518,417
1977	n.a.	20,800 3/	31,800 3/	52,600 3/	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1978	n.a.	21,700 3/	25,000 3/	46,700 3/	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1979	n.a.	32,800 3/	63,800 3/	96,600 3/	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

1/ CAPMAS, Statistical Indicators and Statistical Yearbook, as report in IBRD, CIS Draft Final Report, Appendix A-8, October 1980.

2/ Ministry of Housing, as reported in the Joint Housing Team, Immediate Action Proposals for Housing in Egypt, Statistical Appendix.

3/ Based on information obtained from MOH, October 1980.

4/ Excluded 1975 and 1976 constructions.

SOURCE: Unpublished draft of National Urban Sector Report. IBRD. February 1981, p. 92.

apartment buildings. These units cost roughly L.E. 3,500 per unit net of infrastructure (Ministry of Housing, October 1980 estimates) and under rental control policies tended to be rented at very low rents which frequently did not cover the costs of collecting rents.[2]

Due to the lack of revenues, partially due to very low rents, maintenance in public housing projects has been minimal and the condition of the housing has deteriorated much faster than if it were well maintained.[3]

Law 49 of 1977 established rental payments as contributions toward the purchase price of public housing units. Under conditions of the law, tenants who had paid rent for 15 years became instant owners while other existing tenants had 15 years to complete payments for ownership. Maintenance of the projects then becomes the responsibility of the tenants who are supposed to form tenant associations to ensure timely maintenance.

Although relatively little data about the beneficiaries of public housing exists, one small study performed in Helwan in 1978 gives a flavor of the types of beneficiaries and their attitudes towards their housing.[4] Due to the special economic conditions of Helwan, the bulk of householders in the study were employed in industries located in Helwan. Rents tended to be quite low, both in absolute terms (averaging L.E. 2.06 per month) and in terms of total family income (only 3.8 percent of total family monthly income). Food expenditure comprised the largest single monthly expenditure averaging 51 percent of total family income. Satisfaction with housing tended to be high as 64 percent of the people indicated satisfaction with their housing due mainly to the location near to their work and the low rents. Dissatisfaction with public housing tended to center around the smallness of the units, the lack of maintenance and poor neighbors and neighborhood conditions.

Less data is available about housing provided by public sector companies. However, discussions with officials of the Suez Canal Authority indicate that the housing conditions and beneficiary conditions tend to be similar to public housing in that rents are subsidized and represent only a small portion of construction costs. Unit sizes tend to be similar to public housing projects except that many companies also provide larger more luxurious housing for company executives. This type of housing provides, at best, only a very small portion of housing as between 1966 and 1976 it accounted for only 1.6 percent of total housing constructed.

With the increase in cooperative housing largely resulting from government policy to channel large investments in housing through the General Authority for Building and Housing Cooperatives, some overlapping of definitions has occurred as after 1976 public sector company housing is frequently financed by the authority.

Fairly detailed descriptions of the types of housing being provided by the public sector in the new towns and by governorates is provided under the "New Settlement Type" section of Part Three. Therefore, the standards and types of units being planned are not discussed here. Generally, these public sector housing types are planned to serve a wide range of income groups at fairly high standards through both capital and interest rate subsidies which range up to 64 percent of total program costs. The Cairo Governorate's rental housing program through its very low rents (L.E. 1.00 to L.E. 200 per month) has subsidies of up to 94 percent of total program costs when current Central Bank discount rates of 12 percent are used to evaluate the project. Due to the very low rents or monthly mortgage payments required from beneficiaries, these programs are able to reach very low income groups ranging from the 5th percentile of urban incomes.

HOUSING IS WIDELY SUBSIDIZED

B. Formal Private Sector Housing

The relative smallness of the formal private sector[5] contribution to new housing (15 percent of total housing between 1966 and 1976) results from the costs and difficulties encountered in obtaining building permits and access to legal subdivisions and the lack of long term financing. The recent study of informal housing indicated that one of the primary reasons for not obtaining building permits was the cost of the permits and the difficulty in getting them. Even though a building permit would give the builder access to subsidized building materials, the savings in costs only benefits large projects. In smaller projects, the benefits of reduced building materials costs is minimized by the cost of the building permits.[6]

The standards of the private sector housing exceed those of the public sector construction. The following estimates of housing production by various sectors give an indication of the types of units built and the groups served by the formal private sector.

As Table VII-3 indicates, the formal private sector is serving a very small group of upper income households, an assumption which is also suggested by the small contribution made by the sector to new housing construction between 1966 and 1976.

C. Informal Sector Housing

Although the informal sector has been responsible for 84 percent of the housing built between 1966 and 1976, relatively little comprehensive information is available about its products or the composition of the groups served. The following description of the informal housing construction process was derived from the Informal Housing Sector Supply Process and Policy Issues draft report[7] which studied four informal communities[8] in Greater Cairo and Beni Suef.

The actual location of informal settlements is frequently determined by access to water and the availability of agriculture and fringe land. Since it is illegal to provide water to informal settlements (Law 52 of 1940),[9] many informal settlements were originally located in agriculture areas where either ground water or irrigation water was available. In Shoubra El Kheima and possibly other areas, owners of agricultural land began conversion of it to urban uses when industrial pollution of canals became too great for agricultural uses. Other land owners began converting their farms to urban uses when surrounding development of other urban uses began creating pressures on their areas for middle and low income housing.

Once an informal settlement is established, residents collectively request recognition from local governments and eventual provision of infrastructure. However, the high costs of extension of infrastructure networks and connections to it frequently prevent individual residents from connecting. Therefore, neighborhoods frequently request water supply provisions in terms of public standpipes or taps in religious facilities. The latter is a favored technique since by law, religious institutions are given priority access to water connections.

The provision of sanitation in informal areas tends to be much more critical than water supply since city sewerage systems tend to be much less extensive. In Cairo the majority of households surveyed in low income kisms use various types of holding tanks for disposal of sanitary wastes. However, drainage of the tanks frequently becomes a problem due to the difficulties in getting municipal trucks to come and the costs of the service.[10] In some neighborhoods, residents have constructed their own primitive pipe networks to provide better sanitation, but the extent of this practice is unknown.[11]

TABLE VII-3
INDICATIVE HOUSING PRODUCTION BY SECTOR, UNIT TYPE AND INCOME GROUP SERVED, 1976

Sector	Unit Size (m²)	Cost (L.E.)	Affordable Income (L.E.) 1/	Income Quartile Decile 2/
Public	70 80	3,500 4,000	1388 1580	[illegible]
Private Formal	90 150	[illegible],000 10,000	1983 3966	Over 90th
Private Informal	[illegible]	[illegible],000	793	50th - 75th

1/ Based on 25 percent of income allocated to housing and a 10 percent capitalization rate.

2/ Quartile/Decile groups are based on 1975 estimate by Professor L. Taylor (M.I.T.)

SOURCE: Cairo University, Massachusetts Institute of Technology, The Housing Construction Industry in Egypt, Interim Report (Working Papers, [illegible]), TAP Report [illegible], Public Policy and the Economics of Housing, p. 16.

Interviews with building officials in both the Cairo and Beni Suef Governorates indicate that the collapse of new buildings built in the informal sector is rare. Collapse of newer buildings, when it occurs, usually has been caused by vertical extensions on buildings with inadequate foundations or supporting structural members.[12] Generally, from a structural point of view, informal housing is equal to public sector buildings. However, levels of finishing are frequently lower than public sector housing, particularly that built in the new communities. Furthermore, open space and street widths which are mandated by subdivision legislation are usually not provided by developers of informal settlements. Therefore, they can be harder to service with infrastructure than formally planned neighborhoods.[13]

Access to electrical power is less a problem for informal settlements than water or sanitation as alternative sources of power are available (kerosene stoves, for example) and under existing laws all communities must be given access to electrical power. Individuals get connections to the power system if their house is within 250 meters of an existing distribution point. If it is not, they go to local power companies and request installation of a local transformer station and share the costs of installation. Individual house connections are made by hiring a local electrician and paying for the materials used.

Costs and qualities of informal housing can vary widely. For example, the Informal Housing In Egypt report shows costs per square meter for "popular" or informal housing that are 60 percent less than units being produced by the public sector.[14] (The Cairo Governorate is

producing 40 and 50 square meter units in its El Seloum, formerly Berket, project for L.E. 3,000 to L.E. 4,500 per unit, while similar sized housing in satellite cities and new towns average L.E. 70 to L.E. 80 per square meter.)[15] These lower construction costs result because the contractors use lower priced labor relying on more unskilled and semi-skilled labor, do not pay social security taxes, and according to the informal sector study interviews, are more efficient in using building materials even though they are usually bought on the black market at higher prices.[16]

The Informal Housing in Egypt project focused on mainly informal settlements on the periphery of Greater Cairo. Two other surveys within Greater Cairo carried out in low income kisms and Helwan give a broader, if less detailed, view of housing conditions. This data is summarized in Table VII-4.

In the first set of surveys conducted of relatively small samples in low income areas around Helwan, it is striking to note the relatively high degree of satisfaction with "popular housing" even though access to piped water is lower than Greater Cairo average rates of household connections (13 percent to 50 percent for Greater Cairo) and that the settlements are unsewered. This high degree of satisfaction results from the high degree of ownership within the area and, to a lesser extent, from the ease of access to work.

Water consumption in the low income areas of Cairo is very low in comparison to the average total consumption of water. It ranges from roughly 21 liters per capita per day in Embaba where only 3 percent of dwellings have access to piped water to about 36 liters per capita per day in Shoubra El Kheima, where less than 2 percent of dwellings have internal water connections. It should be noted that the 1976 census listed much higher connections of buildings to water supply systems. Therefore, while actual dwelling units may not be connected to the system, access to piped water may be available within the building. However, 1976 census data indicates that serious inequities in provision of water supply still exist as is shown on Table VII-5.

Rents in the areas studied by the ES-Parsons group averaged about 12 percent of monthly income and about L.E. 2.55 per room.[17] In the surveys conducted by the Center for Social and Criminological Research in Helwan's low income settlements, however, rents only ranged between 4 percent and 9 percent of monthly household income possibly due to the much higher proportion of owners living in the area. Both

TABLE VII-4
INFORMAL SETTLEMENT CONDITIONS:
SELECTED DISTRICTS IN GREATER CAIRO

NAME OF SETTLEMENT	SURVEY DATE	POPULATION (1000)	DENSITY PERSON/Ha.	HOUSEHOLD SIZE persons	AVERAGE PLOT SIZE (m^2)	AVERAGE HOUSEHOLD INCOME PER MONTH L.E.	AVERAGE MONTHLY EXPENDITURES 1/ RENT %	ELECTRICITY %	WATER %	SANITATION %	TRANSPORT %	FOOD %	PERCENT OWNERS %	AVERAGE NUMBER OF HOUSEHOLD PER BLDG.	AVERAGE NUMBER OF ROOMS PER DWELLING	PERCENT OF DWELLING WITH ACCESS TO PUBLIC UTILITIES: PIPED WATER %	ELECTRICITY %	SEWERS %	PRIVATE W.C. IN DWELLING UNIT %	AVERAGE NO. OF PERSONS PER ROOM	PERCENT SATISFIED WITH HOUSING CONDITIONS	SOURCE OF SATISFACTION: OWN DWELLING	CLOSE TO WORK	AVERAGE WATER CONSUMPTION L/000
* Arab Gheneim 2/ (Helwan)	1979	40	300	6.2	75	41.00	8.2	4.3	3.7	3.4	6.6	77.8	78.8	3.8	3.1	21.0	76.3		70.0	2.9	82.8	52.4	20.0	N.A.
* Arab Zein (Helwin)	1979	10	133	5.0	70	42.10	7.8	4.4	3.1	2.3	7.1	77.2	72.0	3.8	2.9	13.0	84.0		67.0	2.9	85.0	56.0	54.0	N.A.
* Arab Rashed (Helwin)	1979	10	343	5.9	65	40.10	6.7	4.4	3.3	3.3	7.0	77.3	76.0	3.5	2.8	50.5	76.5	-	54.0	3.2	83.0	56.0	25.0	N.A.
* Kafr El Elow	1979	7	N.A.	5.9	55	46.0	3.9	3.5	3.0	2.2	5.7	66.[illegible]	80.0	2.0	3.6	8.7	63.3		80.0	2.2	88.0	50.0	14.7	N.A.
* El Abassia	1979	16	1904	5.6	83	47.10	8.3	3.6	2.6	2.6	6.8	73.1	66.8	3.5	3.4	58.8	82.8	-	92.0	2.4	86.8	87.8	13.[illegible]	N.A.
* Minshevet Nasser	1979	16	544	5.7	75	38.86	8.7	3.2	1.8	2.2	6.7	60.7	80.0	2.8	2.2	62.7	84.0	-	68.0	3.5	81.3	53.3	16.7	N.A.
* Matareya 3/	1979	535		5.5		46.06	12.6						68.6		2.6	40.0	84.7	28.9	97.3	1.66				31
* Zeitoun	1979	268		5.9		43.79	12.8						60.6		2.6	3.7	77.2	60.1	95.4	1.96				26
* Saveda Zeinab	1979	252		5.7		51.06	4.5						21.1		1.6	12.3	63.1	1.5	71.9	1.87				29
* Misr El Kadima	1979	274		6.1		43.53	7.8						65.5		1.8	-	66.1	5.8	87.0	1.89				28
* Madi	1979	757		5.6		46.28	12.7						57.4		2.7	-	89.7	0.6	98.6	1.74				26
* Embaba	1979	323		5.7		48.91	13.7						61.5		2.9	3.3	82.7	-	91.4	1.93				21
* Giza	1979	209		5.9		47.83	9.4						66.2		2.2	5.0	85.5	10.1	96.1	1.96				24
* Shoubra El Kheima	1979	394		5.7		48.66	14.0						69.7		1.2	1.5	91.1	27.3	96.1	2.66				36
TOTAL (ES PARSONS ONLY)				5.7		46.80	11.5						63.5	2.9	2.94	3.5	83.5	19.6	93.6	2.0				36

N.A. Not Available.

1/ Percents may not total as these are average expenditures which were measured separately.

SOURCES: Center for Social and Criminological Research, A Case Study of Low Income Settlements in Greater Cairo,2/ for the Ministry of Housing and USAID 1979.

Metered Water Service Connections Program, Socio-Economic Report on Proposed Service Areas.3/ AID Loan No. 263-K-04201. Prepared for the General Organization for Greater Cairo Water Supply, Arab Republic of Egypt, ES-Parsons in association with ECG-Cairo, March 3, 1980.

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studies indicate that key money is an important means of access to rental apartments, however, they do not give an indication as to its amount. (Table VII-6)

The Informal Housing in Egypt report estimates that key money for rental units within its survey area is rarely less than 100 times the average monthly rent.[18] This probable range of key money to official rent would appear to be low when compared to earlier work on the relationship between the cost of dwelling units, official rents and key money payments estimated by the Cairo University/MIT study of housing in Egypt.

TABLE VII-5
HOUSEHOLDS WITHOUT ACCESS TO POTABLE DRINKING WATER IN THEIR BUILDINGS

KISM	NUMBER OF HOUSEHOLDS	PERCENT OF TOTAL KISM HOUSEHOLDS
Mataria		
Study Area 1/	30,099	52
Total Kism Area	46,002	41
Zeitoun		
Study Area 1/	8,042	39
Total Kism Area	8,697	16
Sayeda Zeinab		
Study Area 1/	2,001	20
Total Kism Area	4,505	8
Nasr El Kadima		
Study Area	6,404	32
Total Kism Area	11,053	20
Maadi		
Study Area 1/	16,285	68
Total Kism Area	29,214	50
Embaba		
Total Kism Area 2/	33,510	50
Giza		
Study Area 1/	8,697	70
Total Kism Area	13,218	30
Shoubra El Kheima		
Total Kism Area 2/	32,514	67

1/ Study Area refers to the study area of the above-quoted study.

2/ The entire kism was studied.

SOURCE: 1976 Census as quoted by, Metered Water Service Connections Program Socio-Economic Report on Proposed Service Areas. Prepared for the General Organization for Greater Cairo Water Supply, by E. S. Parsons, in association with ECG-Cairo; 1980, p. C-4.

FOOTNOTES

1 IBRD. National Urban Sector Report, Arab Republic of Egypt, Vol. 1, p. 91. February 1981.

(Section A)

2 See Joint Housing Policy Team, Ministry of Housing and Reconstruction, Ministry of Planning, Arab Republic of Egypt with Office of Housing, USAID, June 1976 report on Immediate Action Proposals for Housing in Egypt, p. 55.

3 Ibid.

4 National Center for Social and Criminological Research, Appraisal of Public Housing in Helwan, for the Ministry of Housing and Reconstruction and the U.S. Agency for International Development. Cairo. 1979.

(Section B)

5 For the purposes of definition, cooperative housing is considered public sector.

6 Abt Associates, Dames and Moore, GOHBPR, Informal Housing in Egypt, Final Report, January 1982.

TABLE VII-6
HOUSING COSTS, RENTS AND "KEY MONEY"

TYPE OF UNIT	SIZE (M2)	CURRENT COST (L.E.)	OFFICIAL ANNUAL RENT (L.E.)	KEY MONEY (L.E.)
High Quality	150	10,000	300	10,000-20,000
Middle Quality	90	5,000	180	1,500-20,000
Lower Quality	40	2,000	80	200- 1,000

SOURCE: The Housing and Construction Industry in Egypt, Interim Report Working Paper 11/8, Cairo University/MIT.

(Section C)

7 Ibid.

8 Informal settlements are defined as settlements built on land which is not part of a registered subdivision. In some cases, this land is also illegally occupied in that residents are occupying land which they do not own or which is publicly owned land. Informal housing has the additional definition of being built without building permits.

9 Law 29 of 1966 modified provisions of this law by providing processes through which illegal settlements could become legal and thus, be served with infrastructure. A new planning law has recently been passed which would legalize illegal settlements constructed since 1966.

10 ES-Parsons in association with ECG-Cairo. Metered Water Service Connections Program. Socio-Economic Report on Proposed Service Areas, prepared for the General Organization for Greater Cairo Water Supply, March 3, 1980. p.52

11 Op. Cit., ABT Associates, et al. pp. 35-36

12 Op. Cit., ABT Associates, et al. pp. 25-26

13 Open space and other subdivision requirements are presented in Part 5 of the UGUDR.

14 Op. Cit., et al. p. 20

15 See Appendices to Part Three, VI of UGUDR.

16 Op. Cit., ABT Associates, et al. Also in the study of private sector contractors conducted by the CIS study (CIS Draft Final Report, Appendix A.6. 1980) many private sector contractors indicated cash flow problems frequently resulted in purchasing materials through formal sector processes as advance payment is required prior to obtaining materials permits. Since long delays in permit processing are frequent, the costs of financing these advances can minimize the difference in costs found on the free market.

17 Ibid, ES-PARSONS. pp. 3-14

18 Dames and Moore. p. 35

VIII. HOUSING FINANCE

Two very different methods of financing housing exist in Egypt: the first consists of formal sector finance which relies on transfers from the central bank to finance its activities, while the second, the informal sector, finances construction of new housing entirely through household savings frequently derived from remittances from workers overseas.

Informal sector housing finance consists of individual and household savings outside formal banking systems. When household savings are adequate (frequently when an Egyptian worker returns after having worked in one of the Gulf countries), local contractors are hired to construct as much of the dwelling unit as household finances will permit. In some cases, households will buy materials on the black market and supply them to contractors. This process can take as long as ten years as households save money to complete different stages of their dwellings.

The exact amount of savings which individual households have available to finance informal housing is unavailable. However, some estimates can be projected based on known flows of worker remittances through official channels and estimates of informal sector housing construction costs. In an unpublished AID document entitled, Remittances and the Saving/Investment Process (July 16, 1980), total worker remittances entering Egypt through official channels were estimated at roughly L.E. 1.5 billion in 1979 (an increase since 1974 of more than 1,000 percent). As is pointed out in Part 4 I.F. of the UGUDR, this would have amounted to about L.E. 2,100 per worker per year. However, not all of this remittance income is available for housing; much of it is spent to finance imports of consumer goods and "luxuries" (this category of "own imports" has decreased from 41 percent of "own exchange imports" in 1976 to 28 percent in 1979). Thus, the report speculates that both savings rates for income from worker remittances and imports of capital goods have increased.

Based on data presented earlier, it would appear that households constructing informal housing have capital assets available to them which range on the average from between L.E. 2,000 to L.E. 5,000 for the buildings and a similar price range if they must also buy land.[1] Occasionally small contractors and building materials suppliers offer credit to owners constructing informal housing. If they do, total prices are usually marked up by 5 percent, and buildings materials prices are also increased by a similar percentage. However, in order to obtain the facility, the prospective borrower must be well known in the community.[2]

A. Formal Sector Housing Finance

Those portions of public sector and private sector housing which are financed through the formal housing finance sector have the Central Bank as the major source of their funds (about 61 percent of total sources of funds of the mortgage banks). The next largest source of funds for mortgage banks (other than their capital accounts) are loans from other commercial banks. Deposits from both public and private sectors amounted to only 5 percent of their total liabilities. (Table VIII-1)

B. Housing Finance Organizations

The sector is comprised of three main organizations: Credit Foncier Egyptien (CFE), the General Authority for Building and Housing Cooperatives (GABHC) and the newly established Housing and Development Bank. Since 1978, one other organization, the Arab Land Bank, has also entered the mortgage market. However, its loan portfolio in terms of the number of loans serviced remains small and is concentrated in commercial, tourism and upper income developments.

TABLE VIII-1
COMBINED BALANCE SHEET OF MORTGAGE BANKS IN EGYPT
(L.E. Million)

	1975	1976	1977	1978 1/	September 1979	December 1979	September 1980
Cash	0.1	0.1	0.2	0.1	0.1	0.2	0.2
Foreign Assets (net)	-	0.2	0.2	- 4.2	- 0.8	- 0.3	- 1.1
Assets	(-)	(0.2)	(0.2)	(1.2)	(3.1)	(4.0)	(6.0)
Liabilities	(-)	(-)	(-)	-(5.4)	(-3.9)	(4.3)	(7.1)
Claims on Public Sector	5.1	4.4	14.8	32.7	41.1	53.5	88.6
Central and Local Government	(0.8)	(0.8)	(0.9)	(9.9)	(1.0)	(1.0)	(1.1)
Public Authorities	(3.8)	(2.1)	(11.1)	(20.0)	(38.2)	(50.4)	(85.0)
Public Sector Companies	(0.5)	(1.5)	(2.8)	(2.8)	(1.9)	(2.1)	(2.5)
Claims on Private Sector 2/	45.4	46.9	59.6	79.2	93.1	98.2	114.2
Claims on Banks	0.2	0.4	0.1	10.7	15.7	15.3	10.8
Central Banks	(0.1)	(0.1)	(-)	(0.2)	(-)	(0.1)	(0.4)
Commercial Banks	(0.1)	(0.3)	(0.1)	(10.5)	(15.7)	(15.2)	(10.4)
Unclassified Assets	7.4	7.7	9.3	5.4	13.1	7.3	11.3
Assets - Liabilities	58.2	59.7	84.2	123.9	162.3	174.2	224.0
Private Sector Deposits 2/	-	-	0.2	1.6	4.1	3.3	8.7
Public Sector Deposits	5.0	6.4	7.1	12.4	13.6	13.3	2.3
Central and Local Government	(0.1)	(-)	(-)	(4.6)	(1.6)	(0.4)	(2.0)
Public Authorities	(-)	(0.1)	(-)	(0.3)	(3.7)	(4.6)	(0.2)
Public Sector Companies	(4.9)	(6.3)	(7.1)	(7.5)	(8.3)	(8.3)	(0.1)
Bonds	3.9	3.8	3.7	3.4	3.5	3.5	3.4
Funds Due to Banks	23.3	21.4	42.7	68.1	94.8	110.0	154.3
Central Bank	(0.2)	(0.2)	(24.2)	(52.5)	(78.2)	(91.9)	(137.4)
Commercial Banks	(23.1)	(21.2)	(18.5)	(15.6)	(16.6)	(18.1)	(16.9)
Capital Accounts	19.3	20.9	22.6	25.5	30.9	30.8	38.7
Unclassified Liabilities	6.7	7.2	7.1	12.9	15.4	13.3	16.6

1/ The balance sheets of the mortgage banks were not affected by the unification of the official and parallel exchange rates at the beginning of 1979.

2/ Includes cooperatives.

SOURCE: Central Bank of Egypt as quoted by, Arab Republic of Egypt - Recent Economic Development, IMF, 1981, p. 92

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The primary conduits for housing funds provided by the Central Bank are the CFE and GABHC. Credit Foncier Egyptien is the largest source of mortgages for the private sector. It typically borrows from the Central Bank at the Bank's current discount rate (as of mid-1981 at 12 percent per annum) and on-lends to mortgagees at 1.5 percent below the discount rate for general purpose loans and 2.5 percent below the discount rate for economic housing loans. Its lending periods are generally 5 to 15 years.

CFE is able to offer mortgages at rates below its borrowing rates through mixing its source of funds for mortgage moneys with time deposits by public sector companies, bonds and loans from other commercial banks. Then through adopting a policy of cross-subsidizing residential loans with office real estate, and commercial loans at more economic rates, it is able to offer 61 percent of its loan portfolio (roughly L.E. 173 million as of the first quarter of 1981) to individual mortgages, many of them aimed at families with modest incomes.

Credit Foncier Egyptien also benefits from a pass-through program to the General Authority for Building and Housing Cooperatives in two ways:

i) It borrows funds from the Central Bank at commercial rates and on-lends this money to the GABHC at those rates plus an additional 1.5 percent service charge; and

ii) It makes up the difference between the loan ceilings imposed by the GABHC on cooperative loans and total unit costs for individual mortgages benefitting from GABHC's subsidized housing loan program (see the description of GABHC's loan program below for details).[3]

In spite of the joint lending agreements between the CFE and the GABHC, mortgage loans to individual borrowers are frequently not sufficient to attract low and moderate income households due to the additional requirements for down payments or advance deposits required by developers. Mortgage loans to the private sector are generally granted at a percentage of the appraised value of the dwelling under construction. Since these appraisals are generally below market prices for construction, mortgage financing sometimes provides as little as 40 percent of actual cost of construction.[4] In such a case, a potential mortgagee, if he has 60 percent of the capital of a new unit, could just as easily hire a small contractor and construct a house incrementally through informal sector processes.

The General Authority for Building and Housing Cooperatives was established to provide subsidized loans to cooperatives throughout the country. Unlike the CFE, which is a fiduciary institution under the Ministry of Economy, the GABHC is a specialized public authority established under the Ministry of Housing (Presidential Decree 793/1977).[5] The Authority's primary functions are to provide finance to cooperatives and prepare housing cooperative projects.

The primary major sources of finance for GABHC have traditionally been loans obtained directly from the Central Bank or through Credit Foncier Egyptien. In both cases, GABHC receives loans at current discount rates and on-lends to cooperative societies at subsidized rates. Since 1976, its volume of activities has increased dramatically as is shown in Table VIII-2.

TABLE VIII-2
SOURCE OF FUNDS FOR THE GENERAL AUTHORITY FOR BUILDING AND HOUSING COOPERATIVES

YEAR	AMOUNT (L.E. Millions)	SOURCE	TERMS
1976	6	Central Bank	N.A.
1978	50	Central Bank	N.A.
1979	25	Central Bank	N.A.
1980	75		
	(50)	CFE	10% over 30 years
	(25)	CFE (Arab)	10% over 30 years
1980/81	150	Central Bank	10% over 30 years (1980)
		CFE	11.5% over 30 years (1980)
		CFE	13.5% over 30 years (1981)
1981/82	400	(Probably Central Bank)	not established

SOURCE: Chairman of the Board of Directors, General Authority for Housing and Building Cooperatives (discussions held in 1980/1981).

In 1976, a major policy shift was made in an attempt to broaden the client group served by GABHC away from upper income groups. Loan ceilings were imposed on the amounts which individual cooperative members could borrow from GABHC. Furthermore, higher interest rates were imposed on larger loan sums. However, the overall policy of subsidized interest rates was maintained as the maximum interest charged is 5 percent while Central Bank discount rates as of mid-1981 are now 12 percent.

One of the major impacts of this program was to reduce the percent of financing available to borrowers, as GABHC's current program, as shown in Table VIII-3, now represents about 50 percent of the value of investments being made in housing. In its own housing construction progams such as the one shown in Part Three of UGUDR, GABHC projected mortgage financing ranges from 33 percent of the costs of its lowest priced units (about 8 percent of the project's units) to 50 percent of the highest priced units (L.E. 12,000/ unit or 27 percent of the total number of units in the project.) Under the subsidized interest rates of the program, households in the 40th to 50th percentiles of urban income could afford the lowest priced units.

TABLE VIII-3
UNIT SIZE AND LOAN CEILINGS OF GABHC

UNIT TYPE	MAXIMUM UNIT COST	LOAN CEILING (L.E.)	MAXIMUM LOAN % AVAILABLE	TERMS	PERCENT OF CURRENT PROGRAM (%)
Economic	60	4,000	90	3% over 30 yrs	40
Moderate	130	6,000	80	3% over 30 yrs for the first L.E. 4,000 and 5% over 25 yrs for the next L.E. 1,000	60

SOURCE: Discussions with the Chairman of the Board of Directors, GABHC, August and September 1980.

There are numerous benefits to individuals in becoming members of cooperatives. For example, under Law 14/1981 (the most recent legislation pertaining to cooperatives), they have preferential access to housing finance as may be provided by the Ministry of Finance. State lands are sold to cooperatives at a minimum of 25 percent less than their appraised value, this provision can be increased to a maximum of 50 percent. Under Chapter 10 of the law, the societies are exempted from most central and local government taxes such as: taxes and duties, customs and fiscal taxes and duties, building permit and subdivision license fees, and taxes pertaining to contracts and sales. Furthermore, establishment of a cooperative society requires only an initial capital of L.E. 300 and 30 members.

The Housing and Development Bank was established as a development bank (Law 43/1974) in 1979 with an initial subscription capital of L.E. 18 million. Its primary shareholders are other public banks and insurance corporations. It began operations with an initial Central Bank loan of L.E. 80 million (at 10 percent over 30 years) of which it is lending portions of those funds at 11 percent to finance construction of new towns. The remainder of those funds is earmarked for low income (economic) housing programs, roughly L.E. 70 million.

HDB's policy calls for it to lend to projects which have a minimum size of L.E. 1 million, but which are directed for low income beneficiaries. These eventual beneficiaries will receive loans at terms granted by the cooperatives, but they must devote up to 25 percent of their income to loan servicing. Bank policy also aims at serving groups which have income ranging between L.E. 30 to L.E. 200 per month. As with GABHC, the difference between HDB lending rates and Central Bank lending rates will be made up by subsidies from the Treasury to HDB. However, unlike the cooperatives, HDB also engages in commercial and real estate loans which would enable it to develop cross-subsidies and reduce the need for Treasury grants.[6]

The Housing Fund established in the governorates are a source of non-bank funds for financing housing. These funds have as their sources the sale or lease of public lands by the governorates. The activities of governorate housing funds vary considerably according to size of the funds, the capacity of the governorate to plan and administer the funds and the demand for governorate land. An example of a governorate financed housing project is demonstrated in the Berket and Dewaka projects of the Governorate of Cairo. (See Part Three, VI of UGUDR)

C. Expansion of Housing Finance

Although there has been significant growth in mortgage bank lending activity, the bulk of this growth has resulted from increased lending by the Central Bank to the sector. Although private sector deposits in mortgage banks gave grown by more than 350 percent since 1977, they still account for only abour 4 percent of total sources of funds for mortgages.[7] Furthermore, much of this increased activity has centered on pass-through financing to the cooperatives from the Central Bank. As is shown in Table VIII-1, claims on the private sector (including cooperatives) and the public authorities (the GABHC being the principle beneficiary agency) account for roughly 89 percent of the mortgage banks portifolios. However, this L.E. 199 million in mortgage bank assets (or loans) is matched by only about L.E. 9 million in deposits by the private sector and public authorities.

Egypt, like many developing countries, has large untapped financial resources represented by household savings. Due to increases in worker remittance this financial resource is especially significant if potential for expanding the base of the formal housing finance sector away from its traditional source of funds, i.e., the Central Bank. Since private sector savings are such a small component of mortgage bank liabilities, a more general reveiw of savings needs to be made to reveal changes in savings trends.

Analysis of savings rates, particularly private sector savings rates as an indicator of future sources of funds for housing finance, indicate that while there have, at least nominally, been some improvements in growth of private sector savings, these have not been spectacular. Earlier assessments of potential savings rates in the economy have indicated that the cash component of money supply has covered above 50 percent of total money supply; in fact, by the end of 1978, it accounted for more than 53 percent of total money supply. Changes in interest rates on time and savings depostis to make them more attractive to savers in 1980 have lead to small increases in bank holdings as the currency component of money supply had dropped to 47 percent by the third quarter of 1980 and private sector time and savings deposits had grown from 23 percent of money supply in 1978 to 35 percent by September 1980. However, this expansion of savings in nominal terms was also accompanied by high rates of growth in money supply averaging 30 percent between 1976-1979 and reaching 35 percent in the 12-months ending September 1980.[8] Thus, in real terms expansion of private sector saving has been far less dramatic, but the potential for expansion of the resource base of public sector housing finance still remains.

FOOTNOTES

1 Various sections of the Informal Housing in Egypt report. See also the Joint Housing Team report on Immediate Action Proposals for Housing in Egypt and the "Housing and Construction Industry in Egypt" Interim Working Paper. Cairo University/MIT, 1978.

2 See Section 3.7 of the Informal Housing in Egypt, Draft Report.

(Section B)

3 Discussions with the Chairman of the Board of Directors of Credit Foncier Egyptien as quoted in Working Notes for "Housing Finance, an Analysis of the Prospects for Increased Activity." Prepared for U.S. Agency for International Development by the National Savings and Loan League. March 1981.

4 Pratt, Richard T. Housing Finance in Egypt, Prospects for Development, prepared for U.S. Agency for International Development. July 1979. p. 6

5 The Authority's actual operations began in 1961 with initial loans from the Central Bank of L.E. 2-3 million. Presidential Decree 793/1977 modified its structure under the Ministry of Housing, while Law 14/1981 modified some of the provisions of previous laws pertaining to cooperatives.

6 Discussions held with the Chairman of the Board of Directors of the Housing and Development Bank, July 1980, and also February 1981, the latter being quoted in working notes of the National Savings and Loan League.

TABLE IX-1
PROJECTED NEW DWELLING UNIT REQUIREMENTS OF THE NATIONAL HOUSING PLAN
(In Thousands)

GOVERNORATE	NUMBER OF SEPARATE ROOMS REPLACED 1/	UNITS NEEDED FOR NEW HOUSEHOLD FORMATION 1976-2000 2/	TOTAL NO. OF DWELLING UNITS REQUIRED
Cairo	299	319	618
Alexandria	134	250	385
Port Said	7	33	40
Suez	2	62	63
Damietta	-	30	30
Dakahlia	-	72	72
Sharkia	2	65	67
Qalyubia	26	127	153
Kafr El Sheikh	1	34	35
Gharbia	10	78	88
Menoufia	5	26	31
Beheira	19	53	72
Ismailia	5	30	36
Giza	31	357	388
Beni Suef	--	34	34
El Fayoum	4	30	34
Minia	7	46	53
Assiut	1	51	52
Sohag	1	35	35
Qena	-	37	37
Aswan	-	30	30
Remote Governorates	3	84	87
TOTAL	557	1,883	2,440

1/ The Plan assumes that a single household occupies each of the separate rooms.

2/ Derived by assuming household sizes of 5.2 persons per family and that each family requires an apartment.

SOURCE: A.R.E., National Housing Plan, Ministry of Housing, November, 1979.

(Section C)

7 See Table VIII-1 of this section.

8 See Table 49, Arab Republic of Egypt - Recent Economic Developments, IMF, January 23, 1981. See also Part Two, III of UGUDR.

IX. THE NATIONAL HOUSING PLAN OF 1979

Recognizing a need to develop a national approach to persistent housing problems, the National Housing Plan was developed under the Ministry of Housing in 1979 to provide a comprehensive approach to provision of new dwelling units, to improve the capacity of the construction industry to build housing and to provide associated community services. While the Plan was national in scope, it focused its analysis on urban areas and projected a need to construct 3.6 million new urban units by the year 2000. This requirement was derived by replacing the 1976 housing shortage of 555,300 units (partially explained by the difference between public sector construction ennumerated by the census and partially explained by the Plan's assumed replacement of dwelling units which were labelled as rooms by the census), an estimated 1976-1979 backlog of 275,700 units, a replacement demand of 589,000 units largely located in deteriorated buildings, and a net additional requirement for 2.18 million units for the expected urban population increase.[1]

The committee charged with preparation of the National Housing Plan detailed a construction program for the years 1981 through 1985 in which it projected construction of 675,000 units at a total cost of L.E. 7.3 billion (1979 costs). This Plan which is detailed in Table IX-1 proposed that the public sector share of housing construction should increase from about 5.3 percent of housing constructed between 1966 and 1976 to 26 percent. About 44 percent of the Plan's projected costs would be due to housing and local community services. The remainder resulted from infrastructure costs, construction equipment and investments in the building materials industries to increase their capacities.

Details of the composition of the 110,000 units to be built during the first year of the Plan are presented in Table IX-2. Units sizes range from the Plan's minimum house size of 45 square meters to 120 square meters for luxury housing.

TABLE IX-2
COMPOSITION OF HOUSING UNITS, NATIONAL HOUSING PLAN, 1981

TYPE OF UNIT	% OF TOTAL UNITS	AREA M.2	COST PER M.2	UNIT COST L.E.	NUMBER OF UNITS	TOTAL COST L.E. (millions)	DENSITY (PERSON PER FEDDAN) EXISTING TOWN	DENSITY (PERSON PER FEDDAN) NEW TOWN
Economic A	20	45	45.8	2,061	22,000	45,342	400	200
Economic B	35	50	53	2,650	38,500	102,025	350	180
Medium A	25	70	59	4,130	27,500	113,575	300	160
Medium B	12	80	64.5	5,160	13,200	68,575	250	140
High A	6	100	70	7,000	6,600	46,200	200	120
High A	2	120	75	9,000	2,200	19,800	150	100
TOTAL OR WEIGHTED AVERAGE	100	66.5	60.5	4,023	110,000	396,017	362.5	180

SOURCE: A.R.E., National Housing Plan, Ministry of Housing, November, 1979.

Unit costs estimated by the Plan tended to be lower than unit costs quoted in the settlement project characteristic tables (Part Three of the UGUDR) because the Plan hopes to achieve greater efficiencies in building construction.[2]

The Plan projected that about 40 percent of the financing for construction would have to be derived from foreign aid and grants, as only about 44 percent of the Plan's costs could be financed from conventional sources. The remaining portion of the Plan's costs would be financed through special savings programs and sales of housing bonds. (Table IX-3)

Due to the high standards of the Plan and resulting high unit costs, the Plan estimates that only about 4 percent of the Plan's beneficiaries could afford these units without some form of subsidy.[3] Although details are not provided, the Plan estimates that households having average incomes of L.E. 600 per year would require average capital subsidies of L.E. 400 per unit. It also projects a continuation of the policy of subsidizing interest rates for mortgage loans. Thus, beneficiaries would receive loans at 3 percent to 5 percent annual interest over 25 to 30 years. If deficits occurred because of the differences between Central Bank discount rates and mortgage lending rates, the Plan would continue the present policy of providing direct budgetary grants to mortgage institutions. (Table IX-4)

The Plan does not formulate specific policies for private sector housing which, according to the Plan, is expected to construct 74 percent of housing between 1981 and 1985. Rather, the Plan estimates total infrastructure requirements for the expected new population and projects public and private construction sector requirements.

TABLE IX-3
NATIONAL HOUSING PROGRAM, COST & SOUCES OF REVENUES

	1981	1982	1983	1984	1985	TOTAL
Number of Housing Units (Public & Private Sector) (in 000's)	110	125	135	145	160	675
Public Sector Share	28%	26%	26%	26%	24%	26%
Cost Components (In million LE)						
Total Cost of Plan	1,455	1,500	1,466	1,419	1,508	7,348
Housing cost (incl. community services) of which:	530	603	650	690	770	3,243
Housing net of community services	395	449	484	514	574	2,417
Infrastructure (Water, Sewer, Electricity, Telephones, Roads, Transport)	394	420	436	452	478	2,180
Construction Equipment	100	110	120	130	140	600
Investment, Building Materials Industry	431	367	260	147	120	1,325
Sources of Funds (In million L.E.)						
Local currency of which:	825	867	904	883	954	4,433
from conventional, existing sources	412	513	634	778	949	3,286
Foreign currency	630	633	562	536	554	2,915
Foreign currency as % of total	43%	42%	38%	38%	37%	40%
GDP at Market Prices (million L.E.)	12,147	13,519	15,114	16,927	18,992	69,585
Projected GDP Growth Rate	11.3%	11.8%	12.0%	12.2%		
Total cost as % GDP	12.0	11.1	9.7	8.4	7.9	10.6
Housing & Infrastructure as % of GDP	7.6	7.6	7.2	6.7	6.6	7.8

SOURCE: National Housing Plan of the Ministry of Housing, as quoted by the unpublished Arab Republic of Egypt, National Urban Sector Report, Vol. 1, "The National Situation." (IBRD) February 1981. n Sector Report,

FOOTNOTES

1 The Plan used as a basis for its population projections the 1976 CAPMAS projections shown in Part Two, II.E of the UGUDR.

2 At the time of preparation of the Plan, these costs might have been feasible since both the Cairo Governorate and the General Authority for Housing and Building Cooperatives had received tender bids for construction of units of similar sizes for prices ranging L.E. 38 to L.E. 67 per square meter.

3 National Housing Plan, Appendix 7, p. 55.

TABLE IX-4
HOUSING FINANCE REQUIREMENTS OF FIVE-YEAR PLAN OF NATIONAL HOUSING PLAN

	1981	1982	1983	1984	1985
No of Units (000's)	110	125	135	145	160
Capital 1/	530	781	1,038	1,371	1,860
Interest Rate Subsidies 2/	--	28	60	94	130
Less Down Payments 3/	530	790	1,020	1,361	1,822

1/ Assumes National Housing Plan average cost of L.E. 4,130 and 23 percent average inflation in construction costs.

2/ Assumes Central Bank lending rates of 12% over 30 years and Cooperative Program average lending rates of 3.35 over 30 years and 23 percent inflation.

3/ Assumes 90 percent financing and that deposits would be paid at the time of granting mortgage loans.

SOURCE: A.R.E., National Housing Plan, Ministry of Housing, November 1979.

Part Five: Urban Development Management and Administration

I. Introduction

II. The Constitutional Framework

III. The Structure of the National Government

IV. National Level Public Economic Units

V. The Suez Canal Authority

VI. Decentralization and Local Government

VII. Cairo Governorate: An Administrative Profile

EGYPT NUPS

دراسة السياسة القومية للتنمية الحضرية

NATIONAL URBAN POLICY STUDY

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PART FIVE

URBAN DEVELOPMENT MANAGEMENT AND ADMINISTRATION

I. INTRODUCTION

In the 1978-82 Five Year Plan, the Government recognized the importance of administration in the success of its policies and programs. The plan had as its administrative objective "to ensure and promote national decision-making at both the national and the unit level". It expects to achieve national decision-making through such measures as:

i) The establishment of strong agencies for ministerial coordination to better guarantee consistent social and economic procedures.

ii) The strengthening of planning and follow-up agencies to assure consistency in priority decisions and to promote and foster execution of agreed-upon policies and projects.

iii) An easing of the control imposed on public enterprises to allow administrative and organizational initiative at the level of the economic unit.

iv) Provision for decentralized decision-making as a necessary condition for reducing bureaucratic procedural entanglements.

National decision-making depends on the nature of the governmental organization, which in turn influences national urban policy. Part Five of this report summarizes the present Egyptian Government structure. It is organized into five sections.

The first section covers a brief summary of the Constitutional Framework of Egypt.

The second section describes the structure of the "Public Economic Units".

The third section outlines the structure of National Government essentially through the device of presenting the objectives, functions and organization charts of the various ministries and major sub-units (although the charts do not always present an accurate picture of the major activities of the Ministry).

Coordination between ministries and within the various sections of individual ministries is a major problem, as is the case in most countries, although the President/Prime Minister has recognized the need for ministerial coordination. The President has consolidated planning and finance activities under a single Deputy Prime Minister. This is intended to improve coordination among those functions.

The cabinet now has a Committee for Policies and Planning; but the committee does not have a staff to help bring about ministerial coordination. Within the Ministries themselves, there has developed an overlapping of functions.

The amalgamation of the Ministries of Housing and Land Reclamation with the Ministry of Development under the control of a single Minister is both a sign of the Goverment's commitment to development as well as the recognition that, with the large number of development projects in these three fields, there must be more effective coordination and supervision of their functions.

The New Communities program has been spun off from the Ministry of Development but remains under the jurisdiction of the Minister, who is chairman of the new Urban Communities Authority which has responsibility to establish implementing agencies for the new communities. This is designed to free the Minister and the Government from the requirements of the civil service law and the salary schedules applicable to civil servants in order to secure the most competent personnel.

The fourth section deals with the issue of decentralization and the structure of local government. Government policy has moved aggressively to decentralize functions in the governorates. Thus, education, health, social affairs among other functions have been placed under the jurisdiction of the Governorates. Governorate budgets now contain appropriations for these functions and all personnel can be transferred by order of the Governor. All Governors carry the rank of Minister and are equal to the Ministries with respect to rank and salary, powers and protocol.

A study of the national Ministries, however, indicates a reluctance on the part of the national bureaucracy to decentralize actual power to the Governorates. Final decisions on the budgets for the Governorates are still made by the Ministry of Finance. The finance officer in the Governorate gets his instructions from the Ministry of Finance concerning the budget and in this manner the central government ministry exercises power over expenditures in the Governorate. Funds which are raised by the Governorate are collected by departments of the Ministry of Finance and included in the budget given to the Governorate by the Ministry of Finance.

The fifth section provides an administrative profile of the Cairo Governorate and discusses the particular issues concerned with governorance of Egypt's primate city.

II. THE CONSTITUTIONAL FRAMEWORK

The Egyptian Constitution was adopted in 1971 and amended in 1980. The President, the People's Assembly, the Socialist Prosecutor, the Judicial System, the Consultative Council, and the Cabinet are the key constitutional agencies of Government in Egypt.

The 1971 permanent Constitution of Egypt is an outcome of the May Revolution launched by President Sadat. In 1980, some key amendments were introduced according to the constitutional procedures provided by Article 189. They include: 1) The creation of the Shura Council. 2) The election of the President to unlimited consecutive terms. 3) The introduction of the multi-party system to replace the one-party system (The Arab Socialist Union). 4) The "Sharia" became the main source of Egyptian Law.

A. The President

The President is the Head of State and responsible for maintaining the boundaries between the executive, legislative and judicial branches of the Government in a manner which will ensure that each shall perform its role in the nation.

The People's Assembly nominates a candidate to the presidency. The nomination is referred to the people for a plebiscite. The President assumes the executive power and in conjunction with the Government lays down the general policy of the State and supervises its implementation. The President of the Republic may appoint one or more Vice-Presidents, the Prime Minister, his deputies, and the Ministers and their deputies and relieves them of their posts. The President of the Republic plays the predominant role in running state affairs and the functioning of the executive authority.

B. The People's Assembly

The People's Assembly exercises the legislative power and approves the general policy of the State, the general plan of economic and social development and the general budget of the state. It exercises formal control over the work of the executive. The People's Assembly consists of at least 350 members chosen from constituencies determined by law, at least half of whom must be workers and farmers. The President may appoint a number of members not exceeding ten.

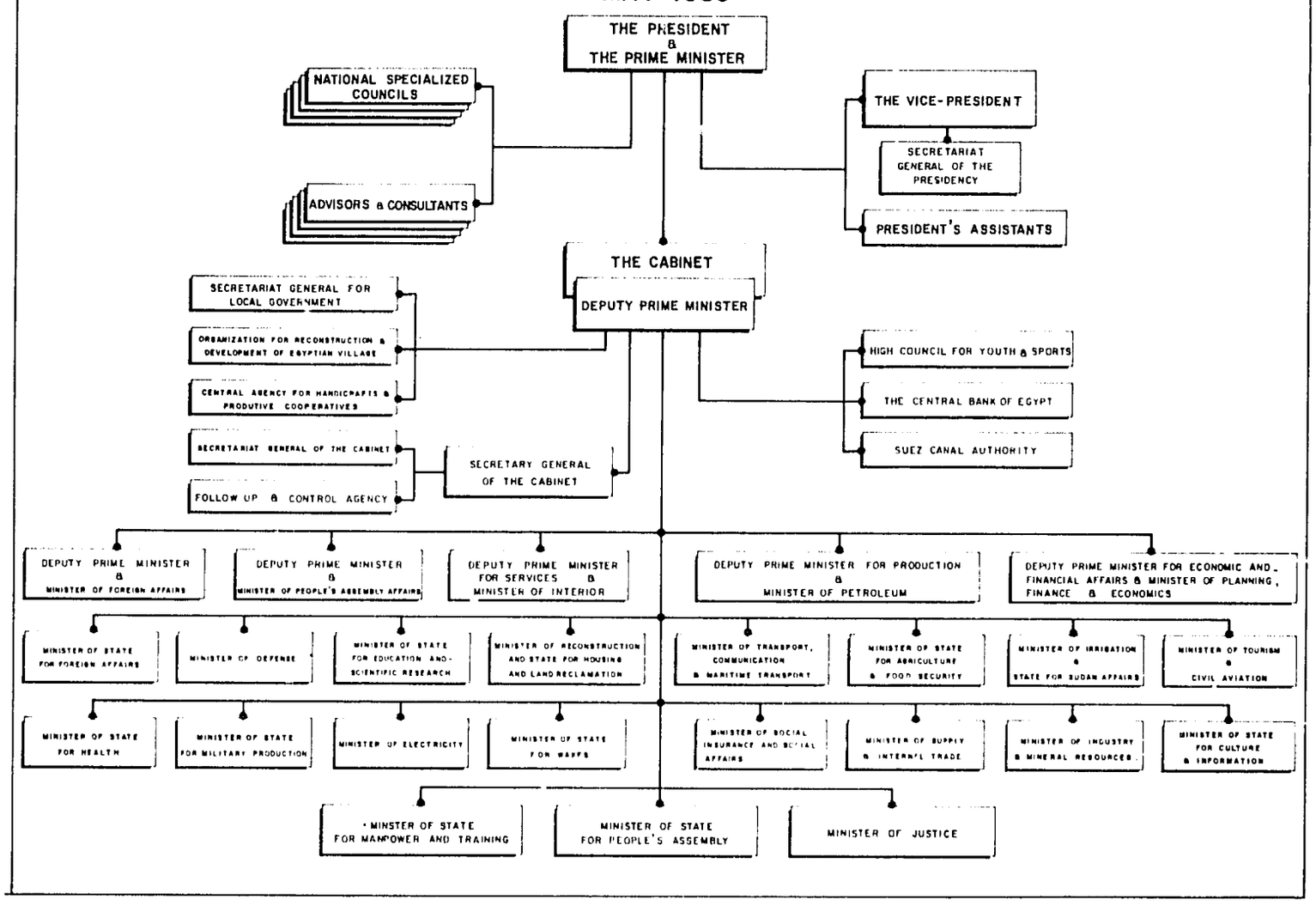
Any legislation to be approved by the Assembly has to acquire the support of the absolute majority. The President of the Republic and every member of the People's Assembly has the right to initiate legislation. Legislation proposed by the executive branch has to be presented to the Assembly under the signature of the President, however.

The President of the Republic has the right in exceptional cases and on the authorization of the Assembly to issue decrees having the force of Law on condition that they should be submitted to the Assembly on the first meeting after their issuance. If they are not submitted or are not approved, they cease to have the force of Law. The Assembly has no right to introduce any amendments to such resolutions, it has to accept such a resolution as it is, or reject it.

The Ministers are collectively responsible to the People's Assembly. In addition, every Minister is responsible for the actions of his Ministry. The People's Assembly may decide to withdraw its confidence from any of the Prime Minister's deputies or from any of the Ministers or their deputies. The People's Assembly determines the responsibility of the Prime Minister and submits a report to the President of the Repubic. The President may return such a report to the Assembly within ten days. If the Assembly ratifies it once again, the President of the Republic may refer it to a referendum. If the referendum does not support the Government, the Assembly shall accept the resignation of the Cabinet.

FIGURE II-1

GENERAL ORGANIZATION OF THE EXECUTIVE BRANCH OF THE EGYPTIAN GOVERNMENT MAY 1980



1. Central Agency for Auditing

The Constitution and laws stipulate that the Central Agency for Auditing will serve at the pleasure of the People's Assembly. It is requested to submit the final account of the State Budget to the People's Assembly within a period of one year from the expiration of the fiscal year, as well as the observations of the Central Agency on the implementation of the general plan and budget of the State.

2. The Socialist Public Prosecutor

The Socialist Public Prosecutor is responsible for taking the procedures which secure the people's rights, the safety of the society and its political system, the preservation of the socialist achievements, and commitment of the socialist behaviour. He is subject to the control of the People's Assembly.

C. The Consultative Council (Maglis El-Shura)

This is a representative body composed of not less than 132 members. Two thirds of its members are elected, the other third is appointed by the President of the Republic. Fifty percent of the members shall be workers and farmers. The duration of the Council is six years; half of the members shall be renewed every three years.

The New Council has no legislative power and is intended to study and propose whatever would foster and preserve the principles of the resolutions of 23rd of July 1952 and 15th of May 1971, strengthen the National Unity, safeguard the working class alliance and the socialist achievements. It is advisory to the President and the Government and can examine only those things requested by the President and the Government.

D. The Judicial Authority

The Judical Authority is independent. It is exercised by the Courts of Justice of different categories. The Supreme Constitutional Courts is an independent judicial body and undertakes responsibility for the explanations of the legislative texts.

E. The Cabinet

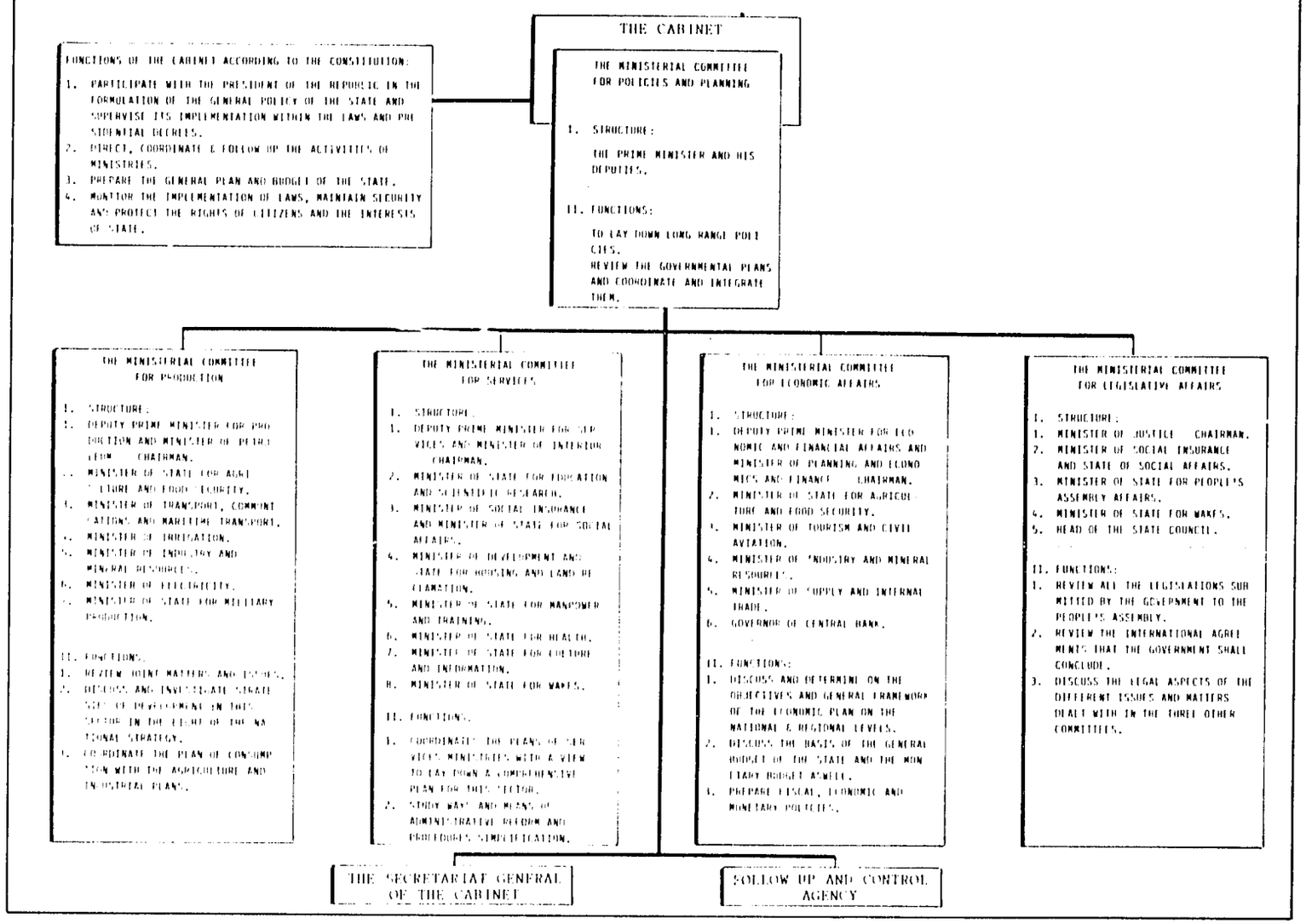
The Cabinet shares with the President of the Republic the executive authority.

Figure II-1 above presents the structure of the executive branch of the national government. It is a typical parliamentary system in which, however, the President of the Republic has extensive powers.

Figure II-2 presents the structure of the Cabinet, with its committees and its subordinate units. The committee structure is designed to coordinate the activities of the Ministries. The office of the Secretary-General is administrative in character. The head of the follow-up unit presently functions mainly as a reporting office.

The Prime Minister is simply first among equals and the Ministers are usually left to run their Ministries as they see fit. When there is a change of Ministers, there is frequently a change in policy if only because the new Minister wants to make his own reputation on his own policy. The problem of ministerial coordination is not peculiar to Egypt, but is a problem in any cabinet system of government.

FIGURE II-2
STRUCTURE AND FUNCTIONS OF CABINET COMMITTEES
MAY 1980



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III. THE STRUCTURE OF THE NATIONAL GOVERNMENT

The functions of the key ministries which will be involved in the development and establishment of a national urban policy can be classified as the Planning Process, the Budgetary Process, the Personnel System, the Development Ministries, the Infrastructure Ministries, and other ministries related to urban development.

A. The Planning Process and the Ministry of Planning

Planning began in 1960 when Egypt, under President Nasser, developed a comprehensive and ambitious national plan to run from 1960 to 1964. It was the first and only completed national plan. Due to the Egyptian special circumstances and the international situation, the use of annual development plans was adopted; the Government created the Ministry of Planning to perform economic planning.

In 1962, an Institute of Planning was established separate from the Ministry although under the jurisdiction of the Minister. It had two tasks: a research requirement for planning and the establishment of training programs to develop planners.

A network of planning departments was established across the different ministries, agencies and governorates. These planning units are to compile data, and to prepare the draft plans in their specialized areas — industry, agriculture, education, transport, etc. It is the role of the Ministry of Planning to integrate the different sectoral plans and produce an integrated, balanced and comprehensive national plan. The planning units in the governorates integrate the sectoral draft plan within the governorate in one balanced comprehensive draft plan.

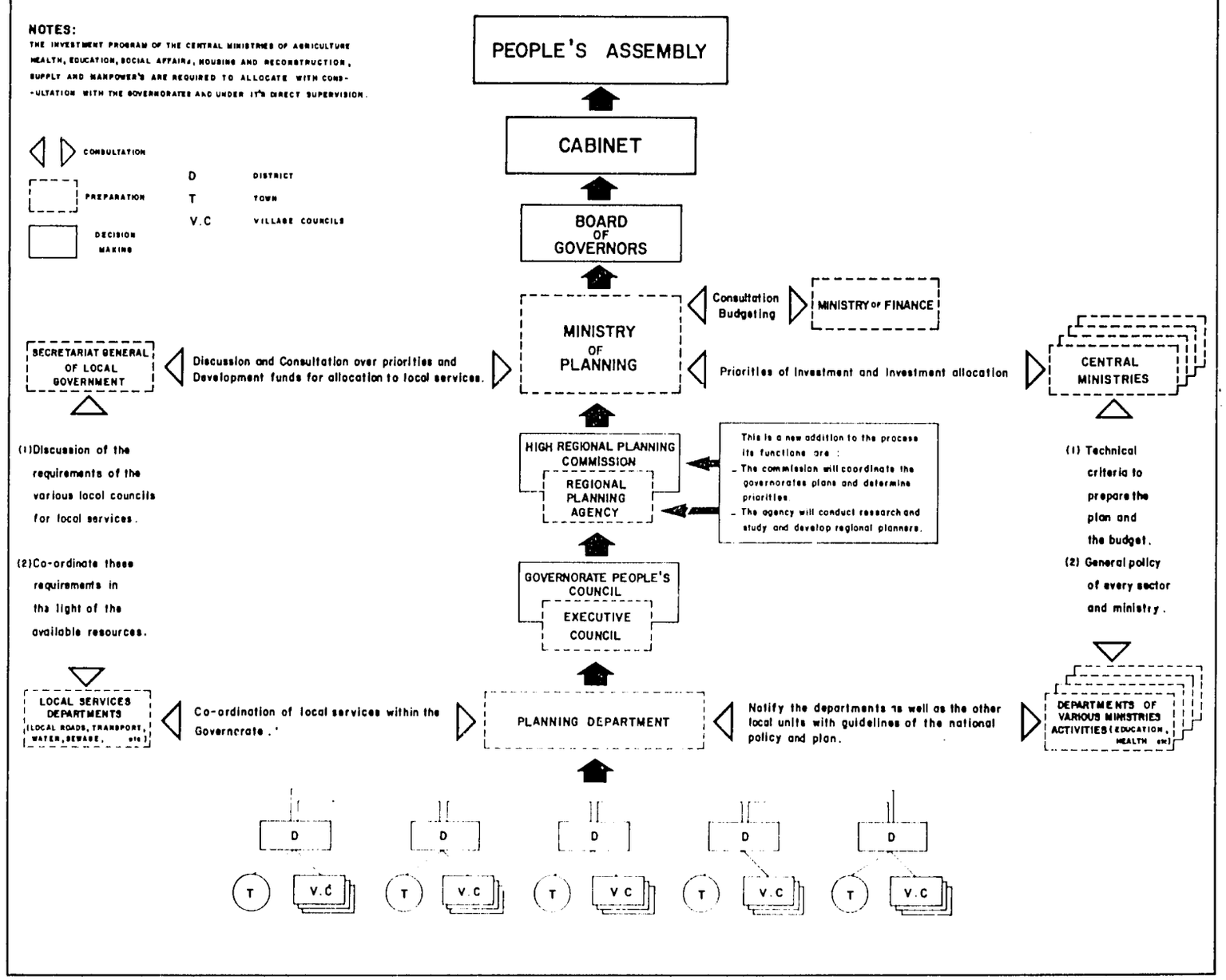
In the October Working Paper, President Sadat reemphasized a long-standing philosophy with respect to the planning process: "our principle stems from centralization in planning and decentralization in implementation".

In the 1975 and 1979 laws of local government, there were eight economic regions, with eight higher regional planning commissions and eight agencies for regional planning. Each is headed by an Under-Secretary of State and is affiliated to the Ministry of Planning.

Figure III-1 describes the planning process in Egypt according to Law No. 70/1973 and the law of local government. It is clear from Figure III-1 that the formal planning process is a rather complex one involving many Ministeries as well as the different levels of Government. There are problems facing all involved in the process. At the level of the Governorate, planning officers are unaware of the contents of the plan for their own Governorate. Decisions still remain centralized in the Central Ministries. Although it is not reflected in the formal process, the Ministry of Finance through its budget powers has exercised

FIGURE III-1

PLANNING PROCESS IN EGYPT



final control over all plans, subject of course to the orders of the Prime Minister and President.

Formally, the Ministry of Planning in Egypt is to control the allocation of investment funds to all governmental activities. It is to give direction to the investment program and most important to control the allocation of resources. The organizational structure of the Ministry of Planning is presented in Figure III-2.

In a recent development, the Ministry of Planning established a National Investment Bank. Its main resources are those investment funds allocated to various governmental departments (Chapter 3 of the Budget). The purpose of establishing such a bank was to give more flexibility and mobility to the implementation of development projects.

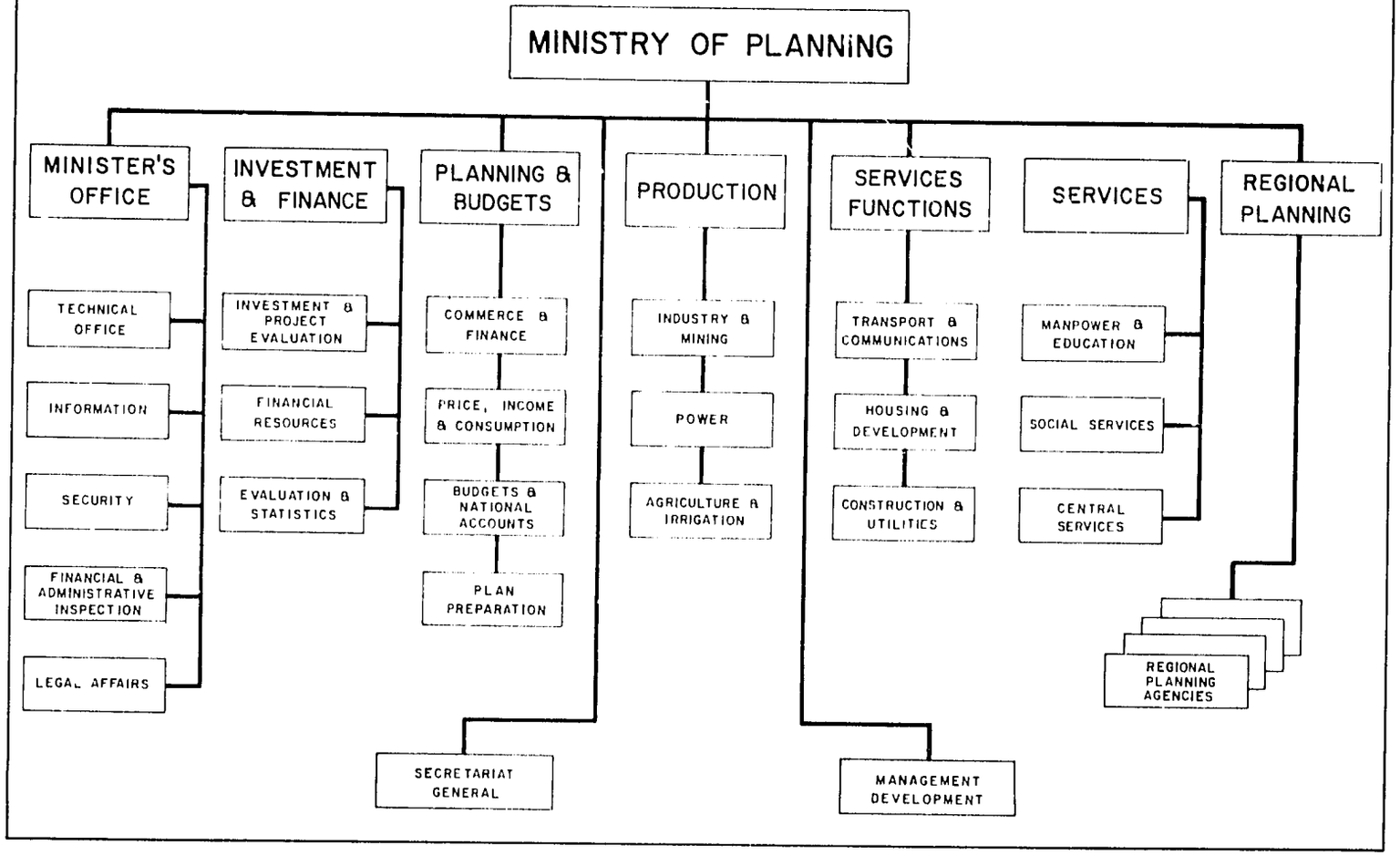
Planning got off to an excellent start when the 1960/64 plan was in operation. From then on it has been on the decline, although it would appear that there have been efforts recently to revive it. The creation of regional planning agencies has been one step. The linking of planning, finance and economy under a single Deputy Prime Minister is a second step.

Very little has been done to implement a regional approach to economic development. Despite its good intentions, the Ministry of Planning has been unable to provide the new regional branches with sufficient staff to function properly as planning offices. They are manned by an Under-Secretary and one or two other persons. They have been unable to involve all the relevant departments in the regional planning process or in the implementation of the plans.

There appears to be developing a problem with respect to regionalization and decentralization. On the one hand, government appears to be decentralizing powers to the Governorates and at the same time considering regionalizing decision-making on development priorities via the national planning mechanism.

FIGURE III-2

ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF PLANNING



B. The Budgetary Process and the Ministry of Finance

The Budgetary Process rests in the hands of the Ministry of Finance. Figure III-3 presents a picture of that process from the governorate through the Ministries to the Ministry of Finance. Finance is clearly one of the most powerful Ministries in the Government. The post audit however, is performed by a separate body under the People's Assembly - The Central Agency for Auditing.

Figure III-4 presents the calendar of the Budget. It spells out the time sequence involved in the formulation and adoption of the Budget. This is the formal process only.

Figure III-5 indicates the organizational structure of the Ministry of Finance. It should be mentioned that this Ministry still controls the old Chapter 3 of the Budget, even though the investment items are now within the jurisdiction of the National Investment Bank. It is as yet unclear how the National Investment Bank will relate to the Ministry of Finance and the Ministry of Economy, which are involved with the important internatonal and bilateral aid programs.

Some key points with respect to the budgeting process:

i) The Ministry of Finance plays a dominant role in determining the structure, the priorities and the amounts of the different sections of the budget.

ii) The Minister of Finance is faced annually with reducing the amounts requested by the various ministries and the elected local councils to a level consistent with estimated revenues for the total country. If serious conflicts emerge, the final level of appeal is the Prime Minister.

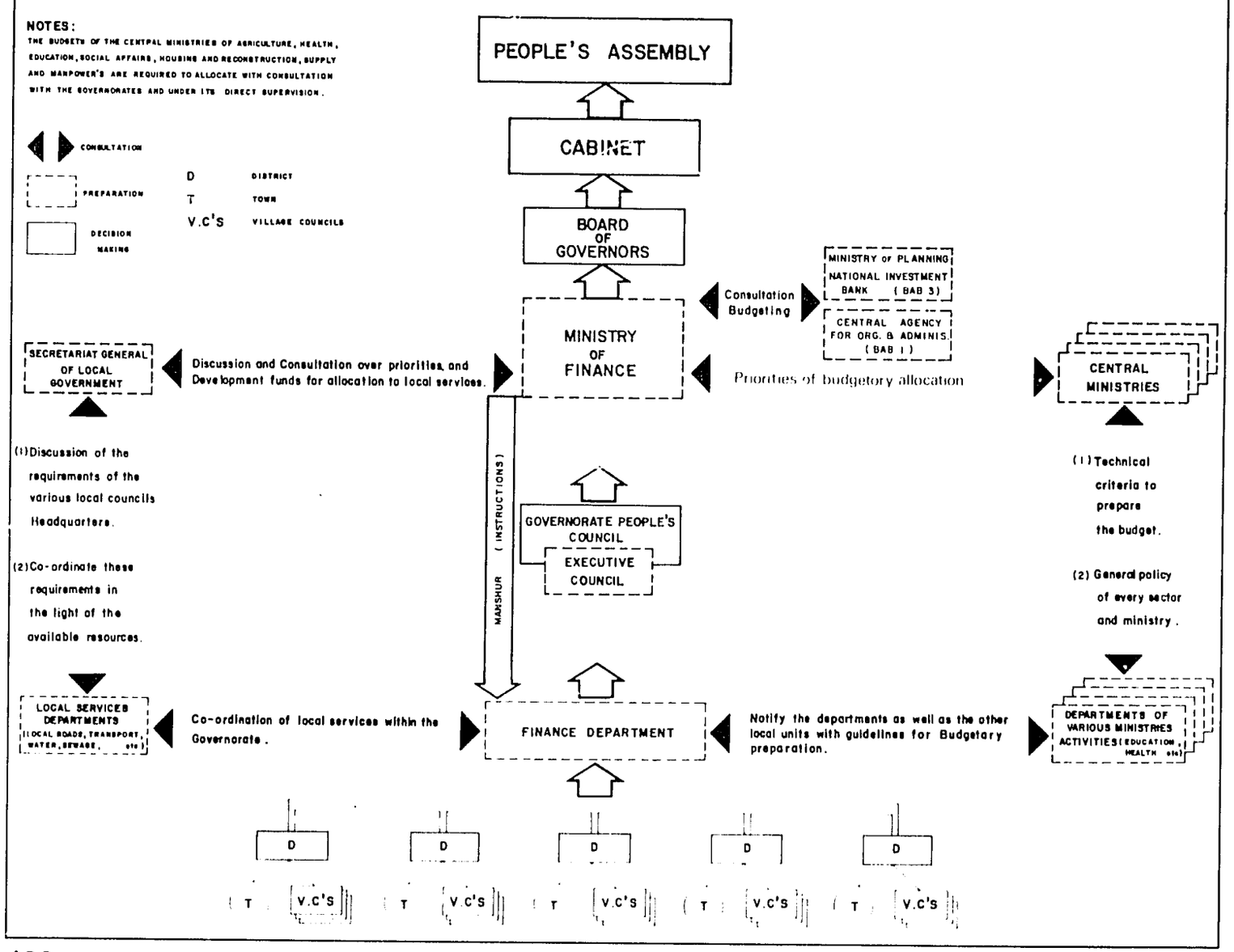
iii) Elected local councils have been criticized for adding requests, especially for Bab 3 projects, which eventually have to be cut at the ministerial level. Generally, a governor finds it politically advantageous to submit all budget requests as endorsed by the elected officials thus forcing the Ministry of Finance to perform the unpleasant task of cutting or trimming projects requested by local councils.

iv) The Egyptian budgetary system stresses the traditional budget functions of control and accountability rather than using it as an instrument for project evaluation, program monitoring or resource allocation. The Egyptian Government has considered a variety of ways to improve the budgetary system, the most recent of which is the establishment of the National Investment Bank. This last mechanism is too new to be evaluated.

v) The present budgetary system is oriented towards objects of expenditures (salaries, wages, bonuses, office supplies, new investments, etc.), and organizational responsibility for expenditures (identifying the appropriate level of accountability for each type of disbursement). A budget structured in this manner, provides only information concerning revenues and expenditure and does not facilitate the evaluation of alternatives.

FIGURE III-3

BUDGETARY PROCESS IN EGYPT



C. Ministry of Economy and Economic Cooperation

The Ministry of Economy is primarily concerned with economic cooperation with foreign countries, attracting investment and recommending monetary policies to the Government. As such, it is very important for the planning and budgetary processes. In the 1980 cabinet organization, the Ministry was placed under the Deputy Prime Minister for Economic and Financial Affairs, along with the Ministry of Planning and the Ministry of Finance. The integration of these three Ministries in the hands of a single Minister should help with the coordination of their activities, and improve both the planning and budgeting processes.

The Ministry's objective is to rationalize the economic activity and strengthen economic relations with the country's eight Economic Planning Regions and with international

FIGURE III-4

BUDGETING PREPARATION PROCEDURES CALENDAR
CENTRAL AND LOCAL GOVERNMENT

SEPTEMBER/OCTOBER

The Ministry of Finance evaluates projected estimates of revenues to be available for the budget of the next fiscal year (July/June), and established a set of guidelines ans specific procedures to be used by the various ministries and levels of local government in developing their individual budgets.

NOVEMBER

During this month, two types of activities are performed:

1. Manshur (detailed procedures for developing the budget) is sent to the financial department of each governorate and budget department in each ministry.
2. The Ministry of Planning also sends out a specific form on which each local council lists all investment projects (Bab 3) needed for the next year. All Bab 3 recommendations for villages, towns, and districts are made at the governorate level.

DECEMBER

During December, each local council studies and develops its budget for the comin year for Bab 1 (Wages) and Bab 2 (Curren Expenditures).

JANUARY

During January, the governorate finance department receives all draft budgets from its different local councils. This department is part of the governor's executive staff, but it works closely also with the Ministry of Finance. The head of this finance department, as the governor's chief financial counselor, puts all the draft budgets in proper form and incorporates them in one budget called "The General Draft Budget of the Governorate". The governor submits this draft to the executive and elected councils for approval.

FEBRUARY

Generally near the middle of february, each governorate will submit copies of its draft budget to both the Ministry of Finance and the Secretariat General of Local Government. Central Ministries will submit, in addition, one extra copy of Bab 1 (Wages and Salaries) to the Central Agency for Administration and Organization, and an extra copy of Bab 3 (Capital Investment) which goes to the Ministry of Planning.

MARCH/APRIL

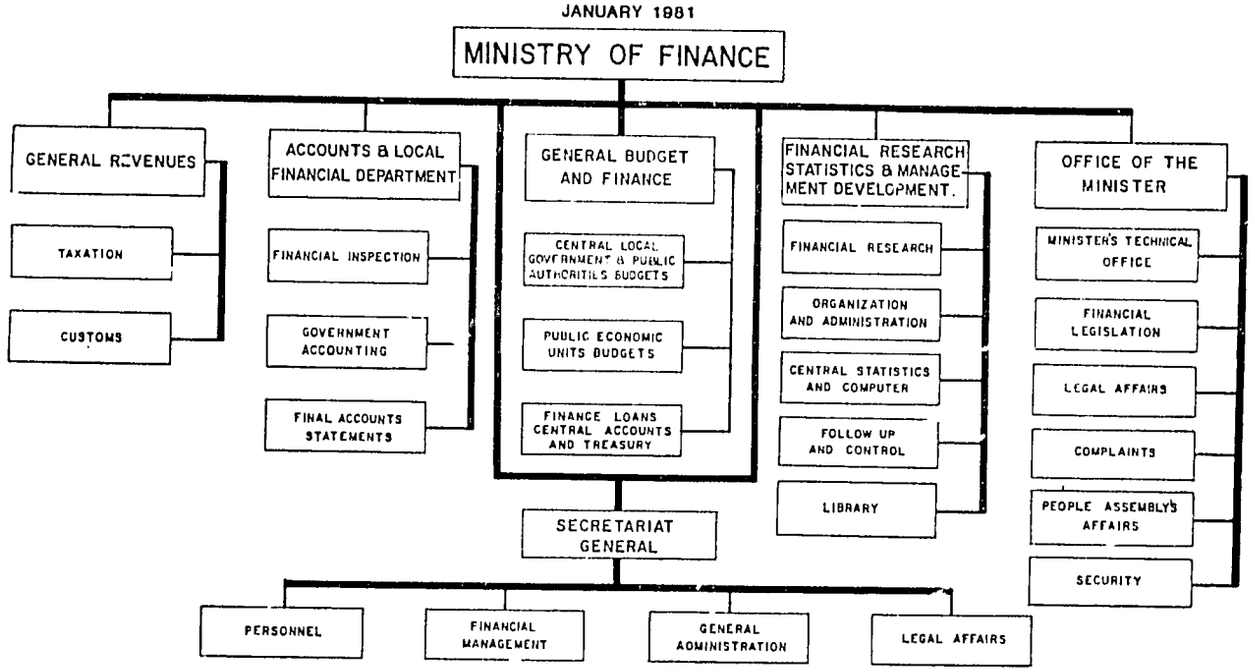
Ministry of Finance discusses and often negotiates these draft budgets with all of the ministries and governorates. Next, the Minister of Finance prepares a final draft budget which is submitted to the Board of Governors and, after that, to the Ministrial Committee for Policies and Planning to ensure its general consistency with Egypt's five-year plan. A final draft budget with most recommendations, amendments and changes included is then submitted to the Cabinet for final discussion, negotiation and decision.

MAY/JUNE

The draft budget is then presented to the People's Assembly. When the draft budget is approved, it becomes the "State Budget". The Ministry of Finance at this point communicates the final budget item, to the governorates and the various ministries. The governorate council distributes the capital investments to its districts, towns and villages. It is the responsibility of the governor to inform the local councils of the actual funds available in each budget category.

FIGURE III-5

ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF FINANCE
JANUARY 1981



organizations and agencies.

Its functions are:

i) to formulate economic policy and economic cooperation.

ii) to suggest financing and monetary policies.

iii) to prepare periodic statements on the foreign debt, and follow up its payment.

iv) to examine the requirements of the development plans on foreign exchange.

v) to attract foreign investments to Egypt.

vi) to conduct research and studies in the area of foreign exchange.

vii) to prepare the monetary budget and periodic financing programs, and follow up its implementation.

Its organizational structure is shown in Figure III-6.

D. The Personnel System

There are two agencies of government which are concerned with overall personnel matters: the Central Agency for Organization and Administration and the Ministry of Manpower and Training. Figures III-7 and 8 present their organization charts. The State Agency for Organization and Administration concerns itself with the application of the Civil Service law — training, job classification, organization and methods, specifically, as well as the implementation of all other provisions of the Civil Service law.

The Ministry of Manpower and Training is concerned with two major activities: recruiting and placement of all college graduates and returning servicemen into the public service, and vocational training in a wide variety of areas.

Problems have arisen in the administration of the personnel system. The division of the personnel function between two agencies raises

FIGURE III-6

ORGANIZATIONAL STRUCTURE FOR THE MINISTRY OF STATE FOR ECONOMY

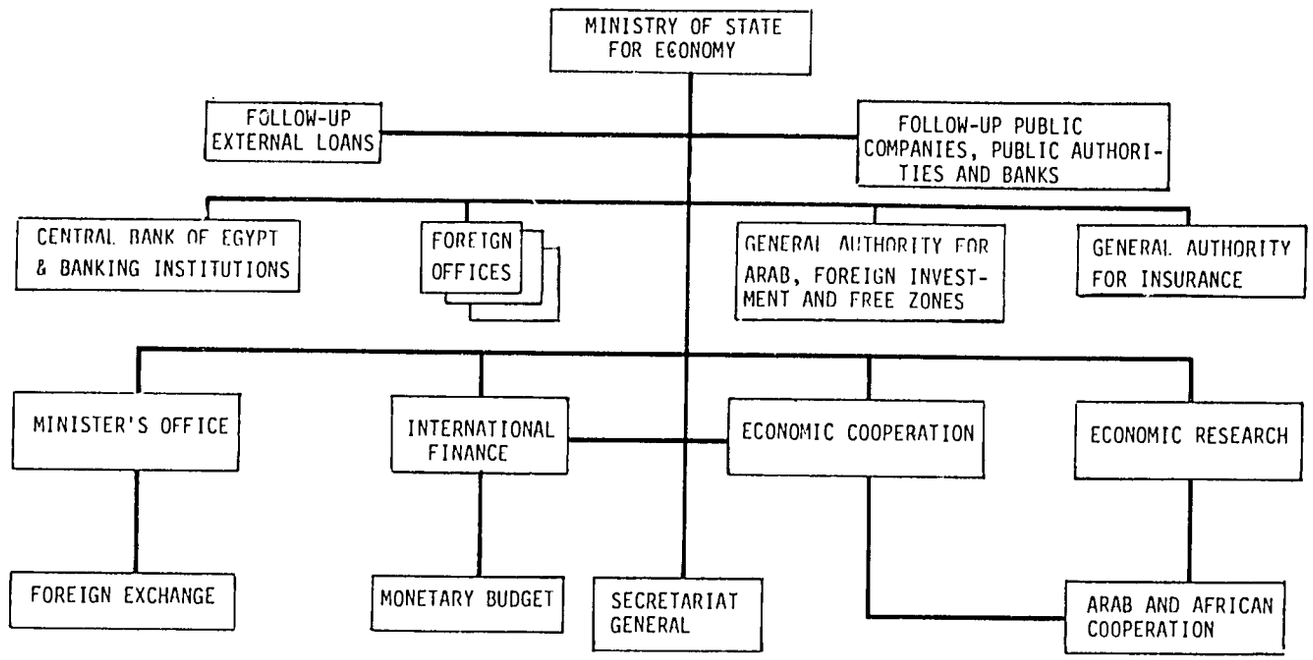
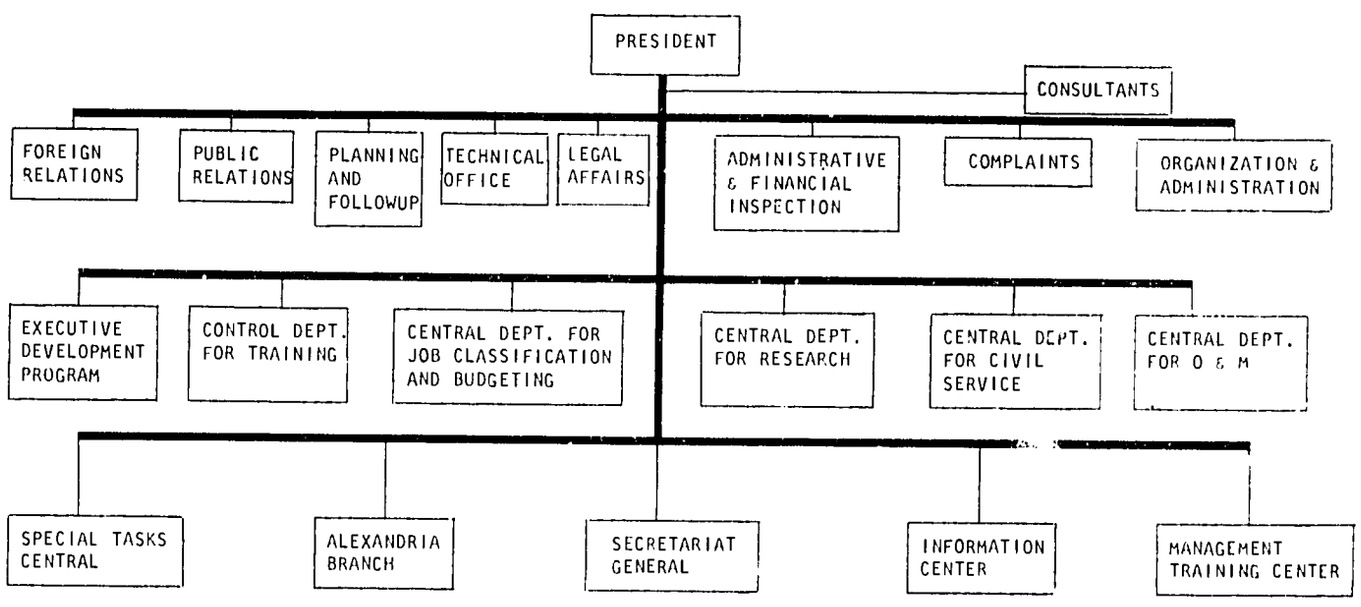


FIGURE III-7

ORGANIZATIONAL STRUCTURE OF THE CENTRAL AGENCY FOR ORGANIZATION AND ADMINISTRATION



questions of overlapping of functions such as training. The combining of vocational training programs with the placement of college graduates in the public service indicates that the prime function of the Ministry of Manpower and Training is to find jobs for people, not to place the right people in the right job. (Table III-1)

The Central Agency for Organization and Administration has the task of job classification, including creating positions for those people who have been placed in government employment by the Ministry of Manpower and Training. According to the Civil Service law, it is concerned with promotion and dismissal. Unfortunately, it has little or no power in either area. Promotion is closely tied to seniority or bureaucratic politics and dismissal is virtually impossible. The problem of supervision and control over personnel becomes extremely difficult under these circumstances.

Finally, the salary schedule (Table III-2) is rigid. There is now a tendency in Egypt to move out of the Civil Service to private enterprises, both national and foreign. This has had a large negative impact on public administration.

The present civil service system is heavily influenced by government's policies of guaranteed appointment.

The Civil Service legislation in Egypt has had numerous changes and amendments, which has contributed to an inability to act systematically. The recent civil service Law (47/1978) has basically devolved powers and authorities in personnel affairs to the management of the concerned organization or unit.

E. The Development Ministries

The key development ministry is the Ministry of Development and its affiliated agencies. This Ministry and its subordinate units have been presented in considerable detail since they will be significant in the development of a national urban policy. Other ministries with important development functions are the Ministry of Industry and Mineral Resources, the Ministry of Tourism, and the three ministries related to food production - the Ministries of

FIGURE III-8
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF MANPOWER AND VOCATIONAL TRAINING

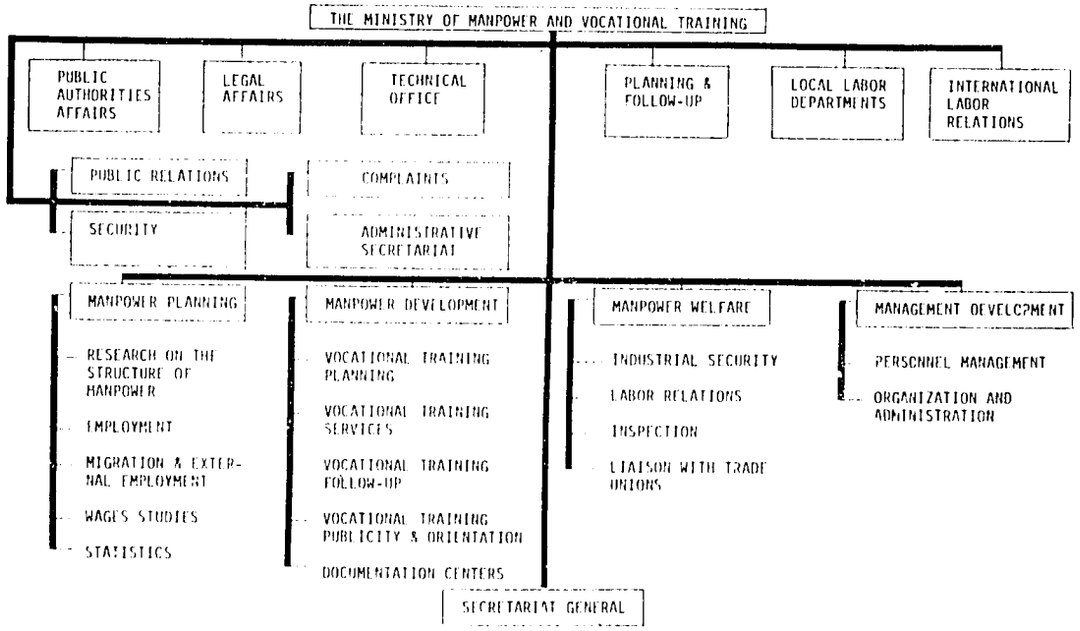


TABLE III-1
NUMBER OF CIVIL SERVANTS ON JANUARY 1, 1980

GRADES	Ministries & Central Agencies		General Authorities		Public Sector Units		Local Government		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
1st Under Secretary	98	0.04	93	0.02	364	0.03	2	0.00	557	0.02
Under Secretary	326	0.12	244	0.05	1,401	0.13			1,981	0.07
Director General	1,006	0.37	686	0.15	3,268	0.30	77	0.01	5,037	0.17
TOTAL	1,440	0.52	1,023	0.22	5,033	0.46	79	0.01	7,575	0.25
1st Grade	5,717	2.08	3,384	0.75	7,991	0.74	20,544	1.91	37,636	1.30
2nd Grade	43,186	15.71	54,547	12.04	80,114	7.41	120,186	11.15	298,033	10.33
TOTAL	48,903	17.79	57,931	12.79	88,105	8.15	140,730	13.06	335,669	11.63
3rd Grade	108,977	39.65	160,373	35.41	315,164	29.16	439,052	40.74	1,023,556	35.46
4th Grade	56,546	20.57	101,901	22.50	205,065	18.97	234,849	21.79	598,351	20.73
5th Grade	28,569	10.39	58,084	12.82	172,080	15.92	96,494	8.95	355,227	12.31
6th Grade	30,421	11.07	50,480	11.14	244,232	22.60	166,569	15.46	491,702	17.03
TOTAL	224,513	81.68	370,338	81.87	936,541	86.65	936,964	86.94	2,468,856	85.53
	--	--	23,163 1/	5.11	51,207 2/	4.74	--	--	74,370	2.58
T O T A L	274,856	100.00	452,955	100.00	1,080,886	100.00	1,077,773	100.00	2,886,470	100.00

1/ Unclassified
2/ Special Cadres
SOURCE: Central Agency for Organization and Administration.

Agriculture, Land Reclamation, and Irrigation. The coordination of the activities of all these ministries will be an essential element in the success of a national urban policy. Figure III-9 presents the Ministry of Development's organizational structure.

1. **Ministry of Development**
Presidential Decree No. 374/1978
Ministerial Decree No. 42/1980

The Ministry's objective is to study, propose, formulate and implement the plans and policies of physical planning for new towns and

TABLE III-2
CIVIL SERVICE GRADES AND SALARY SCALE ACCORDING TO LAW 47
1978 1/

	Annual Wage (L.E.)	% of Promotion By Merit	Annual Allowance (L.E.)
First Under-Secretary	2,175	--	--
Under-Secretary	1,500-2,115	100	75
Director General	1,320-1,992	100	72
First Grade	960-1,800	100	60
Second Grade	660-1,620	50	48 then 60 starting at 876
Third Grade	360-1,344	25	24 then 36 starting at 480; 48 starting at 660
Fourth Grade	240-996	20	18 then 24 starting at 360
Fifth Grade	216-996	10	12 then 18 starting at 240
Sixth Grade	192-540	0	12 then 18 starting at 240

1/ As amended in June, 1980.

SOURCE: Central Agency for Organization and Administration.

communities consistent with the objectives of the socio-economic plan, and within the general policy of State.

Its general functions are to:

i) Formulate the policy of development, prepare the plans and programs of urban development and coordinate between the Ministry's plans and programs and the plans and programs of the productive and service Ministries.

ii) Study and prepare the development plans for new towns, villages, communities and vacant land to take total advantage of the potentialities of the geographical site and environment in coordination with the other concerned agencies.

iii) Do comprehensive regional planning for regions and areas through the establishment of economic and social priorities; implementation of the projects included within these plans.

iv) Organize and coordinate the activities of public authorities and agencies, working in the field of development.

v) Implement the approved development plans, follow-up their implementation and evaluate their achievements and results.

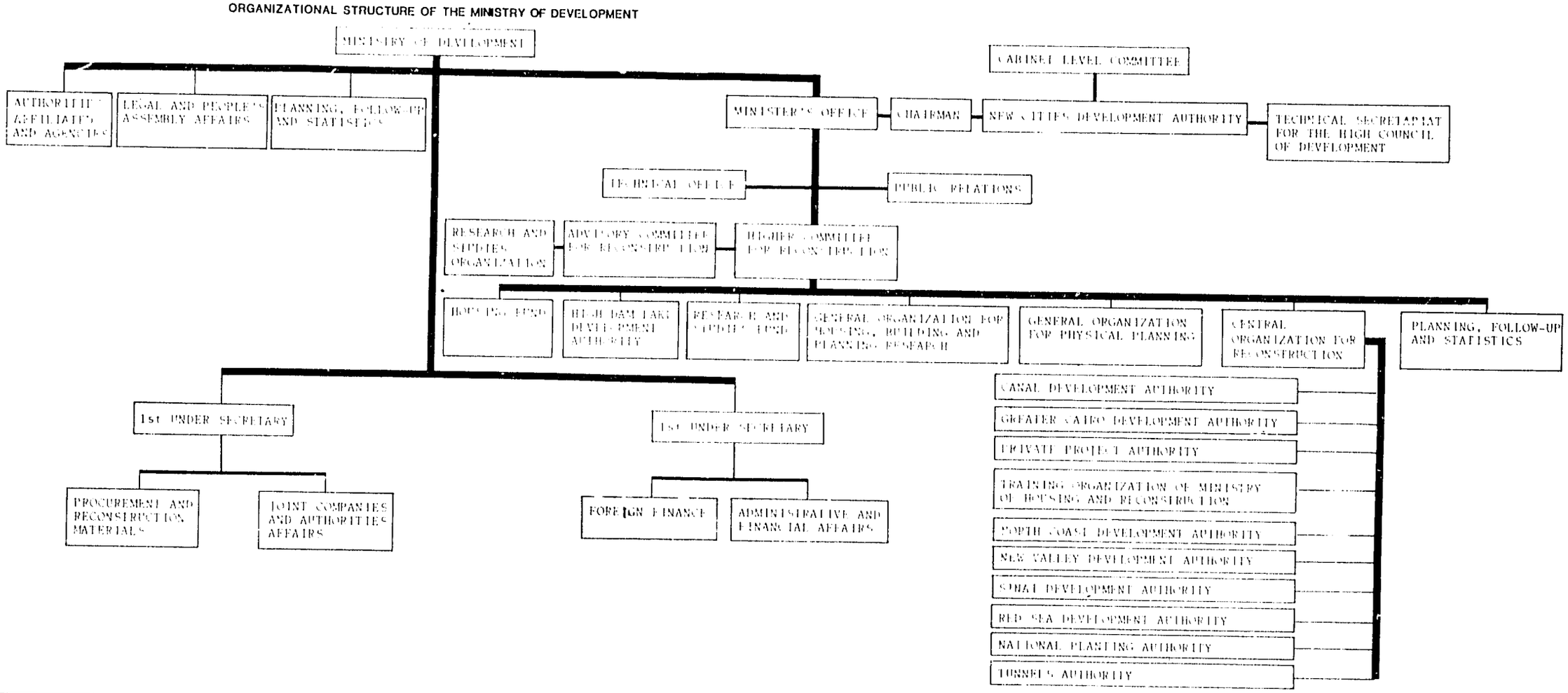
vi) Formulate the plans to develop the construction process and construction materials according to sound economic standards and the requirements of development and new communities.

vii) Conduct studies required for Arabic and foreign investments within the jurisdiction of the Ministry and in accordance with the legal provisions.

viii) Formulate the policy for exchanging technical experts required by the Ministry.

FIGURE III-9

ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF DEVELOPMENT



ix) Conclude agreements and contracts with the various local and international parties concerned with the activities of the Ministry.

x) Organize the training programs required for increasing the productivity and efficiency of technical human resources working in the activities performed by the Ministry.

xi) Organize the participation in conferences, workshops and seminars within the jurisdiction of the Ministry.

xii) Propose and study draft laws and other legislation within the jurisdiction of the Ministry.

a. General Organization for Physical Planning - Presidential Decree No. 1093/1973

The objective of GOPP is to lay down the principles of general policy for physical planning, to prepare the plans and programs of urban development for all Egypt in coordination with the plans and programs of production and public services sectors to fulfill the present requirements and to plan for the future. The organization will also follow up the implementation of such plans. The GOPP's organizational structure is presented in Figure III-10.

Its general functions are to:

i) Cooperate with all the concerned authorities in the State, and in particular local authorities, planning agencies, production and service units and CAPMAS.

ii) Participate with the concerned planning agencies in the formulation of policies and plans that have impacts on urban development.

iii) Use regional planning techniques in collaboration with concerned agencies with a view to preparing the comprehensive regional physical planning for each region, and coordinate these plans with the national plan.

iv) Conduct studies and technical research necessary for the preparation of comprehensive physical plans.

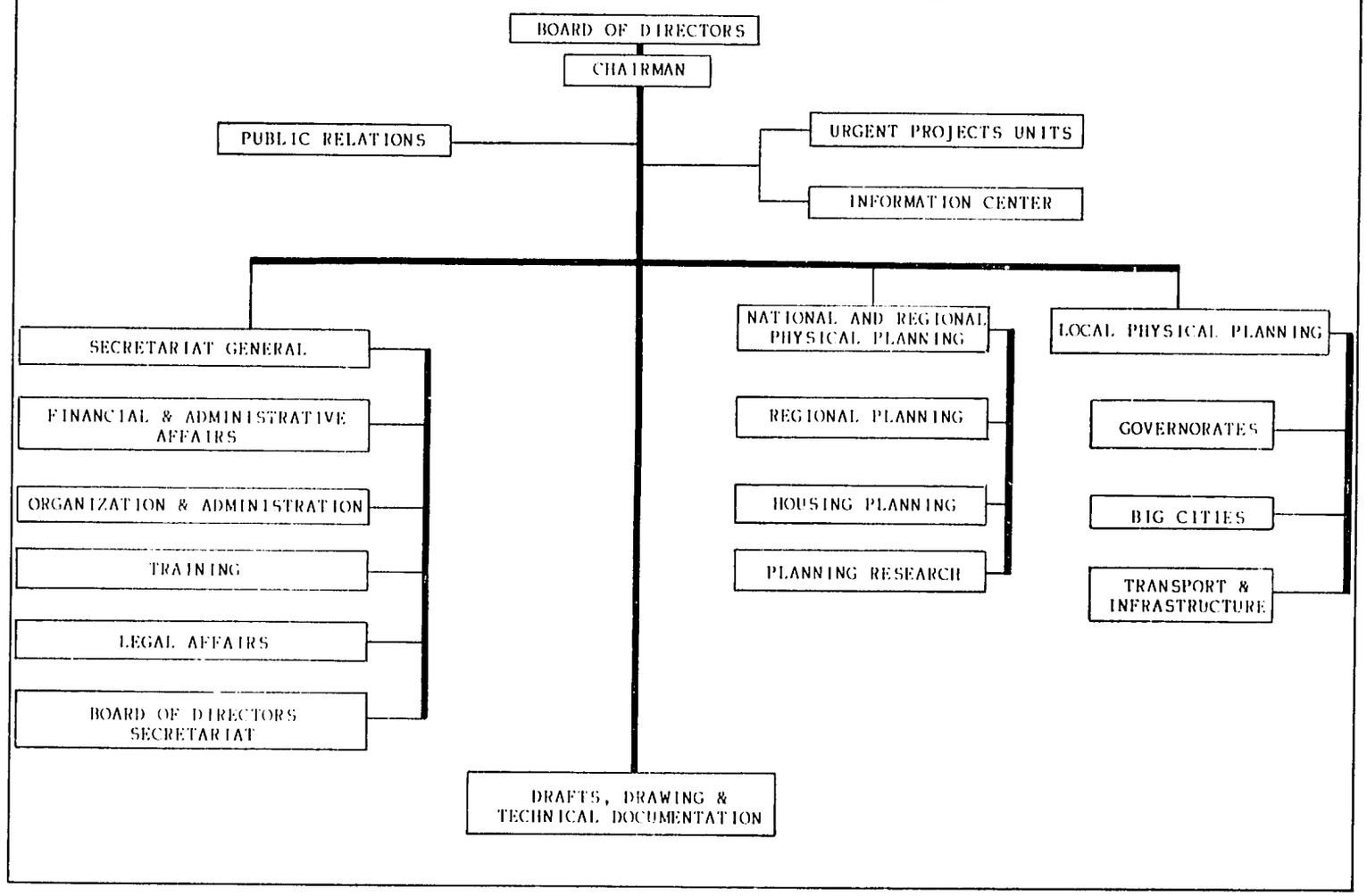
v) Conduct population research and studies necessary for the general plans, especially the plan of housing and its related infrastructure projects and services, and develop implementation programs for this plan.

vi) Prepare the structure plans for cities, towns and villages according to priorities, to be the basis for urban development, and to decide upon the phasing of the implementation of projects.

vii) Discuss the urgent problems of physical planning in governorates in general and the problems of urban growth trends, the selection of projects sites and other specific problems in particular. Investigate every specific case and conduct field research to recommend appropriate solutions.

viii) Prepare guidelines that can be used by the local authorities to study and prepare their physical plans.

FIGURE III-10
ORGANIZATIONAL STRUCTURE OF GENERAL ORGANIZATION FOR PHYSICAL PLANNING



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ix) Provide the local authorities with consultancy services, and assist in the development of the physical planning concept.

x) Prepare a draft law of planning.

xi) Follow-up the projects within the domain of each governorate to secure consistency with the plans and programs of physical planning prepared by the organization.

xii) Train the GOPP's and local planning professional and technical staff.

b. Advisory Committee for Reconstruction - Presidential Decree No. 114/1976

The objectives of the Agency are to study, implement and follow-up reconstruction projects throughout the Republic of Egypt. (Figure III-11)

Its functions are to:

i) Study and propose reconstruction projects throughout Egypt in accordance with and consistently with the socio-economic development plan, and allocate the projects of reconstruction to the implementing agencies.

ii) Follow-up the implementation of the reconstruction projects and evaluate the results.

iii) Supervise and control implementing agencies of reconstruction.

iv) Participate with other concerned agencies in the Ministry of Development in proposing draft laws.

v) Lay down the standard budgets for reconstruction.

c. High Dam Lake Development Public Authority - Presidential Decree No. 114/1976, Presidential Decree No. 420/1978

Objective

Develop and exploit the natural resources of the High Dam Lake, the shoreline and the surrounding lands. Conduct research, develop, implement and follow-up socio-economic projects required for the development of the Lake.

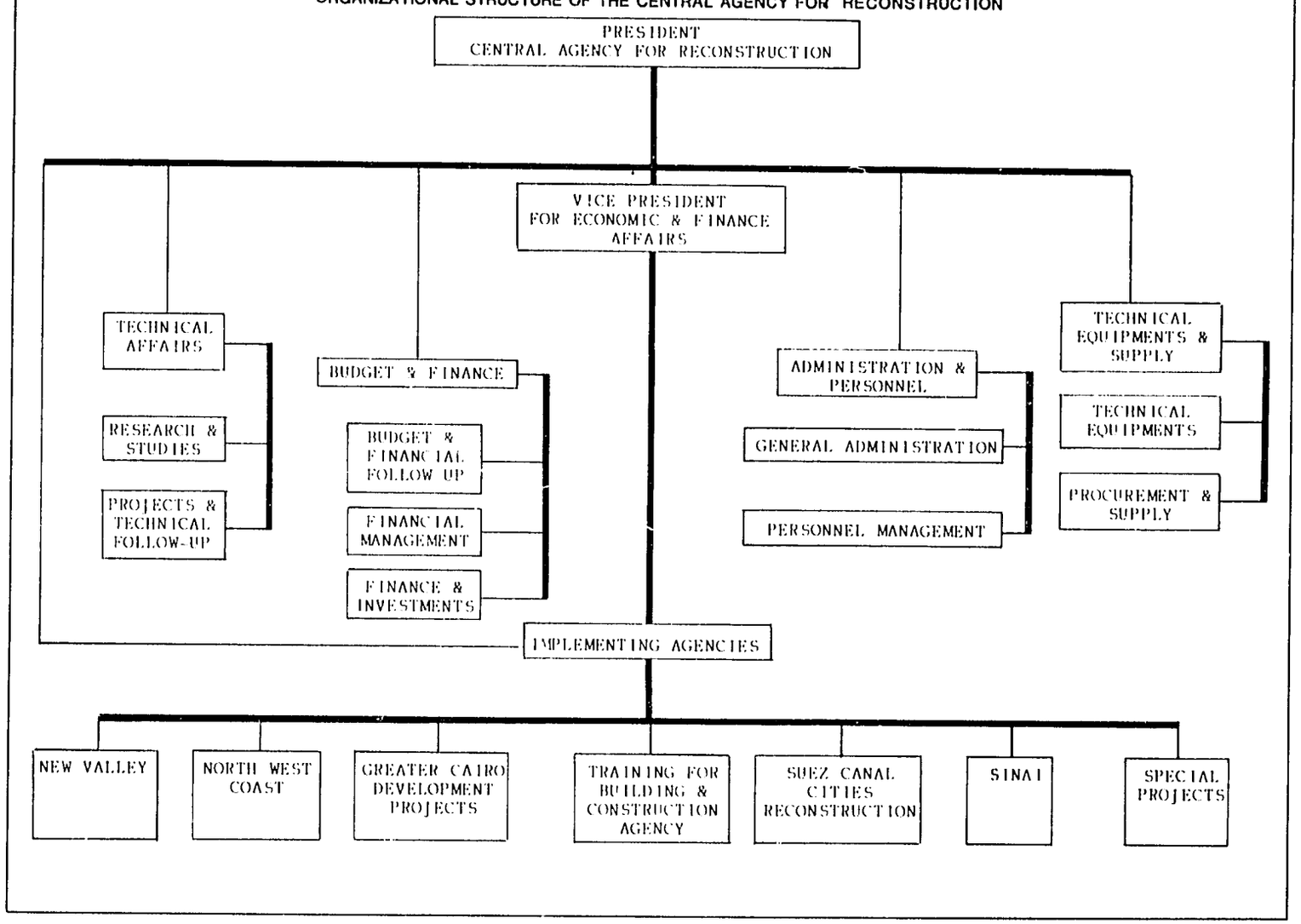
General Functions

i) Study and survey the growth potentialities of the Lake, its shoreline and surrounding lands, and conduct the necessary research for that in the following areas.

ii) Human resources development.

iii) Agriculture, cattle and livestock and fish development.

TABLE III-11
ORGANIZATIONAL STRUCTURE OF THE CENTRAL AGENCY FOR RECONSTRUCTION



iv) Agro-industries, mining, handicrafts, glass, granite and marble industries.

v) Natural resources that can be exploited economically.

vi) Physical development of the area.

vii) Tourism.

viii) Transport and communications.

ix) Economic and social project development.

x) Project implementation and follow-up.

d. Development Research and Studies Fund - Presidential Decree 242/1977

Objective

Finance the research and study activities necessary for development and reconstruction activities. (Figure III-12)

General Functions

i) Receive grants, loans and voluntary contributions to finance research and studies.

ii) Lay down the policy of expenditures on research and studies required by various projects according to the priorities stated by the Minister.

iii) Contract and follow-up the various research and study activities of the Ministry.

e. Housing, Building and Physical Planning Research Center - Presidential Decree 46/1977

Objectives

Conduct research and technical studies, theoretical and empirical, in the areas of housing, building and physical planning. (Figure III-13)

Provide consultancy services to governmental, public and private sector on standards and technical specifications.

General Functions

i) Study the architectural and construction designs for presidential services and public buildings with a view to develop it to suit the natural, social and sanitary conditions.

ii) Standardize the components and materials of building and construction.

iii) Study the different characteristics of building materials, and conduct research on more efficient materials.

iv) Adopt local materials to be used as alternative building materials.

v) Develop traditional means and ways of building.

FIGURE III-12
ORGANIZATIONAL STRUCTURE OF DEVELOPMENT RESEARCH AND STUDIES FUND

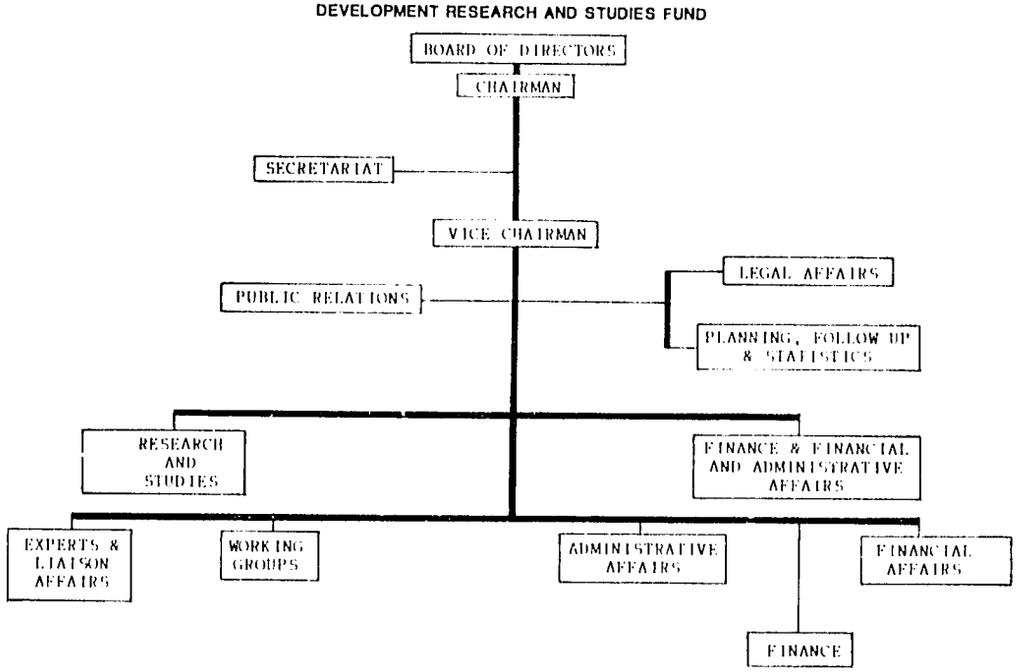
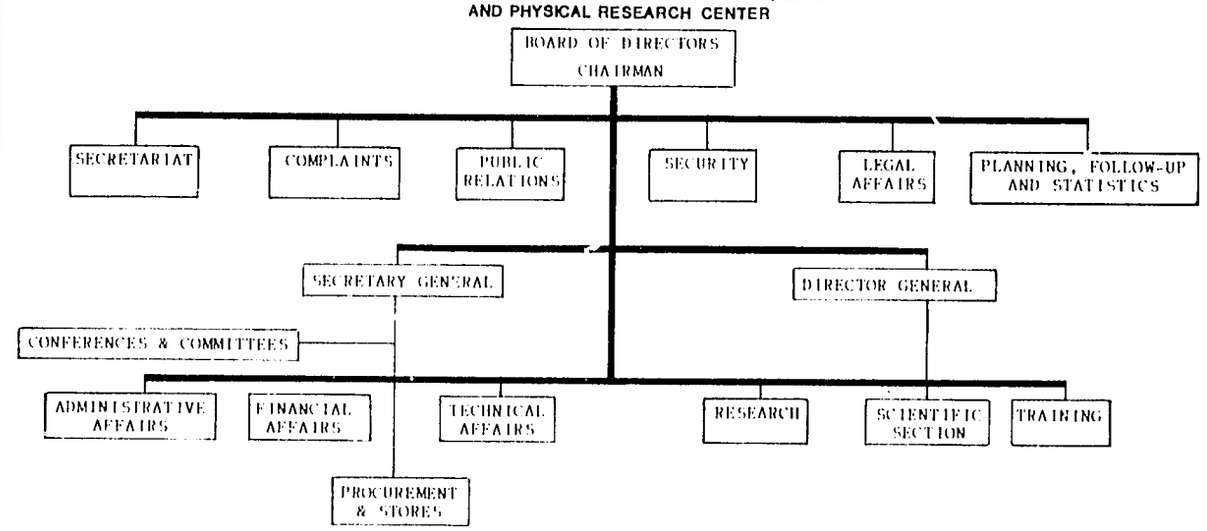


FIGURE III-13
ORGANIZATIONAL STRUCTURE OF HOUSING, BUILDING AND PHYSICAL RESEARCH CENTER



vi) Conduct research leading to physical plans in urban and rural communities.

vii) Study land uses in various settlements taking into consideration the protection of arable land.

viii) Determine the proportions and standards of public buildings within settlements.

ix) Cooperate with the various agencies in developing and implementing training policies to meet the requirements of the building and construction sectors.

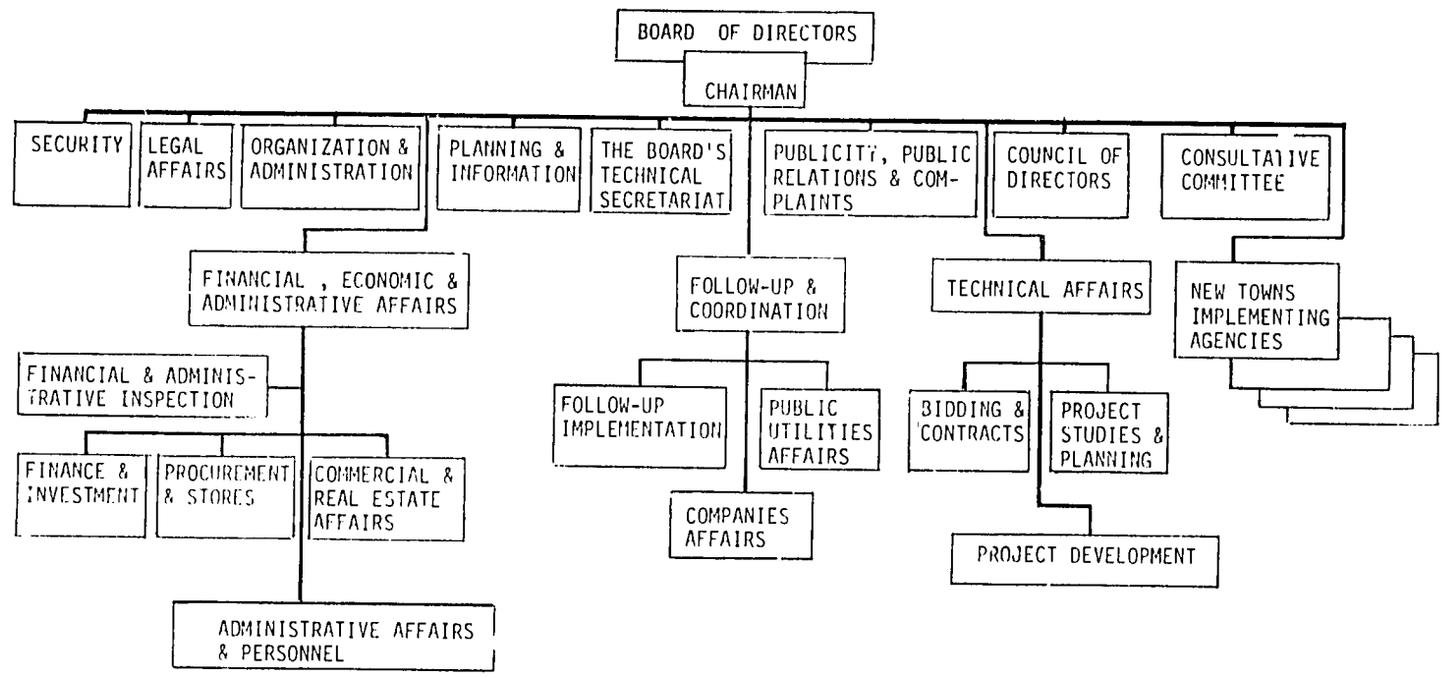
x) Develop and implement a training policy to raise the productivity of operation and maintenance workers.

f. New Urban Communities Authority - Law No. 59/1979, Presidential Decree No. 351/1980

This unit has now been spun off, but remains under the jurisdiction of the Minister who is Chairman of the New Urban Communities Authority. (Figure III-14)

FIGURE III-14

ORGANIZATIONAL STRUCTURE OF NEW URBAN COMMUNITIES AUTHORITY



Objective

To develop new urban communities, which will be new centers of life with social stability and economic prosperity (industrial, agricultural, commercial, or similar purposes).

General Functions

i) Outline the policy and draw up the plans and programs of urban development for the creation of new urban communities and arrange them with production and services plans and programs.

ii) Carry out studies regarding the selection of the most suitable sites for the new urban communities.

iii) Organize, coordinate and exchange consultations with the ministries, authorities and agencies operating in the field of construction and all that may be relevant to the study and execution of regional utilities and services establishments pertaining to projects of new urban communities.

iv) Follow up the execution of the development plans for new urban communities, to overcome material and technical obstacles which may impede execution and to appraise performance.

v) Carry out general and detailed planning in accordance with the Authority's regulations, for the execution of projects through international and local auctions, invitations for bids, or negotiations, or by direct conclusion of contracts. Supervise the execution of these projects.

vi) Study means for installing regional utilities in new urban communities in such a manner as may be consistent with the internal economic projects, land allotment, the erection of internal utilities; either through the Authority itself or via the competent development machinery or any other means which the Authority may deem appropriate.

vii) Conclude loans, or obtain grants in addition to the credits which will be allocated to the Authority, so as to secure adequate financing of the projects.

viii) Assist in providing the equipment and materials necessary to implement the projects.

ix) Promote the sale, lease or utilization of the lands of the new urban communities for Egyptian and foreign investors, to promote the economic development of the projects without prejudice to the rules regarding ownership by foreigners.

2. Ministry of State for Land Reclamation
Presidential Decree 264/1978

Objective

This Ministry's main objective is to support the realization of the green revolution through the reclamation of desert and arid land and the creation of new communities on the reclaimed land with a view to redistribute population and increase agricultural productivity. (Figure III-15)

General Functions

i) Develop the general policy of the state for land reclamation and horizontal expansion according to the water resources identified by the Ministry of Irrigation.

ii) Participate with the Ministry of Development in developing the policies and programs concerning the establishment of new communities and coordinate with the concerned ministries in planning the public utilities and services required for land reclamation.

iii) Supervise and control the activities of public economic units and authorities working in the field of land reclamation.

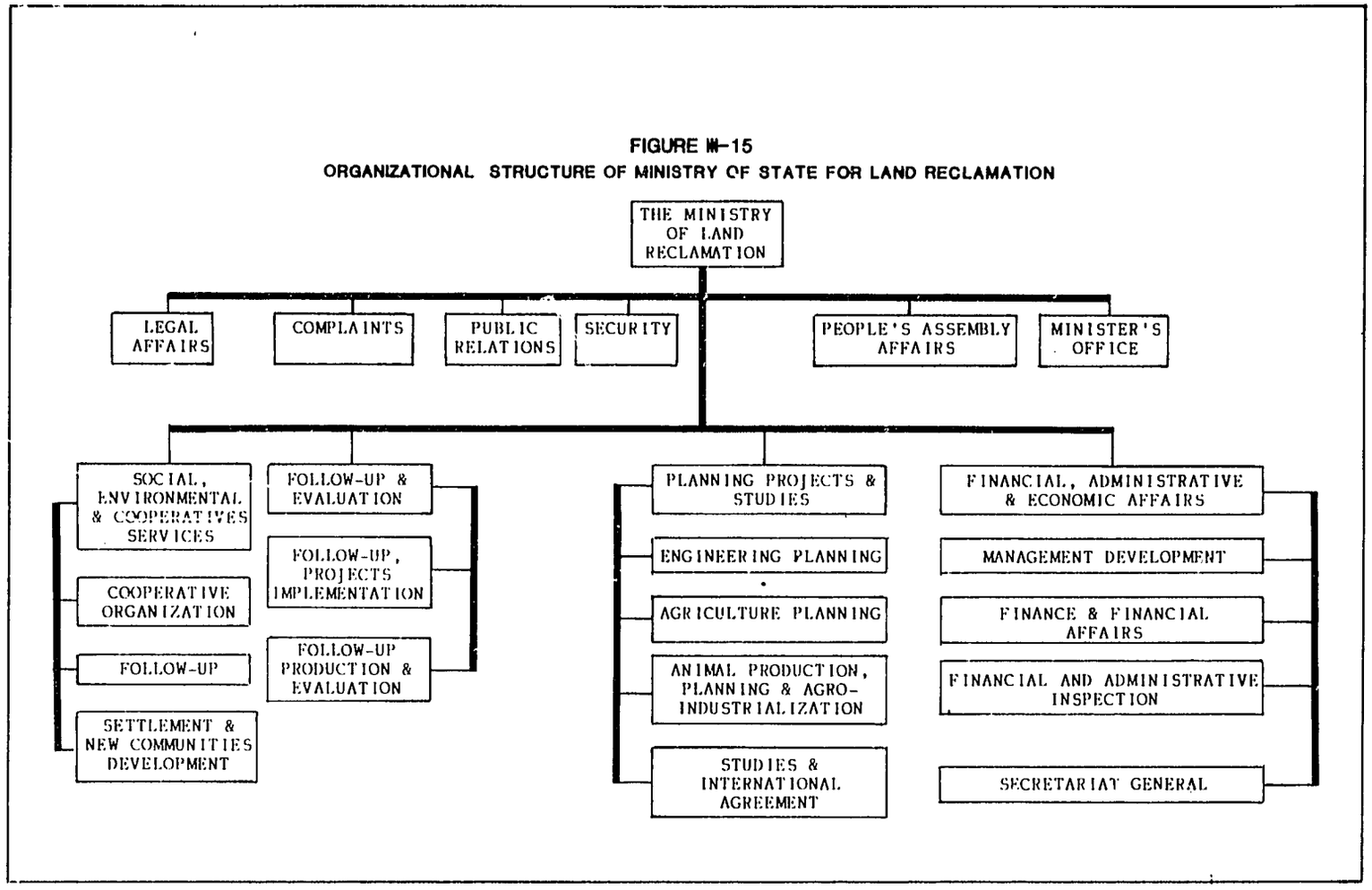
iv) Study projects intended to establish agro-industrial complexes in the reclaimed areas.

v) Supervise the disposal process of the arid or reclaimed lands.

vi) Conduct research and studies to increase agricultural, cattle breeding and fisheries productivity, and plan for an industrialization policy in the new areas.

vii) Develop the policy of settlements in the reclaimed lands with a view to redistribute the population concentrated in the towns.

FIGURE III-15
ORGANIZATIONAL STRUCTURE OF MINISTRY OF STATE FOR LAND RECLAMATION



a. General Organization for Agricultural Development

Objective

This General Organization's objective is to encourage the reclamation of land for agricultural purposes on the basis of the soil and water available. It is the consulting agency for the Ministry in the field of agriculture development. It supervises and controls the programs for agricultural development in the newly reclaimed lands in the following areas:

i) West Delta and Maryout.

ii) Upper Egypt and Oasis.

iii) East and Mid Delta.

b. Reclaimed Lands Funds

The main sources of this fund are the revenues of the sale or lease of the newly reclaimed land. The revenues are designated to the purpose of reclaiming new lands according to the plan.

According to Law No. 43/1979 of local government, this fund had been decentralized. There is now a special fund for reclaimed lands in each governorate.

FIGURE III-16
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF AGRICULTURE

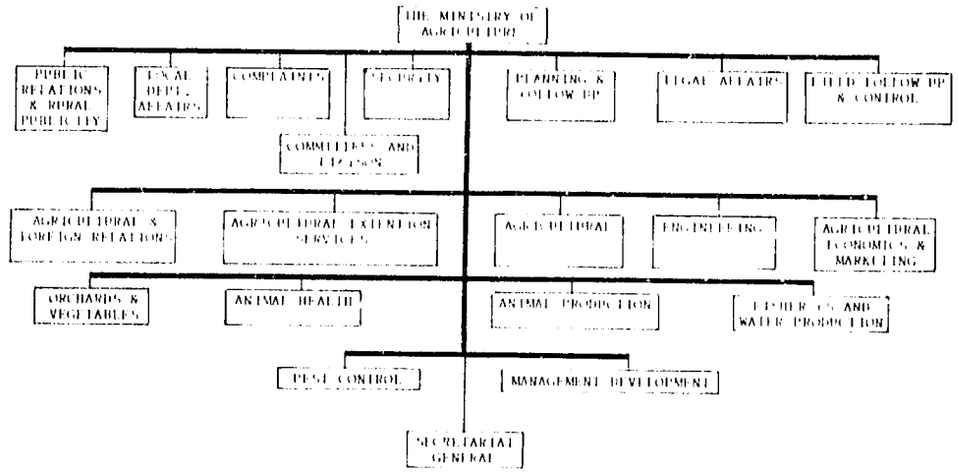


FIGURE III-17
MINISTRY OF AGRICULTURE AND ITS AFFILIATE AGENCIES

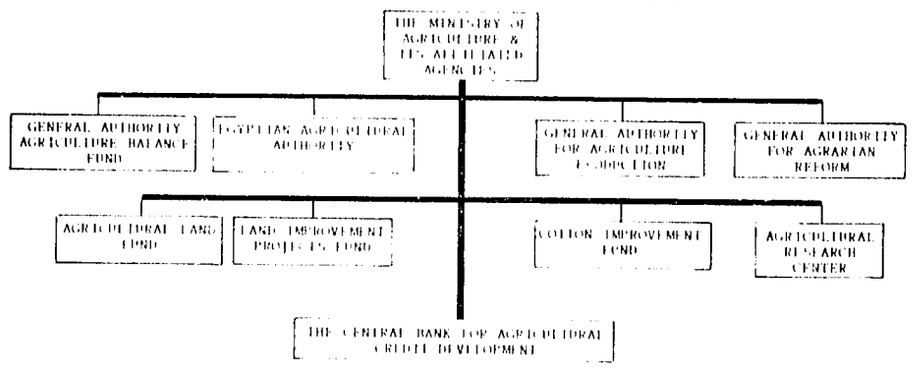
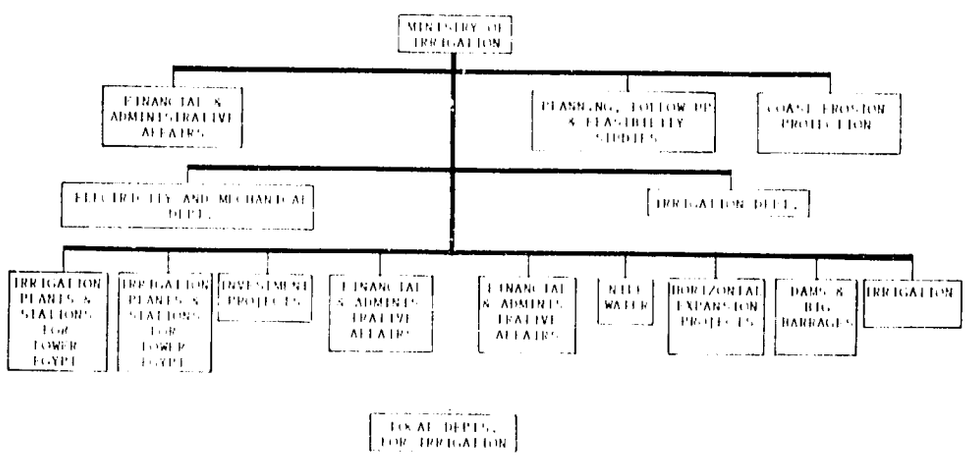


FIGURE III-18
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF IRRIGATION



3. Ministry of Agriculture
Ministerial Decree No. 579/1979

Objective

Plan the agricultural services with a view to utilizing the agricultural and animal resources to the utmost extent. (Figures III-16 and 17)

General Functions

i) Formulate the agricultural policy and regulate and organize agricultural production consistent with the general objectives of the State.

ii) Specify plans, programs and projects to increase agricultural productivity and fully utilize botanical and animal resources.

iii) Conduct research and studies to overcome the problems of agricultural production.

iv) Collect and analyze economic/technical data and information on agriculture.

v) Lay down standard specifications for agricultural production requirements.

vi) Provide agricultural extension services.

4. Ministry of Irrigation
Presidential decree 653/1980

Objective

Conduct studies concerning the specifications of irrigation and drainage projects, develop water resources and exploration of underground water potentialities. Develop, implement, operate, and maintain irrigation and drainage projects. (Figures III-18 and 19)

General Functions

i) Specify and implement the policies, plans and programs of water resources development in order to fulfill the requirements of economic development.

FIGURE III-19
MINISTRY OF IRRIGATION AND ITS ITS AFFILIATED AGENCIES

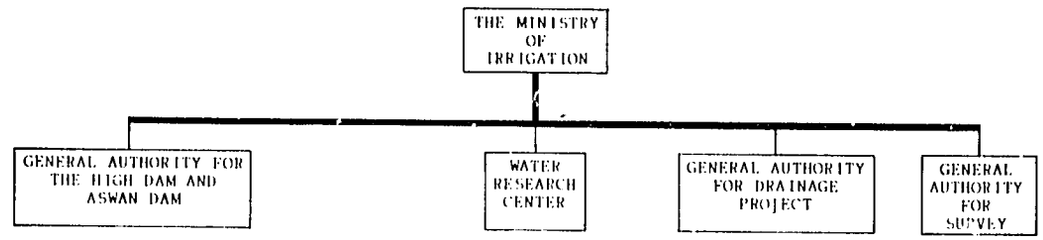


FIGURE III-20
ORGANIZATIONAL STRUCTURE OF THE HEADQUARTERS OF THE MINISTRY OF INDUSTRY

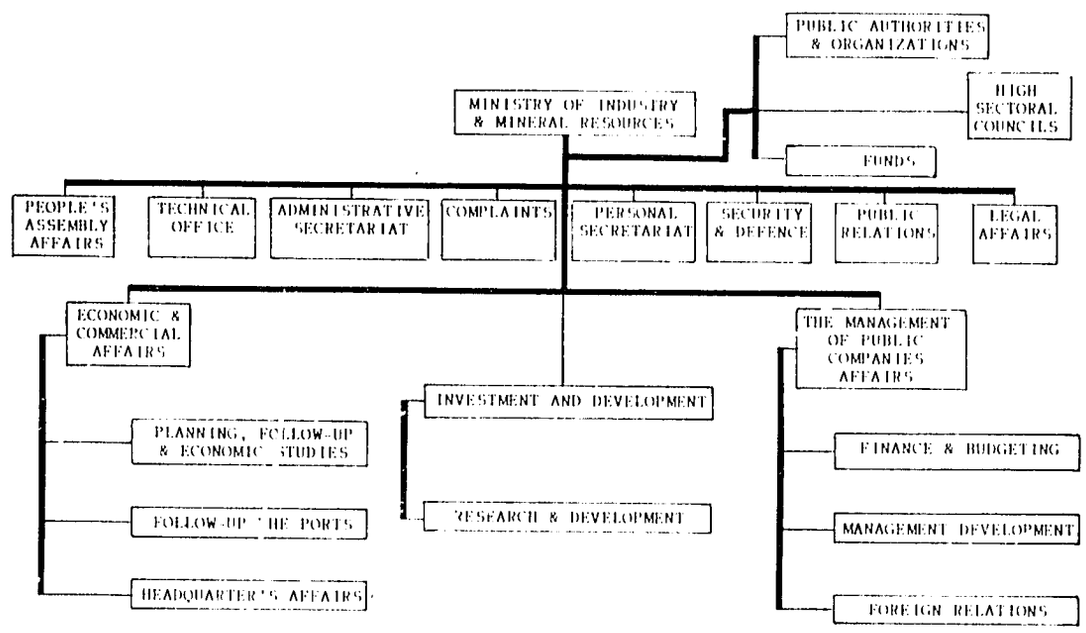
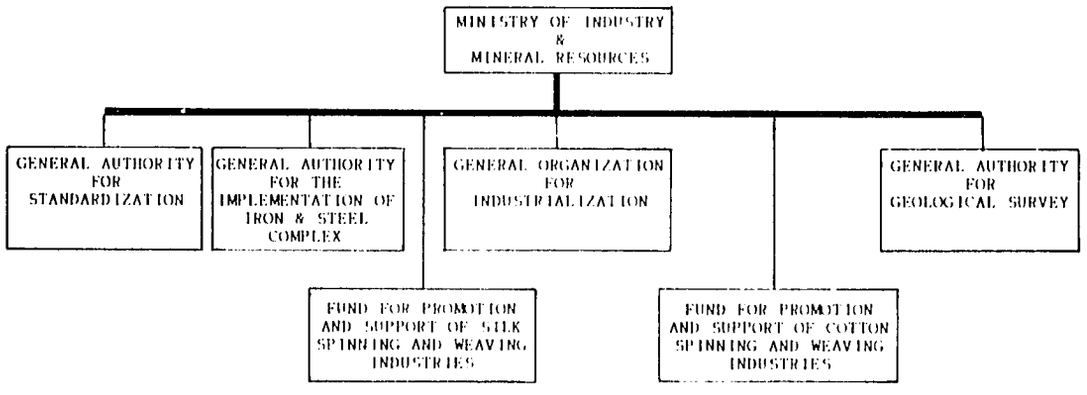


FIGURE III-21
MINISTRY OF INDUSTRY AND MINERAL RESOURCES
AND ITS AFFILIATED AGENCIES



ii) Specify and implement the policies, plans and programs of drainage of water used in agriculture.

iii) Control the distribution of the irrigation network and water, establish and maintain reservoirs, dams, barrages on the Nile and its branches.

iv) Conduct studies concerning the horizontal expansion within the water resources available.

v) Prepare maps for different engineering and urban projects (survey, topographical) located on agricultural and desert lands.

vi) Perform all the survey works required by the state (physical planning, expropriation of buildings and lands for public utilities, subdivision of lands for buildings, etc.) related to irrigation projects.

5. Ministry of Industry and Mineral Resources Presidential Decree 2/1956
Ministerial Decree 251/1978

Objective

This Ministry's main objective is the industrialization of the country while increasing the productivity of industry. (Figures III-20 and 21)

General Functions

i) Study the new technolgical developments in the industrialized countries and introduce and adapt them to Egyptian industry.

ii) Prepare the annual estimates for industrial imports and exports for both the public and private sectors.

iii) Conduct marketing research and studies and prepare plans for the industrial and mining sector.

iv) Follow-up the implementation of the plans.

v) Coordinate technical and economic cooperation in the field of industry and mining.

vi) Determine training requirements in the field of industry and mining.

vii) Follow-up the arrival and unloading of raw materials for industry.

6. **Ministry of Tourism and Civil Aviation**
Ministerial Decree 139/1979

Objective

Promote international and domestic tourism in Egypt. (Figure III-22)

General Functions

i) Promote tourism through all media-publicity, propaganda, exhibitions, fairs, mass media, etc.

ii) Provide the necessary facilities to encourage tourism.

iii) Control tourism activities.

F. The Infrastructure Ministries

As stated previously, the second category of ministries concerned with a national urban policy, are the infrastructure ministries. Since housing has one of the highest priorities of the government in Egypt, and since it has nominal authority on water and sewerage, it has been presented in some detail here with its significant related activities. Transport, both land and sea, and communications and power and electricity, follow as infrastructure ministries. Any national urban policy must consider housing the people of Egypt in surroundings as pleasant as possible spatially, as well as with facilities of water sewerage, transport and power. Coordination among these ministries is crucial to the development, and particularly, implementation of a national urban policy.

1. **Ministry of State for Housing**

Presidential Decree No. 72/1975
Ministerial Decree No. 104/1978

Objective

Study, suggest and execute plans and policies for housing, public sector construction and infrastructure. (Figure III-23)

FIGURE III-22
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF TOURISM

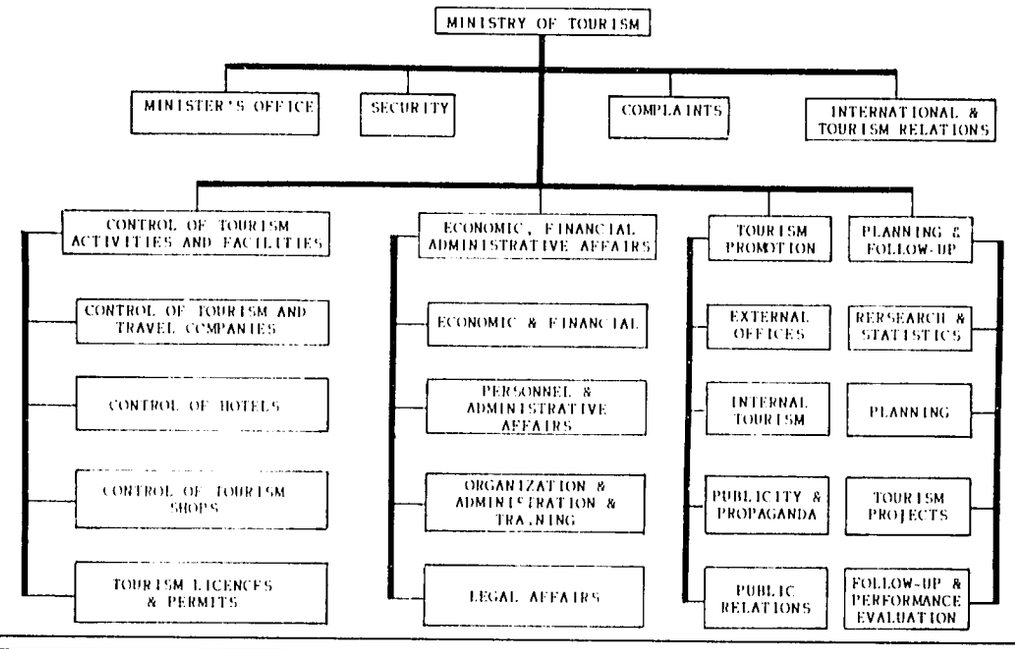
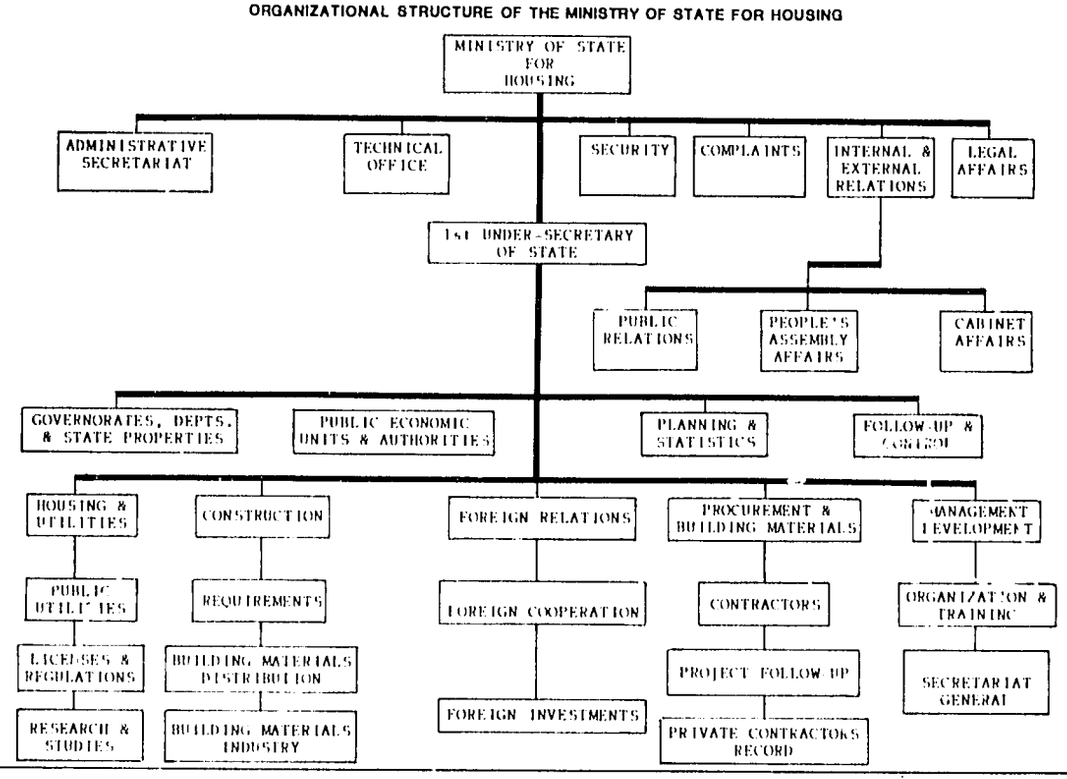


FIGURE III-23
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF STATE FOR HOUSING



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General Functions

i) Establish the general plans, execute programs and define criteria for targeting public and private housing projects at different income levels.

ii) Establish economic justification for construction development plans, coordinate between Construction Agencies in the Ministry and other Authorities and evaluate the construction sector.

iii) Execute construction projects necessary for developing the national economy such as civil establishments, infrastructure projects, public buildings, and housing at its different income levels.

iv) Establish the basis and rules for designing construction works according to regula-tions issued in the law.

v) Design and supervise public buildings works and develop the plans and criteria necessary for their maintenance.

vi) Direct and develop private sector activity in the field of construction according to the State's policy.

vii) Carry out research and applied studies in the field of the Ministry's concern in order to keep up with international progress in housing and construction. Execute projects for mechanization and rational-ization of production in construction. Provide individuals and institutions with data and technical advice in the field.

viii) Draw up plans and programs concerning the execution of water and local drainage projects. Develop the design, conditions, standards and technical measures for these plans and supervise and follow-up their execution.

ix) Carry out the necessary studies for investing foreign and Arab capital in the field of the Ministry's concern according to the laws regulating them.

x) Encourage Egyptian construction companies to undertake projects outside Egypt and provide them with all technical and material assistance available.

xi) Develop a public policy towards the issuing of licenses for the construction of buildings, industrial and commercial establishments. This is in addition to giving technical direction in the field of drainage, local establishments, lands and others concerning environmental improvements.

xii) Sign contracts and agreements with local and international authorities and agencies.

xiii) Carry out training programs in the field of activity of the Ministry so as to provide the housing and construction sector with the technical capacities at different levels which will raise productivity.

xiv) Organize and participate in conferences, meetings, local and international seminars in the field of housing and construction.

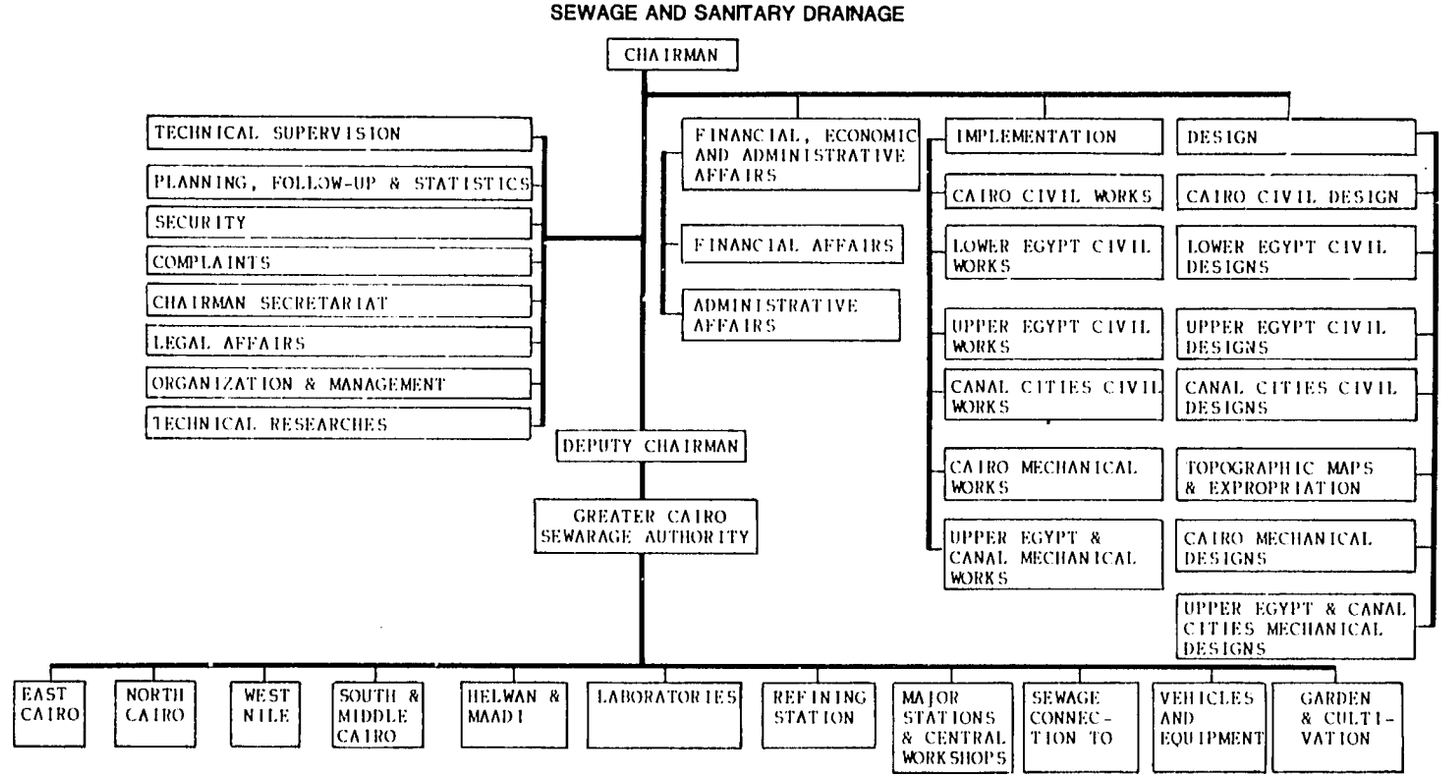
xv) Suggest, study and prepare legislation concerning the Ministry's activities.

a. General Organization for Sewage and Sanitary Drainage - Presidential Decree No. 1637/1968

Objective

To expand sewage and drainage projects to all parts of the Republic. Do technical research and studies, and develop plans and standard measures and criteria for sanitation projects. Supervise the execution of all sewage operations as well as operating Cairo and Alexandria Sewage Authorities and giving technical aid to other regional sewage authorities. (Figure III-24)

FIGURE III-24
ORGANIZATIONAL STRUCTURE OF THE GENERAL ORGANIZATION FOR SEWAGE AND SANITARY DRAINAGE



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General Functions

i) Manage, operate and maintain Greater Cairo and Alexandria Sewage Utilities; provide research and designs necessary to expand and sustain these utilities.

ii) Establish the designs, conditions, technical and standard measures for sewage and sanitary drainage. Carry out projects of renewal, replacement and expansion.

iii) Carry out research nationwide necessary to design operations for collecting and carrying off waste water from homes and commercial and industrial establishments. Implement plans and supervise such operations.

iv) Prepare, design and supervise all projects concerning waste water filtration.

v) Sign contracts, establish measurable and technical standards, and set the conditions of projects and operations. The Authority calls for tenders at the local and international level and is authorized to make decisions, sign contracts and supervise these projects and operations.

vi) Maintain technical supervision over operation and maintenance of sewage and sanitary drainage utilities in cities not under the Organization's supervision.

b. Public Authority for Water - Presidential Decree No. 63/1968, Ministerial Decree No. 29/1971

Objective

The water authority plans, supervises technically, and controls water works for household and public consumption throughout the Republic in a way which does not conflict with the Greater Cairo Water Supply Authority and Alexandri·· Water Supply Authority. (Figure III-25)

General Functions

i) Technical supervision over all water authorities producing and distributing drinking water for household and public consumption. These authorities are managed through local councils, agenices, public institutions and companies.

ii) Develop comprehensive and detailed plans at the national level and follow up their execution. Develop conditions, and standards and technical measures for drinking water and household and public consumption. These plans include all needed expansion, replacement and renewal.

iii) Call for tenders for projects, sign contracts and supervise their execution.

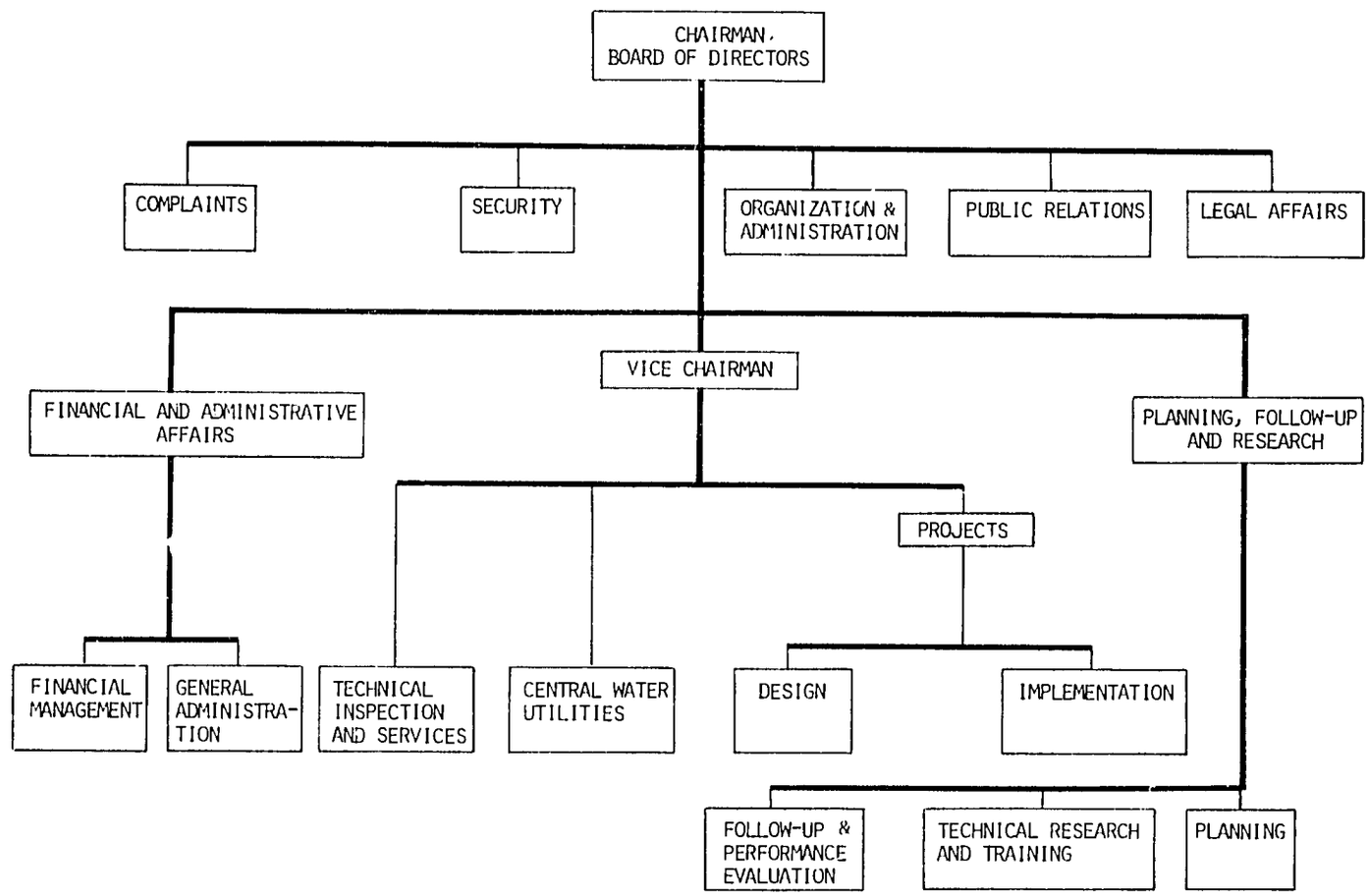
iv) Carry out studies and applied research concerning drinking water and public and household consumption.

v) Manage, operate and maintain all major water works in rural areas and water operations in ministries, governorates, agencies and institutions.

vi) Give technical advice.

vii) Establish training centers to raise produtivity.

FIGURE III-25
ORGANIZATIONAL STRUCTURE OF THE PUBLIC AUTHORITY FOR WATER



c. **General Organization for Housing and Building Cooperatives** - Presidential Decree No. 793/1977

Objectives

i) Establish cooperative districts with their complementary services. (Figure III-26)

ii) Encourage the building of condominiums for low and middle income households, so that each can own one housing unit.

iii) Develop designs for condominiums and encourage reduction in the size of flats.

iv) Encourage landowners, members of cooperatives and others to build multi-unit structures in order to make more efficient use of land and infrastructure.

v) Develop the national economy in the field of cooperative housing and building in coordination with the State's Public Policy.

vi) Control and supervise Housing Cooperative Societies.

General Functions

i) Develop a comprehensive policy for the cooperative housing sector.

ii) Achieve the objectives of the socialist cooperative policy for housing and building.

iii) Provide housing cooperative societies with technical, administrative and financial assistance.

iv) Manage the fund for loans to cooperatives.

v) Follow up all industrial and commercial activities within the cooperative's framework.

vi) Buy and plan the land needed to establish condominiums and provide them with the necessary infrastructure.

ii) Design condominium projects and supervise their implementation.

d. **Executive Agency for Joint Projects** - Ministerial Decree No. 48/1979

Objectives

Execution of the agreements signed with foreign governments or international organizations concerned with financing low income housing. (Figure III-27)

FIGURE III-26
ORGANIZATIONAL STRUCTURE OF THE GENERAL ORGANIZATION FOR HOUSING AND BUILDING COOPERATIVES

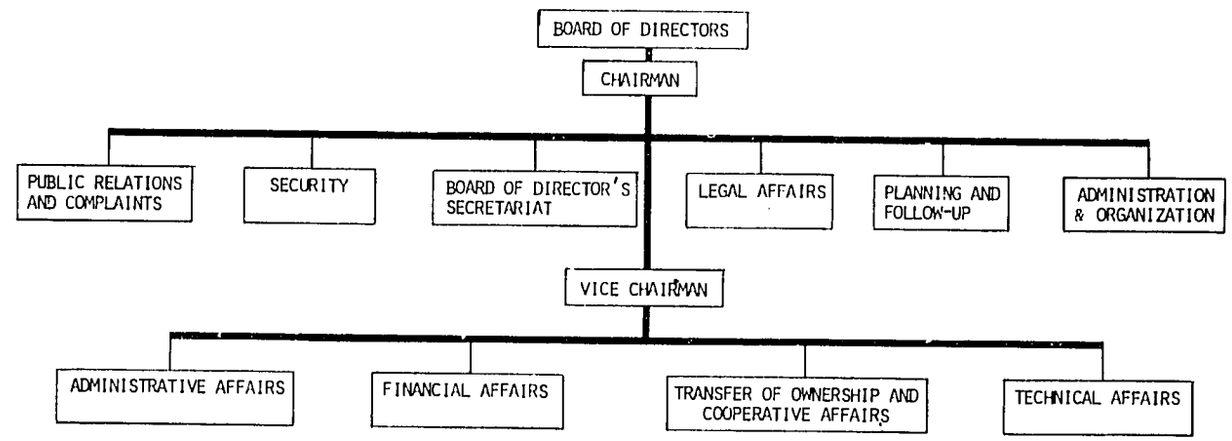
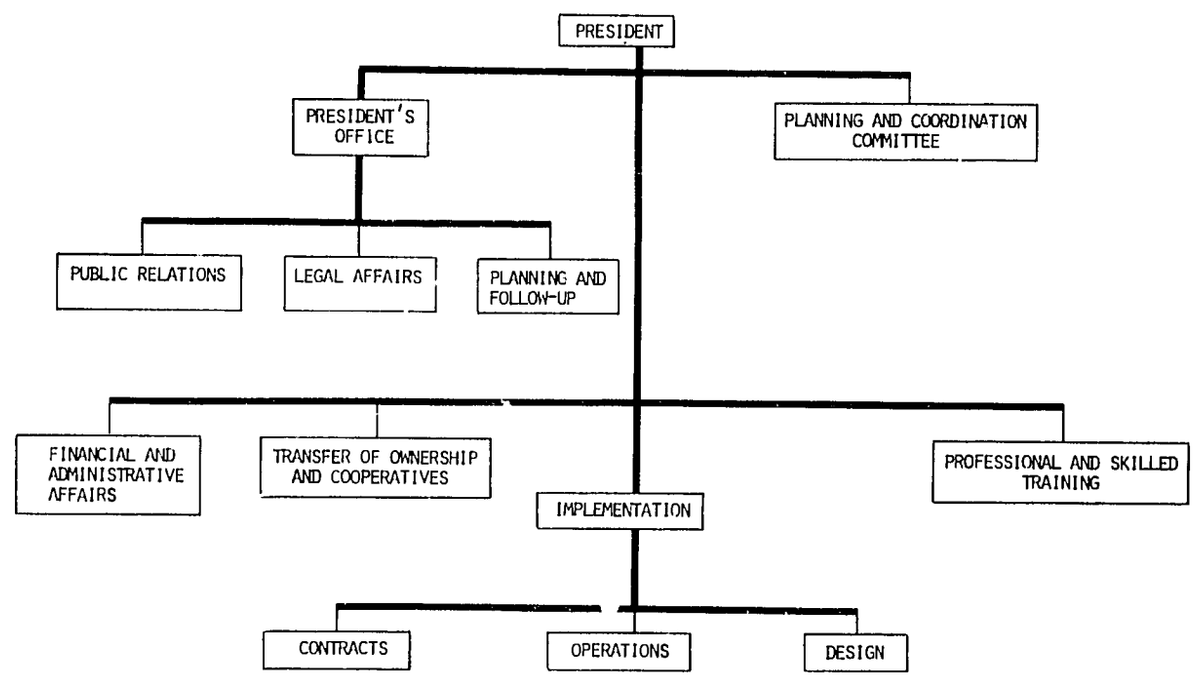


FIGURE III-27
ORGANIZATIONAL STRUCTURE OF EXECUTIVE AGENCY FOR JOINT PROJECTS



General Functions

i) Design and establish different patterns of low income housing.

ii) Develop and improve existing condominiums through raising the standards of health, security and services.

iii) Transfer the ownership of new houses to low income families and provide them with loans and financial facilities in cooperation with local banks and other agencies.

iv) Organize and sustain social institutions and cooperative societies wishing to establish new condominiums or improve existing ones.

v) Develop and improve construction materials and construction methods and use new local construction materials when possible; carry out training programs in the field of housing design and project execution.

vi) Evaluate joint housing projects to establish a comprehensive policy concerning land use, executive housing projects; carry out plans to participate in solving such housing problems.

vii) Implement plans for joint follow-up projects within the State's public policy.

viii) Suggest, study and carry out housing legislation.

2. **Ministry of Transport, Communication and Maritime Transport**
Presidential Decree No. 381/1976, 1097/1974 and 985/1972

Objective

Provide transport and communications facilities to meet the requirements of socio-economic development. (Figures III-28 and 29)

General Functions

i) Study and prepare the draft plans of transport, coordinating with the national socio-economic plan.

ii) Coordinate all networks and forms of transport and communications.

iii) Conduct research and technical studies necessary for the development of transport and communications.

iv) Provide security for the safety and protection of all the means of transport and communications.

v) Maintain the transport and communications system.

FIGURE III-28
MINISTRY OF TRANSPORT, COMMUNICATIONS AND MARITIME TRANSPORT AND ITS AFFILIATED AGENCIES

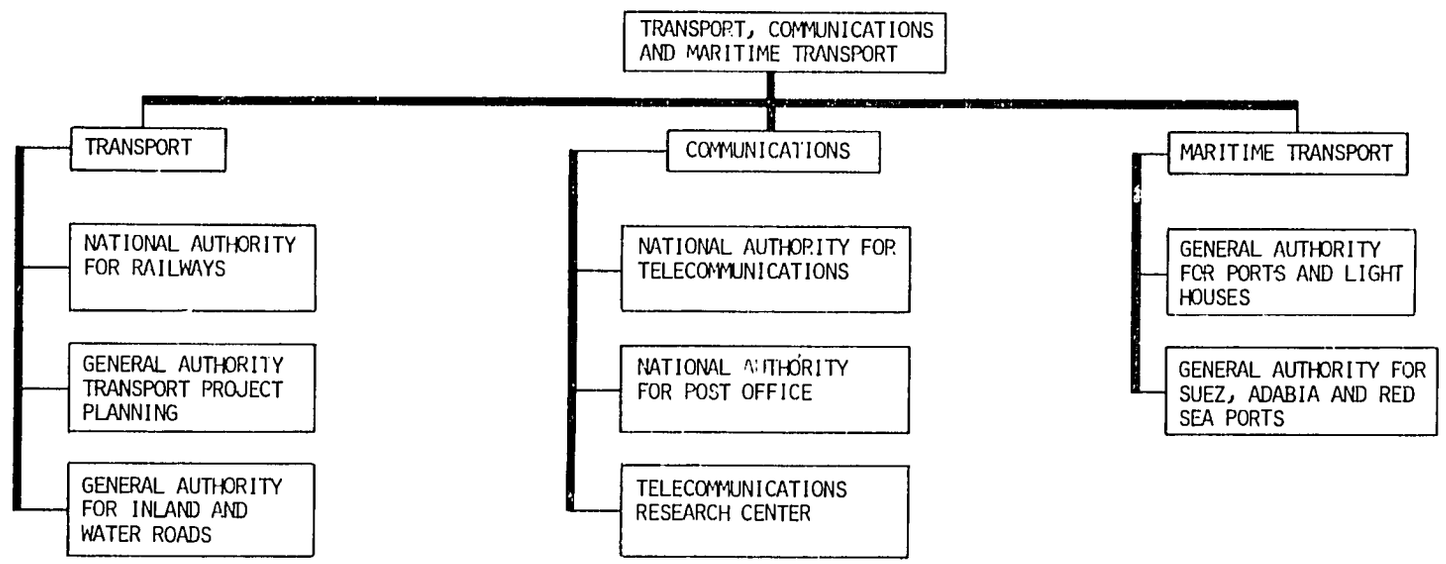
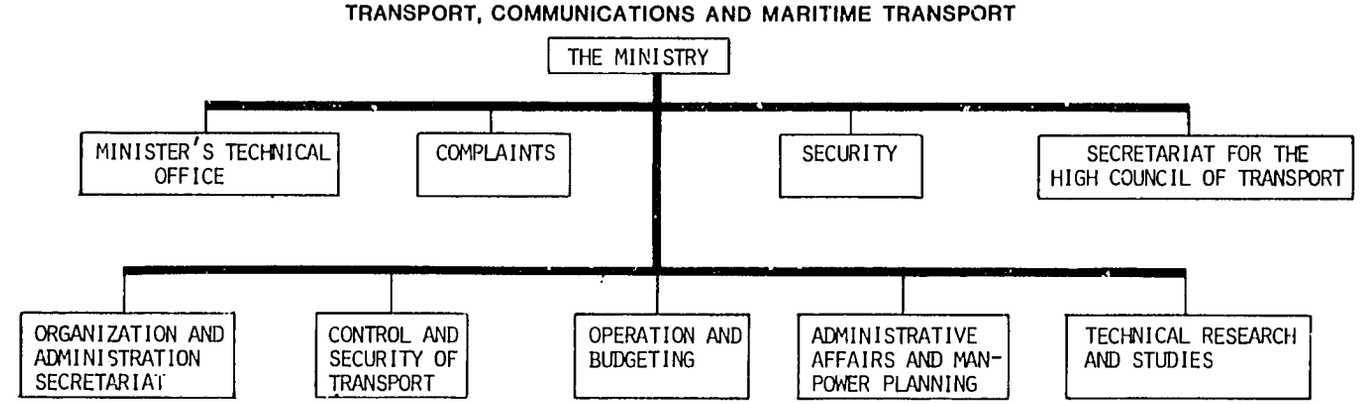


FIGURE III-29
ORGANIZATIONAL STRUCTURE OF THE HEADQUARTERS OF THE MINISTRY OF TRANSPORT, COMMUNICATIONS AND MARITIME TRANSPORT



3. **Ministry of Electricity and Power**
Presidential decrees No. 1103/1974 and 14/1978

Objective

Electricity and power generation and distribution. (Figure III-30)

General Functions

i) Formulate the general policies for power generation and distribution; implement, plan and program for power generation and distribution.

ii) Study alternative power sources and the optimum utilization of the available resources.

G. The Social Service Ministries

The Social Service Ministries are primarily the Ministries of Education, Health, Supply and Social Affairs. This does not mean that other Ministries may not render social services, as categories inevitably overlap.

1. **Ministry of Education**

Objective

To educate on a wide scale at the undergraduate level in all fields, general and technical. This should be within the general state policy and the national objectives. (Figure III-31)

General Functions

i) Study and suggest the educational policy at the undergraduate level, within the framework of the general state policy and the national objectives.

ii) Set plans, projects and programs for the execution of these policies. Issue decrees and regulations which facilitate its execution.

FIGURE III-30
ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF ELECTRICITY AND POWER

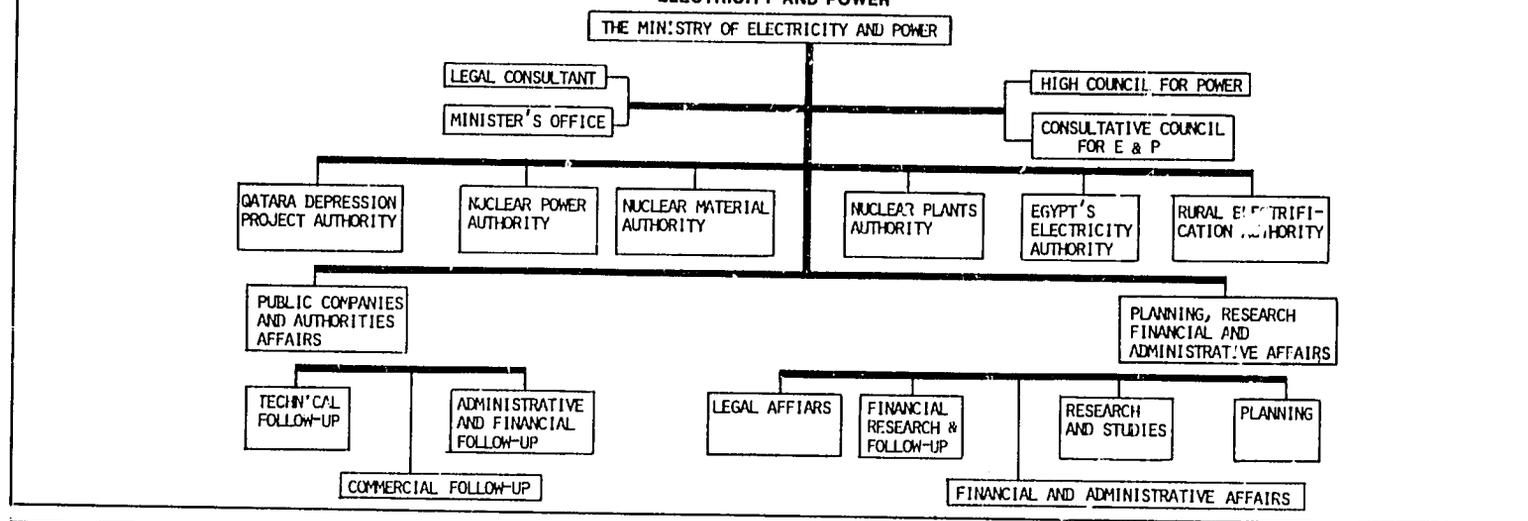
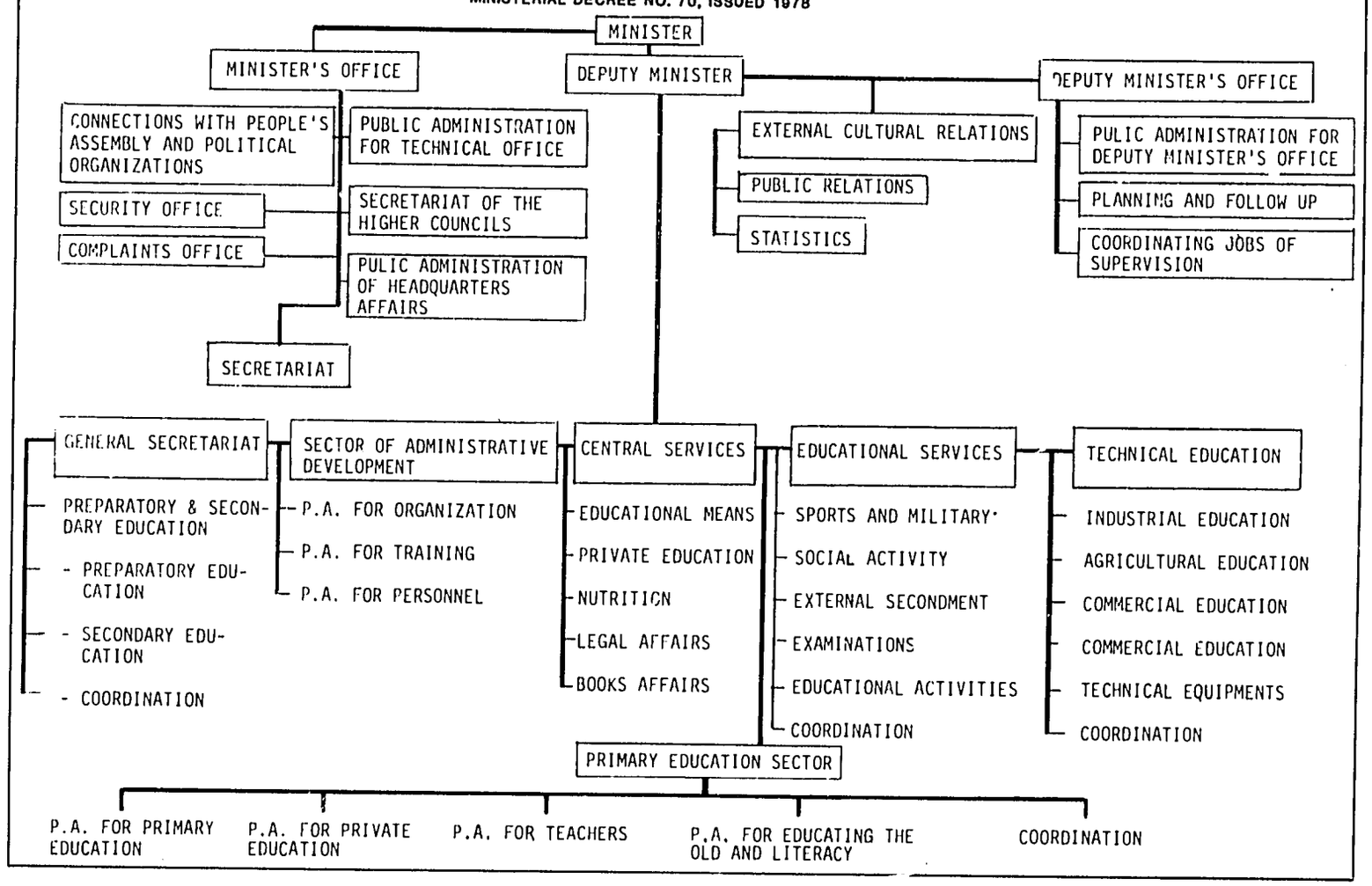


FIGURE III-31
MINISTRY OF EDUCATION
MINISTERIAL DECREE NO. 70, ISSUED 1978



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iii) Determine the means to provide education at the widest scale, taking into consideration the available capabilities.

iv) Consider the geographical distribution of educational services to ensure equal distribution for all citizens, without detriment to the local council's authority in this field.

v) Determine curriculum, materials and teaching methodologies to ensure coordination and integration of courses at the different levels of education.

vi) Determine the requirements for teaching staff for every level of education and set plans to reach these levels.

vii) Arrange contacts with universities and high institutes, ministries, agencies and institutions so as to coordinate educational planning with the skill requirements for these authorities.

viii) Consider the relationship between school and society through local advisory councils, parents' committees, teachers' committees and school societies.

ix) Develop a policy for building schools so that the educational services could be realized in an efficient way and encourage parents to participate in school construction.

x) Encourage external cultural relations in the field of education.

xi) Estimate the financial resources needed for educational projects and suggest the necessary budget.

xii) Follow up on the execution of planned projects at the ministry, governorate, and local council level.

xiii) Develop economic and statistical estimates for the educational processes at the national level and issue annual reports regarding the results.

2. The Ministry of Health

Objective

To protect the health of the citizens through preventive and curative health services at the central and local level with the agreement of the local authorities. (Figure III-32)

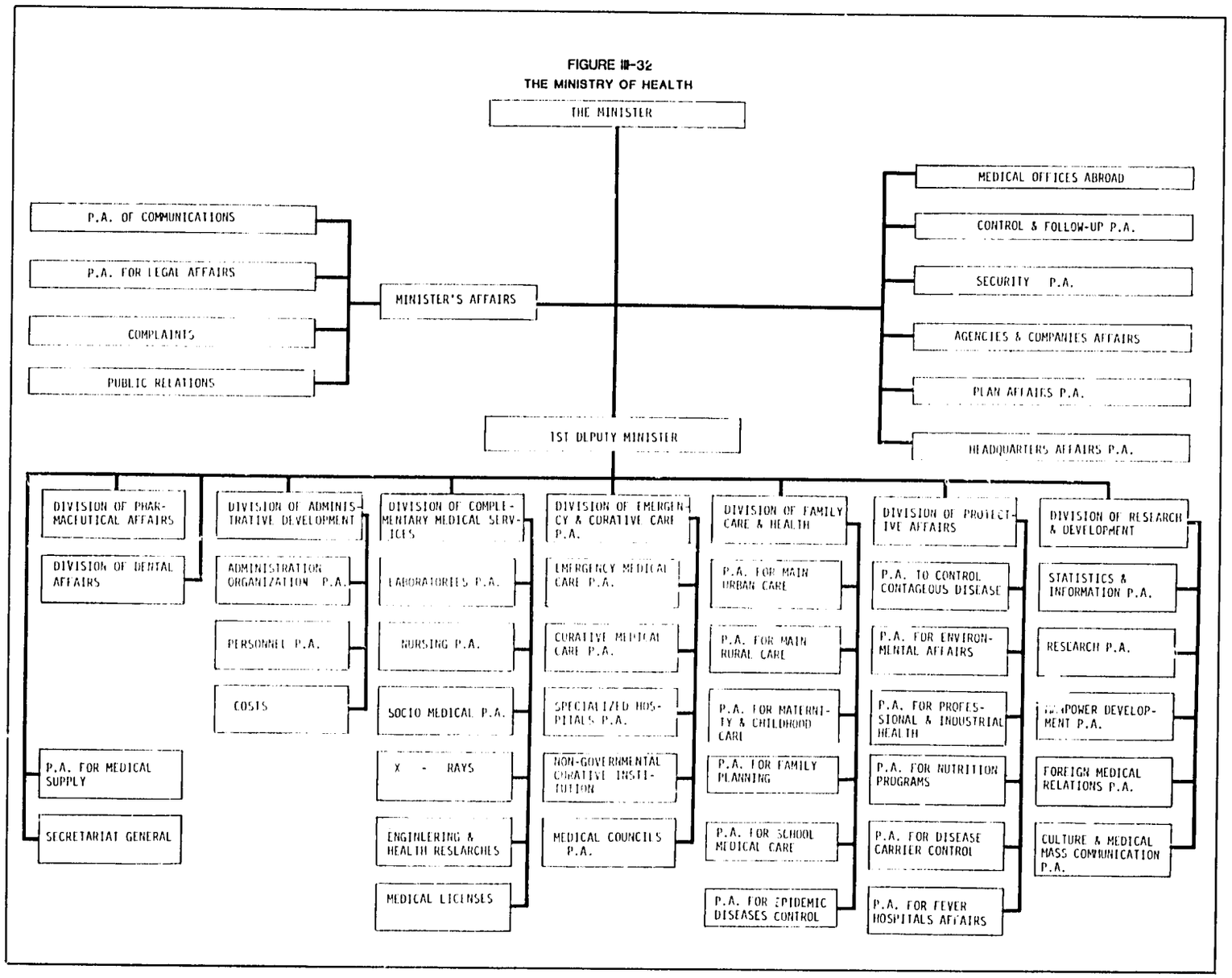
General Functions

i) Develop health policy within the framework of the State's general policy.

ii) Plan health services within the framework of National Planning.

iii) Collect and record statistical data on health. Analyze such data and produce information for the planning and implementation of health programs.

iv) Execute health policies. Develop plans to improve the efficiency of health care delivery services and raise such services to world standards.



v) Evaluate performance of the health services using qualitative and quantitative measures.

vi) Carry out central health services, including central laboratories and medical parties. Administer health manpower activities and issue medical licenses.

vii) Plan for mobilization to face health emergencies in peace and war, including disasters, injuries and infectious disease.

viii) Manage health services and health units that function on the national level in agreement with the specialized agencies. The Minister decides the affiliation of these units to the different sections of the Ministry.

ix) Coordinate activity between all the local health agencies in the governorates and help them develop and organize their services in order to solve health problems.

x) Promote international cooperation in the health field, in accordance with the foreign policy of the State, through conferences and with international organizations working in this field. Promote fellowships and secondments, international and bilateral, and supervise their execution.

xi) Coordinate between the Ministry and the agencies of scientific research in health, within the frame of the national plan for scientific and technological research.

3. Ministry of Social Affairs

Objective

Promote social development and cohesion of Egyptian society and support it within the framework of the General State Policy. (Figure III-33)

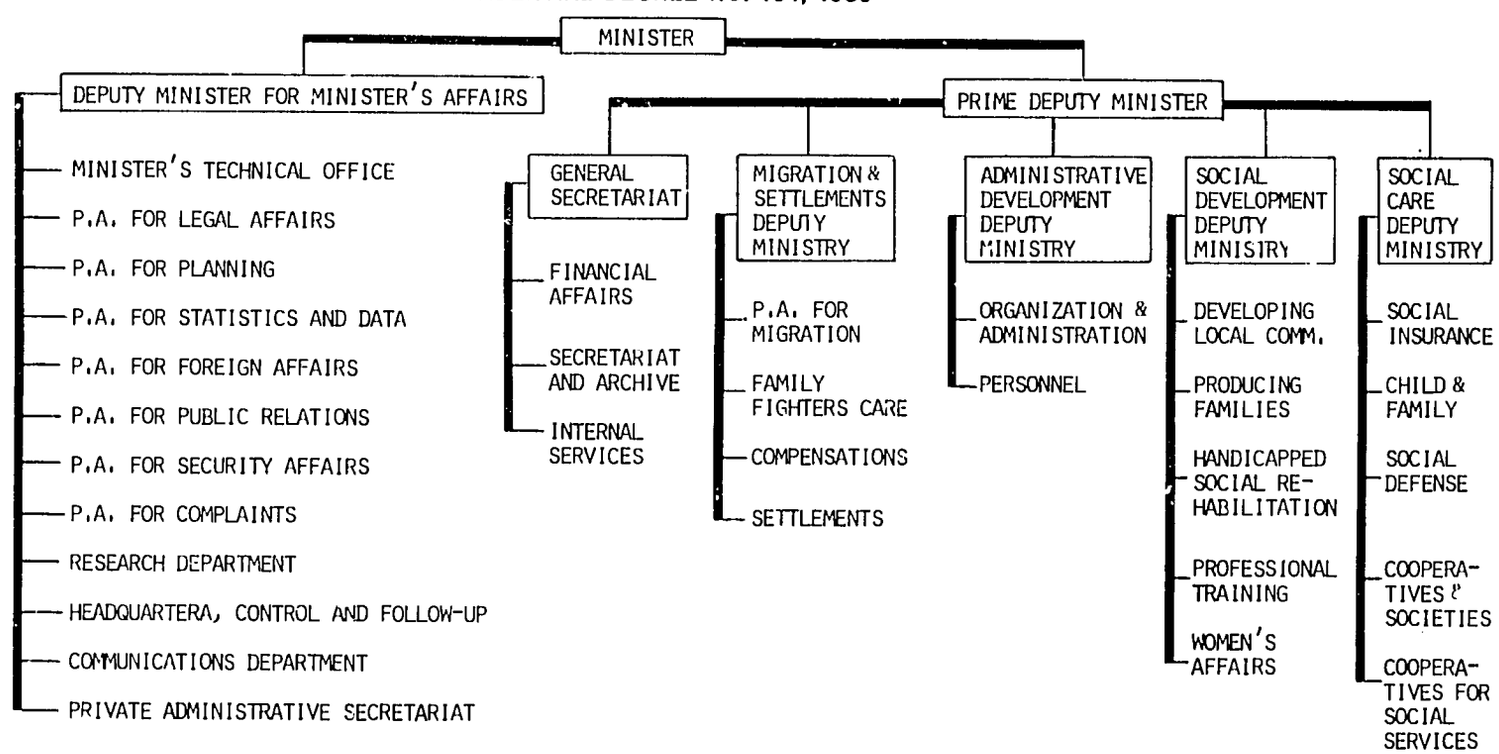
General Functions

i) Set the plans and programs of the Ministry within the framework of the State social policy. Undertake necessary research and follow up the results of local and national research, set general policy for the administrative development of agencies working in social fields, evaluate results, organize conferences and set the rules for joining into international agreements concerning social problems.

ii) Plan care for mothers and their children, offer the necessary services to the families, work to increase family income, help retarded people, provide care to old people, widen the services of social security and relate it with the Social Insurance System to increase coverage of insurance, and respond with assistance in case of general disasters.

iii) Develop policies, programs and projects which recognize the role of private assistance groups. Coordinate private and public social welfare activities, avoiding unnecessary duplication. Assist cooperative societies, both consumer groups and producer groups, to develop means to prevent crime and cure juvenile criminals. Develop programs in the field of social defense.

FIGURE III-33
MINISTRY OF SOCIAL AFFAIRS
PRESIDENTIAL DECREE NO. 151, 1980



iv) Develop plans and programs for the social development of local communities and relate social development policy with economic development policy. Set professional training programs for those who completed their primary education. Develop rural household and environmental industries. Improve services for the handicapped to make them more productive. Regulate the public services for graduates in order to achieve the national objectives. Set a policy for the role of women in developing the society.

v) Develop programs to limit the social impact of increases in population densities. This includes encouraging migration to new communities, providing social services to residents of such communities, assisting rural migrants in adapting to urban environments, and assisting any such migrants to return to rural areas when needed.

vi) Plan the financial and administrative policy to execute the social work programs and projects.

vii) Suggest amendments to social legislation and issue decrees and regulations for the execution of the Ministry's plans and programs.

viii) Control the Ministry's activities and follow up, to ensure activities are achieved by the determined dates with appropriate quality within the framework of the planned policy.

ix) Establish training and research centers and manage their administration in order to serve governorates in the field of social development and care.

4. Ministry of Supply and Internal Trade
Presidential Decree No. 212/79 and Ministerial Decrees 18/80 and 19/80.

Objective

The fulfillment of the citizen requirements for various basic commodities and goods within the framework of the State economic plan. (Figure III-34) This will be secured through:

i) Supply of domestic or imported products.

ii) Regulation of the handling and delivery of the commodities and goods.

iii) The pricing of basic commodities and goods and supervising the equity of their distribution.

iv) The promotion and regulation of internal trade.

General Functions

i) Propose and implement the supply policies of the State.

ii) Assess the needs of various commodities required for local consumption according to market research and consumption standards.

iii) Conduct studies on the production location of basic commodities and goods and the channels of their distribution.

iv) Supervise the distribution of commodities and goods among governorates.

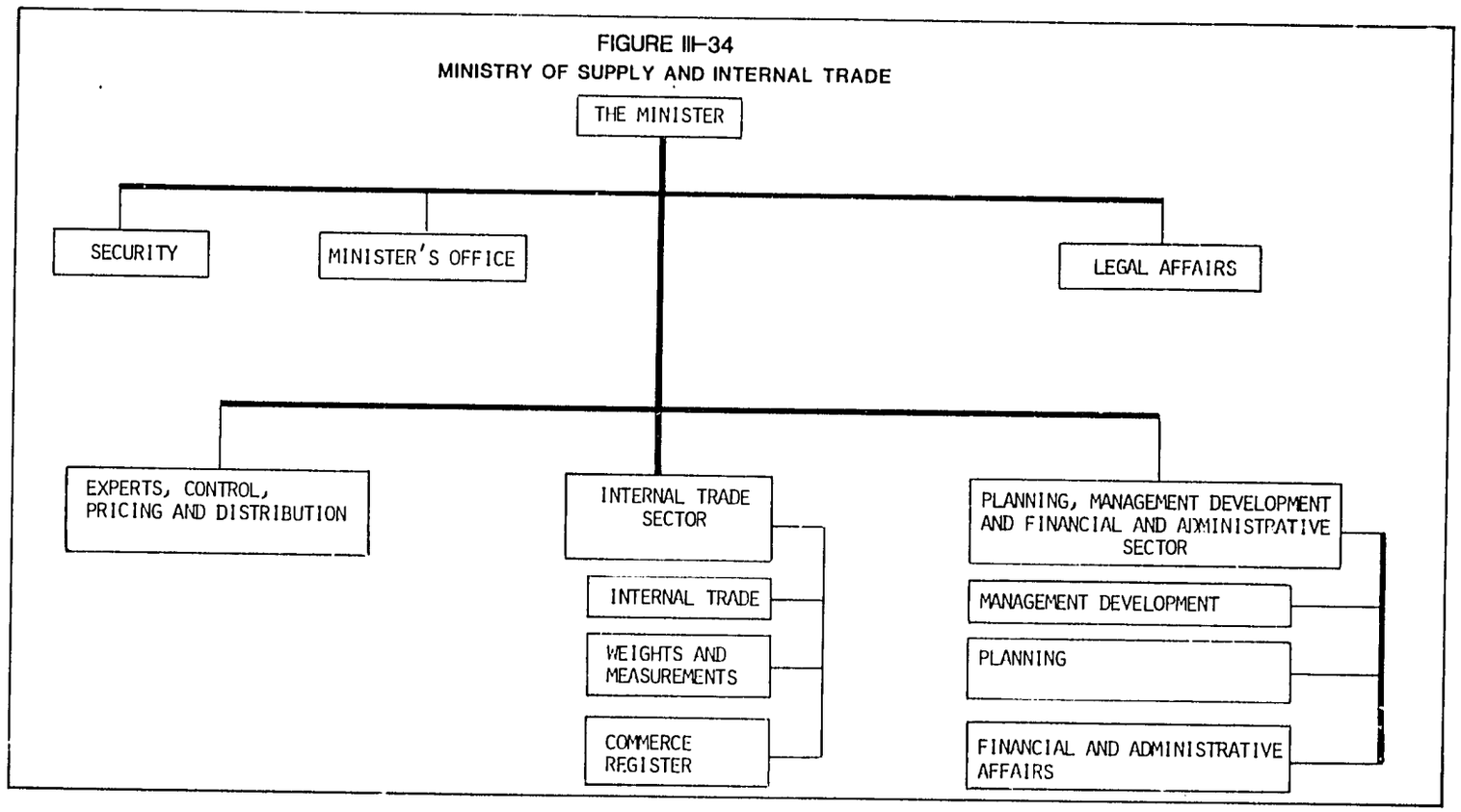
v) Fix the prices of commodities and goods for the local markets and determine the rate of profit for imported commodities and goods.

vi) Supervise the consumer cooperatives and support them with services and technical guidance.

vii) Supervise and regulate internal trade, the commercial register and trade marks.

viii) Supervise the Chambers of Commerce.

FIGURE III-34
MINISTRY OF SUPPLY AND INTERNAL TRADE



IV. NATIONAL LEVEL PUBLIC ECONOMIC UNITS

A. Historical Background

The private sector had been the dominant force in almost all walks of economic life in Egypt before the Revolution of July 1952. With the advent of the Revolution and until July 1961, Egypt witnessed three major trends in this connection.

i) Towards Egyptianization of foreign private enterprises which were dominant in some economic activities.

ii) Towards state ownership of some shares in private companies.

iii) Towards the creation of public enterprises especially in the newly built plants and factories.

With formal adoption of socialism as the political ideology of the State, the Government issued a group of decisions called the "socialist decisions of July 1961" affecting the nationalization of almost all the private enterprises completely or partially in the areas of commerce, insurance, agriculture, industry and finance.

To manage these nationalized enterprises, the Government created what was called the "public organization" (Mouassa Ama). This public organization was initially created to coordinate, integrate, and guide the work and activities of a number of economic units which work in one area or sector (chemical industries, transport, etc.). However, the partially nationalized industries continued to a great extent to work as private companies.

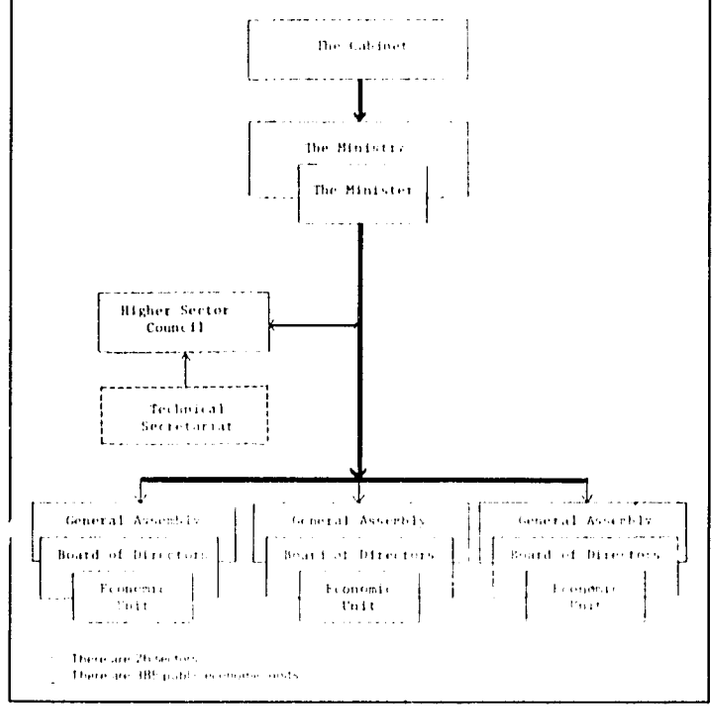
Through the period from 1961-1974, the economic units suffered from many problems which resulted in low productivity. The most important were:

i) The public organization had become a controlling super-organization that held in its hands all the critical decisions and dominated all the major activities.

ii) Red-tape and bureaucracy crept into the public organizations and resulted in inefficiency.

iii) The appointment of retired army officers and other personnel to top management positions in accordance with what was termed "men of trust before men of expertise".

FIGURE IV-1
THE GENERAL STRUCTURE OF PUBLIC ECONOMIC UNITS



iv) Affiliated economic units were grouped on the basis of product or function, not always considering their production processes. Thus attention has been given more to administrative control than to the production process.

v) Public economic units were subject to a multiplicity of government controlling bodies whose functions were overlapping, duplicating and confusing.

vi) A uniform grading system for salaries and wages for quasi-civil servants was imposed. This resulted in the lack of competent personnel.

B. The Present Structure

After the October war and the adoption of the open door economic policy (Infitah), there was a trend to liberate the Egyptian economic enterprises and free them from many constraints that impede their work and action. A law was issued in 1975 (Law 111/1975) which cancelled the public organizations as super organizations over the economic units in order to enable them to take over the real management functions.

According to the provisions of this law, public economic units of similar or related activities are grouped in sectors; the following structure relates to each sector's organization. (See Figure IV-1)

1. Higher Council Composition

i) Chairman of the Board of Directors of the companies are members of the Higher Council.

ii) Three officials representing the ministries of planning, finance and economy.

iii) A maximum of five external experts.

iv) The Council is headed by the concerned minister.

2. The Functions of the Higher Council

i) Setting the overall objectives for the sector in light of national policies and plans.

ii) Determining the specific goals for each enterprise within the sector.

iii) Laying down general policies to be used by the company's board of directors as yardsticks to guide their activities.

iv) Approving the sector's plan and effecting the proper coordination among the company plans.

v) Encouraging research, development and modernization efforts, and helping in solving the problems faced by the sector companies.

vi) Following-up and evaluating the performance of the companies within the sector.

vii) Working as liaison between the sector and the governmental agencies, especially the central control agencies.

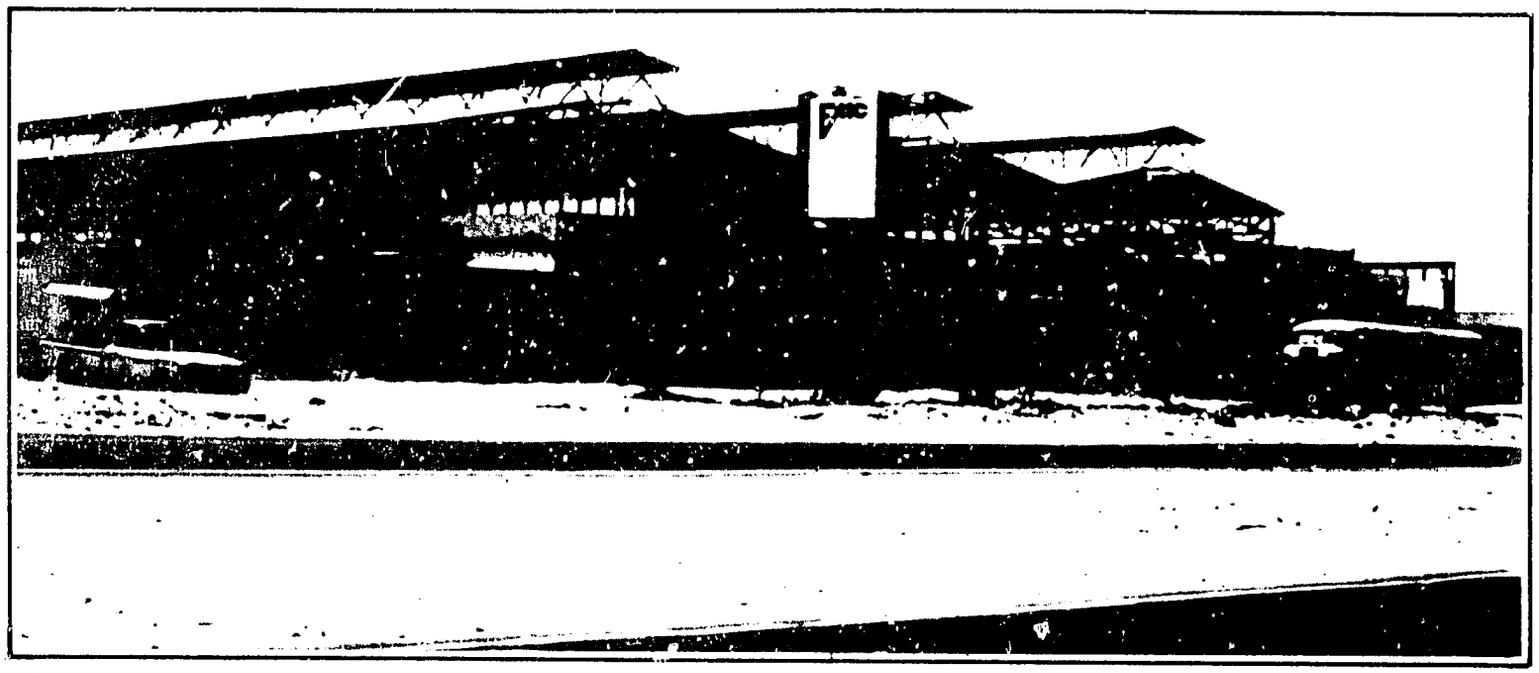
A Technical Secretariat has been established for each Higher Sectoral Council to prepare for the meetings, collect data and information, and conduct the required studies. It consists of a professional staff and is headed by a senior official.

The General Assembly for each economic unit has been formed to perform the functions of comprehensive control and evaluation of the public company's activities.

The General Assembly meets twice a year and is presided over by the minister in charge. It is composed of representatives of the following: Ministries of Planning and Finance (one member each), Higher Sectoral Council (five members), company workers (four members) and external experts (three members).

The Board of Directors, according to Law 111/1975, of completely state-owned public economic units differs from that of partially state-owned. The totally public-owned units have between seven and ten members. The chairman and half of the board members are appointed by the Prime Minister, while the other half are elected from among the workers of the public company. Up to two external experts can be appointed.

The board of directors of the mixed public economic unit is the same size. The chairman and a number of members, in accordance with the percentage of public ownership, are appointed by the Prime Minister. Members representing other owners are selected by the general assembly. Their number should not exceed half the board members. Workers should have equal representation to the other types of members. In addition, up to two external experts can be appointed by the Prime Minister.



Tables IV-1 and 2 detail public companies in Egypt according to sector, location and number of personnel.

TABLE IV-1
SUMMARY OF PUBLIC COMPANIES IN EGYPT ACCORDING TO SECTORS

No.	Sector	No. of Companies	Personnel	
			No.	%
1.	Food Processing	21	73,762	6.9
2.	Textiles, Ready-made Cloth	30	290,669	27.0
3.	Chemicals	26	55,748	5.2
4.	Metallurgical	29	100,708	9.4
5.	Mining and Chemicals	9	21,379	2.0
6.	Petroleum	15	26,992	2.5
7.	Military Production	15	46,051	4.3
8.	Electricity	11	33,102	3.1
9.	Banking	8	24,642	2.3
10.	Foreign Trade	13	19,069	1.8
11.	Cotton	12	14,557	1.3
12.	Commercial Insurance	4	9,121	0.8
13.	Supply and Internal Trade	43	84,068	7.8
14.	Maritime Transport	16	26,573	2.5
15.	Internal Transportation	17	48,141	4.5
16.	Housing and Infrastructure	10	10,170	0.9
17.	Construction & Building Materials	45	76,268 1/	7.1
18.	Agriculture	7	10,415	1.0
19.	Irrigation	6	7,462	0.7
20.	Land Reclamation	13	19,921	1.8
21.	Cooperatives & Agricultural Credit	18	29,981 1/	2.8
22.	Tourism and Civil Aviation	6	18,384	1.7
23.	Drugs	11	22,388	2.1
24.	Printing and Publishing	2	3,127	0.3
25.	Culture and Mass Communications	3	1,65[illegible]	0.1
26.	Communications	1	95[illegible]	0.1
TOTALS		391	1,075,303	100.0

1/ Incomplete total due to unavailable personnel information for certain sectors.

SOURCE: Central Agency of Organization and Administration, Cairo, May 1981.

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TABLE IV-2a
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

I. FOOD PROCESSING COMPANIES

No.	Name of Company	Type of Products	Location	Personnel
1.	Eastern Company for Tobacco & Cigarettes	Cigarettes of all kinds, cigar, tobacco	Giza	9,296
2.	El Nasr Co. for Tobacco & Cigarettes	Cigarettes, cigars, tobacco	Giza	5,203
3.	The Egyptian Salt & Soda Company	Sea salt, edible salt, refined salt	Alexandria	5,078
4.	Tanta Company for Cotton Seed, Oil & Soap	Soap, flax fibers	Tanta	3,310
5.	Cairo Company for Cotton Seed, Oil & Soap	Laundry soap, flax oil, bran, fodder	Cairo	1,719
6.	Alexandria Company for Cotton Seed, Oil & Soap	Edible oils, cooked cheese, medical & synthetic glycerine	Alexandria	3,832
7.	El Nil Company for Cotton Seed, Oil & Soap	Laundry soap, edible oils, fodder, bran, Eau	Mostorod/ Qalyubia	1,939
8.	Misr Co. for Cotton Seed, Oil & Soap	Edible oils, laundry soap	Cairo	1,316
9.	Extracted Oils & Their Products Co.	Edible oil, laundry soap, fodder, bran	Alexandria	1,875
10.	Misr Co. for Dairy and Food	Dairy products	Cairo	2,750
11.	Edfina Co. for Preserved Food	Jam, cooked vegetables, fruits, juice & fish	Alexandria	3,274
12.	El Nasr Co. for Canned Food (KAHA)	Fruit, juice, jam, canned fruits	Kaha/Qalyubia	2,073
13.	The Egyptian Co. for Food (Besco-Misr)	Biscuits, chocolate, toffee, corn-flex	Cairo	3,197
14.	Alexandria Co. for Candy & Chocolate	Chocolate, sweets, jams, juice	Alexandria	2,639
15.	Cairo Co. for Food Flavors & Perfume Essence	Perfumery oils, cosmetics	Giza	733
16.	El Nasr Bottling Co. (SIKS)	Soft drinks	Giza	2,500
17.	The Egyptian Bottling Co.	Soft drinks	Giza	2,093
18.	Al Ahram Beer Company	Beer	Giza	818
19.	The Egyptian Co. for Starch & Yeast Products	Food starch, manufactured starch, glucose	Alexandria	1,603
20.	Egyptian Co. for Starch & Glucose	Glucose, starch, bran	Cairo	1,730
21.	The Egyptian Sugar & Distillery	Sugar, molasses, alcohol, perfume	Cairo/Hawam-	16,784
	TOTAL			73,762

II. TEXTILES & READY MADE CLOTH

No.	Name of Company	Type of Products	Location	Personnel
1.	Misr Spinning & Weaving Company Mahalla El Kobra	Spinning & weaving, cotton knitting & textiles	Mahalla	32,610
2.	Misr Pine Spinning & Weaving Company, Kafr El Dawar	Fine cotton textiles	Kafr El Dawar	24,980
3.	Industrial Establishment for Silk & Cotton (ESCO)	Cotton & silk spinning and weaving	Bahteem/Qalyubia	22,596
4.	Misr Helwan Spinning & Weaving Co.	Fine cotton spinning & weaving	Helwan	18,320
5.	National Spinning & Weaving Company	Spinning & weaving & sewing threads	Alexandria	14,240
6.	El Siuf Spinning & Weaving Company (Sapahi)	Cotton & silk spinning, combed, single & double threads	Alexandria	9,608
7.	El Nasr Spinning, Weaving, & Knitting Co. (shourbagui)	Spinning & weaving, cotton & woolen textiles	Imbaba	5,142
8.	El Sharkia Co. for Flax & Cotton	Towels, cotton yarn, flax textiles & fire hoses	Alexandria	8,010
9.	El Nasr Spinning & weaving Co., Damietta and Mansoura	Spinning & weaving textiles, ready made cloth	Damietta	7,291
10.	El Dakahlia Spinning & Weaving Co.	Textiles spinning & weaving	Mansoura	7,358
11.	Upper Egypt Spinning & Weaving Co.	Spinning & weaving	Sohag	8,900
12.	Middle Egypt Spinning & Weaving Company	Varied threads, unfinished & finished materials	Minia	10,009
13.	Misr Shebin El Kom Spinning & Weaving Company	Cotton spinning & weaving	Shebin El Kom	9,798
14.	Arab United Spinning & Weaving Co.	Spinning & weaving	Alexandria	9,051
15.	Alexandria Spinning & Weaving Co.	Fine cotton spinning, sewing threads. fiber, spining	Alexandria	6,504
16.	Delta Spinning & Weaving Company	Spinning & weaving	Tanta	4,655
17.	Misr Beida Dyers Company	Dyeing & printing of textiles & threads	Kafr El Dawar	7.055
18.	El Nasr Co. for Spinning, Weaving & Dyeing -- Mahalla El Kobra	Dyeing, spinning & weaving and ready made cloth	Mahalla	13,990
19.	El Kahira Co. for Dyeing & Finishing	Medical cotton, threads, tiba and Ragatex dye	Shoubra El Kheima	2,786
20.	Modern Textiles Company	Textiles spinning & weaving	Alexandria	1,531

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TABLE IV-2b
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

II. TEXTILES & READY MADE CLOTH (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
21.	El Kahira for Silk Textures	Cotton & silk clothes, synthetic fibers, novelty	Shoubra El Kheima	7,052
22.	El Nasr Co. for Wool & Distinguished Textiles (STIA)	Woolen textiles, ready made cloth	Alexandria	10,204
23.	Egyptian Company for Wool Spinning & Weaving (WOOLTEX)	Woolen textiles, ready made cloth	Shoubra El Kheima	9,129
24.	El Nasr Spinning & Weaving Co., Port Said & Zagazig	Spinning & weaving, woolen textiles, fishing net	Port Said/ Zagazig	6,763
25.	El Nasr Co. for Clothes & Textiles (KABO)	Cotton underwear, woolen clothes	Alexandria	6,719
26.	El Kahira Co. for Clothes & Knitting	Clothes & underwear, suits, spinning & weaving	Cairo	6,730
27.	Misr Rayon Company	Rayon textiles	Kafr El Dawar	8,897
28.	Arab Company for Carpets & Linens	Carpets & blankets	Damanhour	2,852
29.	General Company for Jute Products	Cotton packages, cesal strings, jute products	Shoubra El Kheima	6,823
30.	Misr Co. for Spinning & Weaving Equipment	Spinning & weaving equipment	Helwan	1,066
	TOTAL			290,669

III. CHEMICAL INDUSTRIES COMPANIES

No.	Name of Company	Type of Products	Location	Personnel
1.	The Egyptian Chemical Industries Co., Kima	Fertilizer, Nitrate, Ferro Selicon	Aswan	2,191
2.	El Nasr Company for Fertilizer and Chemicals Industries	Fertilizers and chemicals	Suez & Talkha	6,501
3.	The Egyptian Financial & Industrial Company	Fertilizers and chemicals	Kafr El Zayat	2,295
4.	Abu Zaabel Fertilizer & Chemical Co.	Fertilizer, heavy chemicals, Nitric Acid	Abu Zaabel	1,798
5.	The Paper Converting Co. (VERTA)	Textile paper, tubes, cartons	Alexandria	2,568
6.	Moharram Industrial Printing Press Company	Printing, medical packages, playing cards, glues, paper	Alexandria	2,893
7.	The Egyptian Timber Manufacturing Company	Plywood veneer, furniture	Cairo	1,578

III. CHEMICAL INDUSTRIES COMPANIES (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
8.	The National Plastic Company	Plastic household appliances	Shoubra El Kheima	2,394
9.	Egyptian Plastics & Electrical Industries Company	Wallpaper, batteries, plastic cloth & spare parts	Alexandria	2,416
10.	The Nile Matches Company	Matches, boxes, wooden products, plywood, compressed wood	Alexandria	2,248
11.	The Egyptian Leather Industry Co.	Light & heavy leather products, compressed leather	Cairo	1,299
12.	Tanta Flax & Oils Company	Flax fibers	Tanta	1,274
13.	Misr Chemical Industries Company	Soda, chloride calcium, hydrogen gas, liquid oxygen	Alexandria	2,918
14.	Industrial Gases Company	Oxygen and other gases used in industry	Alexandria	1,613
15.	Kafr El Zayat Co. for Insecticides & Chemicals	Insecticides	Kafr El Zayat	583
16.	Dyeing Material & Chemicals Co.	Dyeing materials, sulfuric dyes, medium materials	Kafr El Dawar	1,673
17.	El Nasr Co. for Coke & Basic Chemicals	Coke production	Helwan	5,797
18.	Abu Keer Co. for Fertilizers & Chemicals Industries	Field production of gases for fertilizer production	Alexandria	1,472
19.	Paints & Chemicals Industries Company	Paints, varnish, printing ink, animal bone oil	Cairo	954
20.	Transport & Engineering Company	Tires & tubes, trucks, tractors & motorcycles	Alexandria	2,456
21.	El Nasr Tannery Company	Leather products, military & civilian footwear	Alexandria	727
22.	El Nasr Co. for Rubber Products	Rubber strings, hoses, spare parts	Shoubra El Kheima	2,400
23.	General Company for Manufacturing	Paper production, compressed paper	Alexandria	2,047
24.	Mideast Company for Paper	Paper, carton backing productions	Shoubra El Kheima	912
25.	National Company for Paper	Paper	Alexandria	2,336
26.	Nasr Company for Pencils and Graphite Products Co.	Pencils and graphite products	Nasr City/ Cairo	405
	TOTAL			55,748

TABLE IV-2c
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

IV. METALLURGICAL INDUSTRIES

No.	Name of Company	Type of Products	Location	Personnel
1.	Iron and Steel Company	Iron & steel products, phosphate fertilizer	Helwan	20,637
2.	Egyptian Copper	Copper pipes & aluminum wires, iron & steel casting	Alexandria	6,616
3.	Delta Steel Mills Company	Concrete iron, steel wire, pipe, cast iron steel valves for petroleum	Shoubra El Kheima	3,419
4.	El Nasr Forgings Co.	Steel forgings for motor-cars, tractors and railway wagons, workshop tools	Helwan	2,212
5.	El Nasr Steel Pipes & Fittings Co.	Steel pipes, black pipes, steel fittings	Helwan	3,486
6.	National Co. for Metallic Industries	Steel concrete iron	Abu Zaabal/ Qalyubia	2,623
7.	General Company for Metals	Pure brass, lead oxide, auto spare parts	Cairo	1,432
8.	El Nasr Company for Metals Casting	Cast iron, steel, nickle and chrome	Alexandria	2,090
9.	El Nasr Automative Manufacturing Co.	Tractors, cars, buses, lorries, agricultural machines	Helwan	9,793
10.	Alexandria Maritime Arsenal	Ship-building, tankers	Alexandria	5,632
11.	The Egyptian Company for Railway Equipment (SIMorf)	Railway wagons & equipment	Helwan	2,678
12.	The Egyptian Company for Manufacturing Light Means of Transport	Motorcycles, bicycles, light means of transport equipment	Helwan & Giza	3,079
13.	Spiral Springs & Means of Transport Equipment Company	Springs & spare parts for means of transport	Cairo	762
14.	Engineering Projects Company for Steel Works (STEEL CO.)	Steel works	Cairo	3,220
15.	Egyptian Co. for Metallic Constructions (METALCO)	Metallic, metal pipes, fixed & mobiled bridges, cranes & towers, factories equipment	Shoubra El Kheima	2,627
16.	El Nasr Co. for Vapor Boilers of Pressure Receptacles Manufacture	Vapor boilers, pressure receptacles	Giza	923
17.	Misr Co. for Engineering & Tools	Engineering equipment, survey & workshop tools	Shoubra El Kheima	1,263
18.	Delta Industrial Co. (IDEAL)	Electric refrigerators, washing machines, house & office equipment & furniture	Cairo	7,020

IV. METALLURGICAL INDUSTRIES (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
19.	Alexandria Co. for Metallic Products	Shaving blades, medical equipment	Alexandria	1,497
20.	Cairo Co. for Metallic Products	Household appliances, varnish, pipes & sanitary equipment	Cairo	1,109
21.	The Egyptian Co. for Delicate Mechanical Industries	Building equipment	Shoubra El Kheima/Qalyubia	1,755
22.	The Egyptian Co. for Electrical Cables	Bare wires & cables for phone lines & transportation	Shoubra El Kheima/Qalyubia	2,597
23.	General Company for Batteries	Batteries of different kinda & sizes	Cairo	2,317
24.	Constructions & Industrial Services Company	Industrial constructions & equipment, electrical joints	Cairo	1,262
25.	El Nasr Co. for Engineering & Refrigeration (Coldair)	Air conditioning, electrical equipment	Giza	2,575
26.	Arab Co. for Transitor Radio or Electronic Equipment	Radio, T.V., cassettes, records	Giza	1,726
27.	El Nasr Co. for T.V. and Electronics	T.V. sets, medical earphones	Cairo	3,058
28.	El Nasr Company for Electrical and Electronic Sets (Philips)	T.V. and radio sets, electrical lamps	Alexandria	3,300
29.	The Egyptian Co. for Ferro Alloys	Ferro alloys & ferro silicon alloy	Edfo	N.A.
	TOTAL			100,708

V. MINING AND CHEMICALS

No.	Name of Company	Type of Products	Location	Personnel
1.	El Nasr Salines Company	Salt	Alexandria	1,947
2.	El Nasr Phosphate Company	Phosphate, chrome	Sinai	2,249
3.	The Red Sea Phosphate Company	Phosphate	Quseir	2,744
4.	Sinai Maganese Company	Manganese	Sinai	344
5.	Misr Phosphate Company	Phosphate	Quseit	2,180
6.	El Nasr Company for the Production Ceramics & Porcelain (Sornage)	Ceramics & porcelain	Giza	1,557

TABLE IV-2d

PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

V. MINING AND CHEMICALS (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
7.	General Company for Ceramics and Porcelain	Earthen ware and china ware products for household and sanitary purposes	Shoubra El Kheima	2,265
8.	El Nasr Company for Glass and Crystal Industry	Motor car glass, bottles for beer and perfumes	Shoubra El Kheima	6,972
9.	The Egyptian Ceramics Comapny	Ceramic blocks and tiles	Helwan/ Alexandria	1,121
	TOTAL			21,379

VI. PETROLEUM

No.	Name of Company	Type of Products	Location	Personnel
1.	General Petroleum Company		Cairo	2,534
2.	Suez Gulf Petroleum Company (Gabco)			1,416
3.	Elaaeem Petroleum Company		Alexandria	1,621
4.	Western Desert Petroleum Company (Wepco)			N.A.
5.	Suez Oil Processing Company	Processing and refining of petroleum, petrochemicals	Suez	5,543
6.	El Nasr Company for Petroleum		Alexandria	2,940
7.	Alexandria Petroleum Company	Refining oil and asphalt products	Alexandria	N.A.
8.	Misr Petroleum Company	Marketing & distributing oil & its extracts	Cairo	6,181
9.	Petroleum Cooperative Society	Marketing & distributing oil & its extracts	Cairo	4,960
10.	Petroleum Pipelines Company		Qalyubia	1,797
11.	Petroleum Gases		Cairo	N.A.
12.	Arab Petroleum Pipelines Company (Sumed)		Alexandria	N.A.
13.	Petrochemical Project Company		Cairo	N.A.
14.	Petroleum Projects & Technical Con-		Cairo	N.A.
15.	Egyptian Oil Company			N.A.
	TOTAL			26,992

VII. MILITARY PRODUCTION

No.	Name of Company	Type of Products	Location	Personnel
1.	Helwan Co. for Military & Civilian Castings		Cairo/Helwan	2,990
2.	Abu Zaabal Co. for Specialized Chemicals		Abu Zaabal/ Qalyubia	3,024
3.	Shoubra Co. for Engineering Industries		Cairo	4,710
4.	Maasara Co. for Engineering Industries		Helwan/Cairo	4,150
5.	Maadi Co. for Engineering Industries		Maadi/Cairo	5,871
6.	Helwan Co. for Non-Ferrous Industries		Helwan/Cairo	3,973
7.	Heliopolis Co. for Chemical Industries		Heliopolis/ Cairo	3,756
8.	Helwan Co. for Engineering Industries		Helwan/Cairo	5,909
9.	Abu Kir Co. for Engineering Industries		Alexandria	1,189
10.	Benha Co. for Electronic Industries		Benha/Qalyubia	2,199
11.	Kaha Co. for Chemical Industries		Kaha/Qalyubia	1,367
12.	Helwan Co. for Household Appliances		Helwan/Cairo	2,248
13.	Helwan Co. for Diesel Motors		Helwan/Cairo	2,284
14.	Helwan Co. for Workshop Tools		Helwan/Cairo	1,972
15.	Abu Zaabal Co. for Engineering Industries		Abu Zaabal/ Qalyubia	409
	TOTAL			46,051

VIII. ELECTRICITY

No.	Name of Company	Type of Products	Location	Personnel
1.	General Company for Electrical Projects (ELECJECT)		Cairo	1,323
2.	The High Dam Company for Electrical & Industrial Projects (HIDELCO)		Cairo	778
3.	Misr Company for Mechanical & Electrical Projects (KAHROMIKA)		Cairo	860
4.	El Nasr Co. for the Manufacturing of Electrical Products & Transformers (ELMACO)			834

TABLE IV-2e
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

VIII. ELECTRICITY (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
5.	Cairo Co. for Electricity Distribution			7,449
6.	Alexandria Co. for Electricity Distribution			3,228
7.	Delta Co. for Electricity Distribution			7,548
8.	Canal Co. for Electricity Distribution			2,786
9.	North Upper Egypt Co. for Electricity Distribution			3,417
10.	South Upper Egypt Co. for Electricity Distribution			3,791
11.	Beheira Co. for Electricity Distribution			1,088
	TOTAL			33,102

IX. BANKS

No.	Name of Company	Type of Products	Location	Personnel
1.	Central Bank of Egypt			N.A.
2.	National Bank of Egypt			5,477
3.	Misr Bank			11,942
4.	Alexandria Bank			5,090
5.	Banque Du Caire (Bank of Cairo)			22
6.	Egyptian Real Property Bank			666
7.	Arab Real Property Bank			73
8.	Industrial Development Bank			372
	TOTAL			24,642

X. FOREIGN TRADE COMPANIES

No.	Name of Company	Type of Products	Location	Personnel
1.	Misr Foreign Trade Company		Cairo	642
2.	Misr Import & Export Co.		Cairo	1,183
3.	El Nasr Co. for Import & Export		Cairo	1,570
4.	Arab Foreign Trade Company		Cairo	370
5.	General Co. for Trade and Chemicals		Cairo	1,411
6.	Misr Car Trading Company		Cairo	1,004
7.	General Engineering Company		Cairo	3,073
8.	Tractors & Engineering Company		Cairo	3,133

X. FOREIGN TRADE COMPANIES (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
9.	El Nile Co. for the Export of Agricultural Crops		Cairo	1,400
10.	El Wadi Co. for the Export of Agricultural Crops		Cairo	1,693
11.	Timber Trading Company		Alexandria	2,108
12.	El Nasr Co. for Dehydration of Agricultural Products		Cairo	972
13.	Misr Tax Free Shops		Cairo	510
	TOTAL			19,069

XI. COTTON COMPANIES

No.	Name of Company	Type of Products	Location	Personnel
1.	Misr Cotton Export Company		Alexandria	841
2.	Eastern Company for Cotton		Alexandria	1,370
3.	Port Said Cotton Export Company		Alexandria	1,075
4.	Alexandria Commercial Company		Alexandria	949
5.	Cairo Company for Cotton		Alexandria	1,037
6.	Corporate Company for Trade & Export Cotton		Alexandria	1,074
7.	Misr Ginning Company		Giza	1,340
8.	Arab Cotton Ginning Company		Cairo	1,064
9.	Delta Cotton Ginning Company		Cairo	948
10.	El Wadi Cotton Ginning Company		Alexandria	1,077
11.	El Nile Cotton Ginning Company		Alexandria	1,787
12.	Egyptian Company for Cotton Pressing		Alexandria	1,995
	TOTAL			14,557

XII. COMMERCIAL INSURANCE

No.	Name of Company	Type of Products	Location	Personnel
1.	Misr Insurance Company		Cairo	2,863
2.	El Shark Insurance Company		Cairo	3,819
3.	National Insurance Company		Alexandria	2,035
4.	The Egyptian Company for Reinsurance		Cairo	402
	TOTAL			9,121

TABLE IV-2f
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

XIII. SUPPLY AND INTERNAL DISTRIBUTION

No.	Name of Company	Type of Products	Location	Personnel
1.	Northern Cairo Flour Milks Co.	Grinding, Baking & Supply	Cairo	2,465
2.	Southern Cairo Flour Milks Co.	" " " "	Cairo	3,120
3.	The General Co. for Cairo & Giza Bakeries	"	Giza	2,982
4.	Northern Alexandria Flour Mills Co.	"	Alexandria	1,397
5.	Southern Alexandria Flour Mills Co.	"	Alexandria	1,283
6.	Western and Central Delta Flour Mills Company	"	Tanat	2,324
7.	Eastern Delta Flourn Mills Company	"	Zagazig	2,568
8.	Central Egypt Flour Mills Company	"	Menieh	2,892
9.	Upper Egypt Flour Mills Co.	"	Sohag	4,279
10.	General Company for Silos	"	Cairo	3,257
11.	Alexandria Rice Mills	Marketing, Grinding, Baking & Supply	Alexandria	1,039
12.	Beheira Rice Mills	"	Damanhour	818
13.	Garbia Rice Mills	"	Al Mahalla	853
14.	Rashid Rice Mills	"	Alexandria	877
15.	Kafr El Aheikj Rice Mills	"	Kafr El Shiekh	990
16.	Dakahlia Rice Mills	"	Mansoura	874
17.	Damietta & Belkas Rice Mills	"	Belkas/ Damietta	810
18.	Sharkia Rice Mills	"	Zagazig	829
19.	Rice Marketing Company	"	Cairo	415
20.	General Company for Foodstuffs	"	Cairo	2,615
21.	The Egyptian Co. for Foodstuffs Wholesale Trade	"	Cairo	2,500
22.	Al Ahram Co-operative Societies for Consuming Commodities Company	"	Cairo	3,040
23.	El Nil Cooperative Societies	Food Stuffs	Cairo	3,509
24.	Alexandria Cooperative Societies for Consuming Commodities Co.		Alexandria	2,439
25.	El Kahira Co. for Ice & Refrigeration		Cairo	537

XIII. SUPPLY AND INTERNAL DISTRIBUTION (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
26.	Gerco. Co. for Refrigeration & Engineering		Cairo	1,198
27.	Alexandria Co. for Ice & Refrigeration		Alexandria	500
28.	Egyptian Co. for Packing & Distribution of Food Stuffs (Shemto)		Cairo	2,134
29.	Egyptian Fish Marketing Co.		Cairo	1,437
30.	The Egyptian Meat, Poultry & Foods Supply Co.	Supply food-stuffs to hospitals, organizations, schools, universities & military academies		1,370
31.	The Egyptian Industrial Products Sale Co.		Cairo	4,778
32.	Omar Effendi Company		Cairo	3,810
33.	Company of Modern Novelties "Benzion-Ades-Rivoli"		Cairo	3,240
34.	High Fasions Company "Hannaux-Circurel-Pontrimoli"		Cairo	2,363
35.	Salon Vert	The modern fashions of novelties-Ready made clothes for ladies, men & children. Yarns, furnishings, carpets, electrical appliances & perfumes	Cairo-Alexandria-Tanta-Port Said	1,224
36.	Clothes & Consumer Products Co.	Wholesale & retail trade in ready made clothes & textiles	Cairo	2,621
37.	United Co. for Textiles Wholesale Trade		Cairo	624
38.	Arab Co. for Textiles Wholesale Trade		Alexandria	612
39.	Egyptian Shoe Company "Bata"	Manufacturing & trade in all kinds of shoes	Alexandria	5,140
40.	Egyptian Chemicals Trading Co.		Cairo	555
41.	Egyptian Electrical Equipment Co. "Shaher"		Cairo	877
42.	Egyptian Metals Trade Co. "Sigal"		Cairo	1,544
43.	The General Economic Co. for the Armed Forces		Cairo	1,329
	TOTAL			84,068

TABLE IV-2g
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

XIV. MARITIME TRANSPORT

No.	Name of Company	Type of Products	Location	Personnel
1.	The Egyptian Co. for Navigation	It has the biggest commercial national fleet that connects A.R.E. ports to all Arab & other ports.	Alexandria	828
2.	The Egyptian Co. for Maritime Transport	Sea shipping. Applies preference and priority for the ships of the commercial Egyptian fleet. Getting contractual rates and reductions in freights from shipping conferences.	Cairo	552
3.	Alexandria Shipping Agencies Co.	Presents all naval services for Arab & foreign ships. Its objective is to make all functions of shipping agencies, ship brokeries, tourism customs clearing & handling of goods.	Alexandria	918
4.	Canal Shipping Agencies Company	It is the shipping agent for foreign ships. Achieves a complete cooperation with sister companies of sea transport in the service of foreign trade. Tourism & customs clearing works.	Cairo	1,697
5.	Egypt Co. for Ship Building & Repairing	Self-sufficient repair of national commercial and military fleets, units, besides foreign ships that regularly come to Alexandria. Handles some ship building contracts for Arab countries. Makes mechanical, electrical and metal constructing works.	Alexandria	2,656
6.	Arab Stevedoring Co.		Alexandria	6,660
7.	Canal Stevedoring Co.	Canal stevedores al goods on ships & piers & all work pertaining to stevedoring in Port Said & Suez.		3,236
8.	The Egypt. Co. for Maritime Contracting & Supply	Supplies all food s uffs deck and machines equipments to all Arab & foreign ships. All sea works of painting and maintenance to all ships	Alexandria	579
9.	General Egyptian Depots Company			1,953
10.	Port Said Engineering Company			794

XIV. MARITIME TRANSPORT (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
11.	Eltimsah Co. for Ship Building			1,554
12.	Canal Company for Maritime Constructions			774
13.	Canal Company for Ropes			557
14.	Suez Arsenal Company			786
15.	Supply & Public Works Gen. Company			1,475
16.	Canal Company for Ships' Lights			1,554
	TOTAL			26,573

XV. INTERNAL TRANSPORT

No.	Name of Comapny	Type of Products	Location	Personnel
1.	General Nile Co. for East Delat Bus		Cairo	8,296
2.	General Nile Co. for Upper Egypt Bus		Cairo	7,033
3.	General Nile Co. for Central Delta		Cairo	4,283
4.	General Nile Co. for West Delta Bus		Alexandria	2,346
5.	General Nile Co. for Goods Transport		Cairo	1,824
6.	General Nile Co. for Land Transport		Alexandria	1,743
7.	General Nile Co. for Direct Transport		Cairo	1,525
8.	General Nile Co. for Heavy Transport		Cairo	1,015
9.	General Nile Co. for Transport Works		Cairo	1,962
10.	General Nile Co. for Motor Cars Repair		Cairo	1,927
11.	General Nile Co. for Fluviatile Transport		Cairo	2,977
12.	General Nile Co. for Aqueous Transport		Cairo	2,614
13.	General Nile Co. for Roads & Bridges		Cairo	3,734
14.	General Nile Co. for Roads Construction		Cairo	922
15.	General Nile Co. for Construction & and Macadamisation		Cairo	1,474
16.	General Nile Co. for Desert Roads		Cairo	866
17.	Greater Cairo Bus Company		Cairo	3,600
	TOTAL			48,141

TABLE IV-2h
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

XVI. HOUSING AND INFRASTRUCTURE

No.	Name of Company	Type of Products	Location	Personnel
1.	Heliopolis Co. for Housing and Reconstruction		Cairo	6,429
2.	Nasr City Co. for Housing and Reconstruction		Cairo	691
3.	Mansoura Co. for Housing and Reconstruction		Alexandria	225
4.	Reconstruction & Public Dwellings Company		Cairo	870
5.	El Nasr Company for Housing and Reconstruction		Cairo	107
6.	United Company for Housing and Reconstruction		Alexandria	179
7.	El Shams Company for Housing and Reconstruction		Cairo	214
8.	The Company of Lifts, Air-Conditioning and Building Materials		Cairo	963
9.	Al Maadi Company for Housing and Reconstruction		Cairo	331
10.	El Kahira Company for Housing and Reconstruction		Cairo	161
	TOTAL			10,170

XVII. CONSTRUCTION AND BUILDING MATERIAL

No.	Name of Company	Type of Products	Location	Personnel
1.	The General Nile Co. for Reinforced Concrete		Cairo	913
2.	The Arab Office for Designing and Engineering Consultations		Cairo	440
3.	Atlas General Contracting Company		Cairo	1,178
4.	General Construction Co. (Rolan)		Cairo	1,745
5.	Industrial and Engineering Projects Company		Cairo	1,015
6.	The Egyptian Joint-Stock Contracting Company		Cairo	1,126
7.	Nile General Company for Bridges		Cairo	699
8.	Nile General Contracts Company		Cairo	555

XVII. CONSTRUCTION AND BUILDING MATERIAL (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
9.	El Nasr Civil Works Company		Cairo	579
10.	El Nasr Co. for Building & Construction		Cairo	1,244
11.	El Nasr Co. for Public Utilities & Fittings		Cairo	479
12.	Giza General Contracting Company		Cairo	174
13.	General Sanitary Contracting Company		Cairo	315
14.	Canal General Contracting Company		Cairo	315
15.	Delta General Contracting Company		Cairo	587
16.	Mahmoudia General Contracting Co.		Cairo	458
17.	El Wadi El Guidid General Contracting Company		Cairo	405
18.	Upper Egypt General Contracting Co.		Cairo	398
19.	Red Sea General Contracting Company		Cairo	424
20.	Arab General Cortracting Company		Cairo	975
21.	Egyptian General Company for Buildings		Cairo	N.A.
22.	Kahira General Contracting Company		Cairo	840
23.	Alexandria General Contracting Co.		Cairo	388
24.	Arab Foundations Company		Cairo	623
25.	General Foundations Company			565
26.	Pre-Fabricated Houses Company		Giza	446
27.	General Company for Mineral Wealth		Cairo	1,492
28.	Helwan Port Land Cement Company		Cairo	2,073
29.	National Cement Production		Cairo	1,461
30.	The Egyptian Turah Port Land Cement Company		Cairo	2,328
31.	Alexandria Port Land Cement Company		Alexandria	1,162
32.	Egyptian Pipes & Cement Production Company		Cairo	3,764
33.	The Egyptian Gypsum, Marble & Quarries Company		Giza	1,685
34.	Canaltex Company for Vinyl Floorings		Kalioub	399

912

913

TABLE IV-2i

PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

XVII. CONSTRUCTION AND BUILDING MATERIAL (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
35.	Sand Bricks Company		Cairo	2,120
36.	El Nasr Industrial Timber Company in Faraskour		Damietta	583
37.	El Nasr Co. for the Manufacture of Granulated Wood & Resings	Manufacture of granulated wood plates covered with paper	Mansoura	768
38.	Arab Contractors Company		Cairo	34,200
39.	Misr Reinforced Concrete Company		Cairo	2,894
40.	El Nasr General Company for Contracts		Cairo	1,258
41.	Egyptian Contracts Company		Cairo	1,343
42.	Gumhuria General Contracting Co.		Cairo	404
43.	Egyptian Co. for Prefabricated Houses		Belbeis	389
44.	Prefabricated Houses Company		Giza	N.A.
45.	Cement Sales Office			1,059
	TOTAL			76,268

XVIII. AGRICULTURE

No.	Name of Company	Type of Products	Location	Personnel
1.	General Poultry Company		Giza	6,094
2.	General Egyptian Co. for Meat & Milk		Cairo	1,683
3.	Egyptian Co. for Overseas Fisheries		Alexandria	205
4.	Egyptian Co. for Fishing Equipment		Alexandria	305
5.	Northern Fisheries Co.		Alexandria	340
6.	El Nubaria Seeds -- Production Co.		Alexandria	958
7.	Western Agrarian Co.		Moderayit El Tahrir	830
	TOTAL			10,415

XIX. IRRIGATION

No.	Name of Company	Type of Products	Location	Personnel
1.	High Dam Civil Works Co.		Cairo	992
2.	Egyptian Dredgers Co.		Cairo	2,736

XIX. IRRIGATION (Cont.)

No.	Name of Company	Type of Products	Location	Personnel
3.	General Irrigation Co.		Kaluiba	1,724
4.	General Egyptian Co. for Field Drainage Projects		Assiut	198
5.	General Egyptian Co. for Irrigation Workshops		Embaba-Giza	1,533
6.	Upper Egypt Dredgers Co.		Naga Hamadi-Qena	279
	TOTAL			7,462

XX. LAND RECLAMATION

No.	Name of Company	Type of Products	Location	Personnel
1.	General Egyptian Co. for Land Reclamation		Cairo	1,692
2.	Beheira Joint-stock Co.		Alexandria	2,987
3.	The General Co. for Research for Underground Water	Drilling of water wells, construction of pumps, photographic maps & commercial agents.	Cairo	695
4.	Arab Co. for the Reclamation of Barren Land		Giza (Dokki)	1,092
5.	Egyptian Property Co.		Cairo	1,161
6.	Wadi Komombo Co.			1,241
7.	General Egyptian Agricultural Co.		Cairo	474
8.	Northern Tahrir Agricultural Co.		Moderiyat El Tahrir	1,812
9.	Southern Tahrir Agricultural Co.		Moderiyat El Tahrir	2,741
10.	Mariout Agricultural Co.		Amerieh-Alexandria	1,689
11.	El Nahda Agrarian Co.		Alexandria	840
12.	Upper Egypt Agrarian Co.		Minieh	1,282
13.	Egyptian Co. for Vineyard and Distillery			2,215
	TOTAL			19,921

TABLE IV-2j
PUBLIC COMPANIES IN EGYPT
ACCORDING TO SECTORS, LOCATIONS AND NUMBER OF PERSONNEL

XXI. AGRICULTURAL CREDIT & COOPERATIVES

No.	Name of Company	Types of Products	Location	Personnel
1.	The Main Bank for Development and Agricultural Credit		Cairo	N.A.
2.	Bank of Kafr El Sheikh Governorate		Kafr El Sheikh	2,122
3.	Bank of Sharkia Governorate		Zagazig	3,088
4.	Bank of Beheira Governorate		Damanhour	2,936
5.	Bank of Gharbia Governorate		Tanta	2,523
6.	Bank of Menoufia Governorate		Shebin El Kom	1,869
7.	Bank of Ismailia Governorate		Ismailia	286
8.	Bank of Dakahlia Governorate		Mansoura	2,860
9.	Bank of Damietta Governorate		Damietta	474
10.	Bank of Kalioubia Governorate		Benha	1,424
11.	Bank of Fayoum Governorate		Fayoum	1,466
12.	Bank of Giza Governorate		Giza	1,184
13.	Bank fo Assiut Governorate		Assiut	1,723
14.	bank of Beni Suef Governorate		Beni Suef	1,156
15.	Bank of Minieh Governorate		Minieh	2,463
16.	Bank of Qena Governorate		Qena	1,560
17.	Bank of Sohag Governorate		Sohag	2,213
18.	Bank of Aswan Governorate		Aswan	634
	TOTAL			29,981

XXII. TOURISM & CIVIL AVIATION

No.	Name of Company	Type of Products	Location	Personnel
1.	Great Hotels of Egypt Co.		Cairo	294
2.	The General Egyptian Co. for Tourism and Hotels "EGOTH"	The International Pioneer in Hotel Construction in Egypt and Middle East	Cairo	420
3.	Misr Hotels Co.		Cairo	114
4.	Egyptian Hotels Co.		Cairo	6,205
5.	Misr Travel Co.		Cairo	1,572
6.	Egypt Air		Cairo	9,779
	TOTAL			18,384

XXIII. DRUGS

No.	Name of Company	Type of Products	Location	Personnel
1.	El Kahira Co. for Drugs & Chemical Industries		Cairo	1,718
2.	El Gumhoria Co. for Pharmaceuticals & Medical Equipment		Ameriah-Cairo	1,287
3.	Pharmaceutical Packings & Optics Co.		Cairo	2,378
4.	Memphis Chemicals Company		Cairo	1,898
5.	Arab Drug Company		Cairo	1,252
6.	Misr Drug Company		Cairo	1,950
7.	The Egyptian Drug Trading Company		Cairo	2,956
8.	Chemical Industries Development Co. (CID)		Giza	2,904
9.	El Nile Co. for Drugs & Chemicals		Cairo	3,304
10.	El Nasr Co. for Medical Chemicals		Cairo	2,101
11.	Alexandria Co. for Drugs & Chemicals Industries		Alexandria	639
	TOTAL			22,388

XXIV. PAPER, PRINTING & PUBLISHING

No.	Name of Company	Type of Products	Location	Personnel
1.	The Egyptian Co. for Paper and Stationary		Cairo	1,958
2.	The Egyptian Co. for Editing and Publishing		Cairo	1,169
	TOTAL			3,127

XXV. CULTURE & MASS COMMUNICATION

No.	Name of Company	Type of Products	Location	Personnel
1.	Cairo Phone for Television Production		Cairo	736
2.	El Kawmiah Distribution Company		Cairo	200
3.	The Middle East News Agency		Cairo	716
	TOTAL			1,652

XXVI. COMMUNICATIONS

No.	Name of Company	Type of Products	Location	Personnel
1.	The Egyptian Co. for Manufacturing TV Equipment		Helwan (Cairo)	953
	TOTAL			953

V. THE SUEZ CANAL AUTHORITY

The Suez Canal Authority has been considered one of the best examples of Public Authority management in operation. Its major function as indicated in Law 30 of 1975 (establishing the Authority) is to direct, operate, maintain and improve the Suez Canal.

This entails an organization of approximately 12,000 total employees of whom there are 4,500 shipyard workers at Port Said and 1,500 at Port Tewfik, opposite Suez.

The Authority has full power essential to its duties. This includes the taxing of land or by any method — even expropriation. It has authority to rent its own land and to rent other's land for purposes such as the comfort of its employees or for establishing projects necessary for the Canal. It has power to hire all employees, fix their salaries and assign their jobs. It has the power to establish projects and to encourage or participate in joint projects related to the Canal. It operates the Port Said Harbour and collects fees for navigation and passage through the Canal.

The Authority consists of a Chairman and a ten-man Board of Directors. (See Figure V-1). The Chairman is the Head of the Authority, his Board of Directors is composed of subordinate staff, making it more like a Board of Managers. The Council of Directors, composed of the Directors-General and the heads of the offices in the Chairman of the Board's office are concerned with day-to-day operations.

Headquartered in Ismailia, it has field offices in Port Said, Suez and a small office in Cairo. Its major activities take place in Ismailia. The Authority provides its senior staff with free housing and 60 percent of its staff now have housing provided at 7 percent of their salary.

The Authority operates independently of the ministries of Government and the Governorates. The prestige of its Chairman, who is at the rank of Deputy Prime Minister, and the revenue it brings to Government gives it a special status in Egypt. The equipment it controls permits it to be helpful to the Governorate from time to time. As with all Government Agencies, it must make employment available to many Egyptians. It suffers from over-employment — mostly untrained staff whom it is trying to train for specialized types of work.

Although it is a public authority under Law No. 30/1975, it is to follow the "management methods of commercial projects". Its assets are considered private. It has an independent budget following regulations for commerical projects. Nevertheless, its final audit is by the Central Agency for Accounts. It has full authority to act and is not bound by any statute other than Law No. 30/1975. There is no question that its success as an example of project management is related to the funds it brings in and the independent status it has.

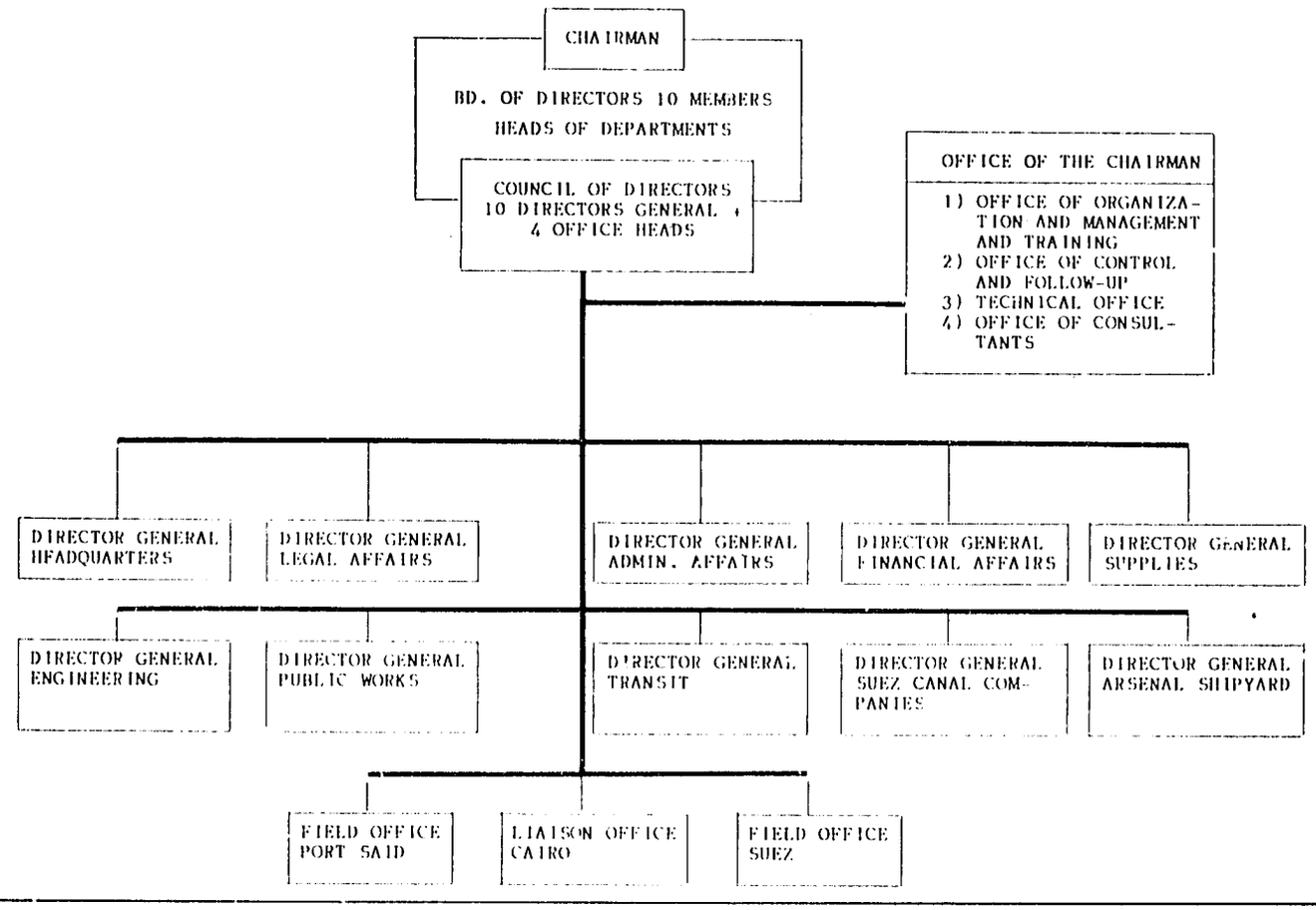
VI. DECENTRALIZATION AND LOCAL GOVERNMENT

A. Historical Background

Before July 1952, Egypt was divided into 14 provinces. Each province was headed by a high central government official, responsible to the Minister of Interior, but who executed the orders of all other ministers. The desert regions were excluded from the civil administration and placed under the control of the Ministry of War.

After the 1952 revolution, Egypt began a phase of deconcentration. The Government began by establishing field units of the central ministries and empowered these units with the necessary material equipment, technical skill and full responsibility within the jurisdiction of the unit.

FIGURE V-1
SUEZ CANAL AUTHORITY



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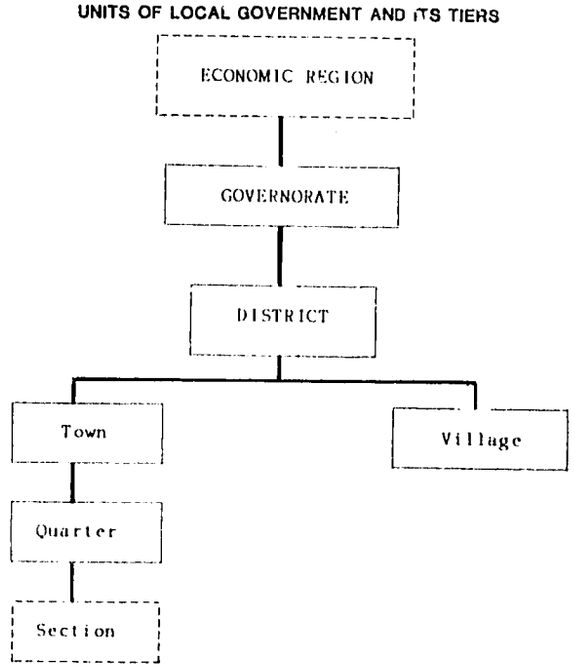
Law 124/1960 created the governorates and delegated to the local authorities all functions which by their nature were predominantly local.

Law No. 57/1971 was an attempt to increase the effectiveness and efficiency of local government. This Law was partially applied with Law 124/1960 until 1975 when a new law of local government, Law No. 52/1975 was passed. This Law stipulated for the first time that local councils are to be directly elected. Furthermore, this law endowed the local councils with more functions, so that they could play an important role in national and local development.

Law No. 43/1979 was passed with a view to devolve many governmental powers to local councils. Law No. 50/1981 both clarified that law with regard to the powers of Governors and Local Popular Councils and changed election to a a party list basis.

FIGURE VI-1
UNITS OF LOCAL GOVERNMENT AND ITS TIERS



---Administrative unit without legal entity.

B. The Units of Local Government

Figure VI-1 presents the organizational structure of the units of local government which are considered by the local government laws of 1960, 1971, 1975, 1979 and 1981. Table VI-1 and Figure VI-2 present information on the number and distribution of local government units in the twenty-six governorates of Egypt.

Governorates are created, altered, or abolished by Presidential decree. However, in 1960 only towns and villages were mentioned in the Law. Towns to be created by a decree of the Minister of Local Administration and villages by a decree of the governor. In 1971, towns were created by a decree of the Prime Minister with the consent of the People's Council of the Governorate, while villages were created by a decree of the Governor with the consent of the governorate Council.

In 1975 and 1979 the units of government were expanded to include the District (Markaz), the towns, urban quarters and villages which are to be created by a decree of the governor after approval of the local People's Council. However, Law No. 50/1981 returned to the previous structure with Markaz, towns and urban quarters to be declared by a decree of the Prime Minister following approval of the Governorate Local Popular Council. Villages continue to be created by a decree of the Governor. From 1960 to 1981 the People's Councils began to participate with respect to the delimitation of the units of local government and the Board of Governors (later the Higher Council for Local Government) replaced the central government ministries with the obvious exception of the boundaries of the governorate itself.

C. Central and Regional Structures of Local Government

The five laws from 1960-1981 were intended to establish an organization to implement the intent of the laws. Initially a ministerial committee was set up but was replaced in 1979 by the Board of Governors headed by the Prime Minister. In 1981, the Board of Governors was replaced by a Higher Council for Local Government whose membership included that of the previous Board of Governors (the Prime Minister, the Minister in charge of local government and all the governors) plus the Chairmen of all the Governorate Local Popular Councils. However, the Council had fewer potential powers than the board had for review of draft plans, budgets, proposed taxes and other functions.

Changes made over the years all move in the direction of attempting to coordinate activities between local and national units. However, the Higher Council for Local Government is given the critical function of evaluating the performance of the governorates.

TABLE VI-1
NUMBER AND DISTRIBUTION OF LOCAL GOVERNMENT UNITS
JANUARY 1980

Governorate Name	Governorate	Districts	Towns	Quarters	Villages	Total
Cairo	1	--	--	7		8
Alexandria	1	--	--	4		5
Port Said	1	--	--	4		5
Ismailia	1	4	5	2 (Ismailia)	10	22
Suez	1	--	--	3		4
Qalyubia	1	7	9	--	37	54
Sharkia	1	12	13	--	71	97
Dakahlia	1	10	12	2 (Mansoura)	72	97
Damietta	1	4	6	--	24	35
Menoufia	1	8	9	--	64	82
Gharbia	1	8	8	--	53	70
Kafr El Shiekh	1	9	9	--	43	62
Beheira	1	12	14	--	67	94
Giza	1	5	8	3 (Giza)	39	56
El Fayoum	1	5	5		37	48
Beni Suef	1	7	7	--	38	53
Minia	1	9	9	--	57	76
Assiut	1	10	10	--	49	70
Sohag	1	11	11	--	51	74
Qena	1	11	11	--	48	71
Aswan	1	4	6	--	22	33
Matruh	1	3	6	--	10	20
New Valley	1	2	2	--	10	15
Red Sea	1	--	4	--	--	5
North Sinai	1	4	4	--	6	15
South Sinai	1	5	5	--	--	11
	26	150	173	25	808	1,182

SOURCE: Secretariat General of Local Government.

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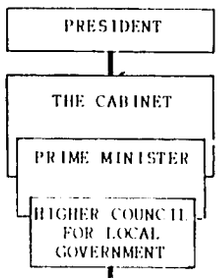
FIGURE VI-2
ORGANIZATIONAL STRUCTURE OF LOCAL GOVERNMENT IN EGYPT
SEPTEMBER 1981



ALEXANDRIA REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
ALEXANDRIA	4		--	--	--
BEHEIRA	--	12	14	67	416
TOTAL	4	12	14	67	416

N. UPPER EGYPT REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
MINIA	--	9	9	57	337
EL FAYOUM	--	5	5	37	159
BENI SUEF	--	7	7	38	218
TOTAL	--	21	21	132	714

ASSIUT REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
ASSIUT	--	10	10	49	240
NEW VALLEY	--	2	2	10	60
TOTAL	--	12	12	59	300

CAIRO REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
CAIRO	7	--	--	--	--
GIZA	3	5	8	39	166
QALYUBIA	--	7	9	37	193
TOTAL	10	12	17	76	359

S. UPPER EGYPT REGION

GOVERNORATE	URBAN QUARTER	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
ASWAN	--	4	6	22	85
QENA	--	11	11	48	165
SOHAG	--	11	11	51	264
RED SEA	--	--	4	--	--
TOTAL	--	26	32	121	514

MATRUH REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
M. MATRUH	--	3	6	10	27
TOTAL	--	3	6	10	27

DELTA REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
GHARBIA	--	8	8	53	313
MENOUFIA		8	9	64	302
KAFR EL SHEIKH		9	9	43	193
DAKAHLIA	7	10	12	72	452
DAMIETTA	--	4	6	24	55
TOTAL	7	39	44	256	1,315

CANAL REGION

GOVERNORATE	URBAN QUARTERS	RURAL DISTRICTS	TOWNS	VILLAGE COUNCILS	VILLAGES
ISMAILIA	2	4	5	10	20
SHARKIA	-	12	13	71	451
SUEZ	3	--	--	--	--
PORT SAID	4	--	--	--	--
N. SINAI	--	4	4	6	12
S. SINAI	--	5	5	--	--
TOTAL	9	23	27	87	483

o NO. OF REGIONS 9 o NO. OF GOVERNORATES 26 o NO. OF QUARTERS 25 o NO. OF DISTRICTS 150 o NO. OF TOWNS 173 o NO. OF VILLAGE COUNCILS 808 o NO. OF VILLAGES 4,128

N.B.: REGIONS AND VILLAGES ARE NOT ENDOWED WITH JURISTIC ENTITY.

* RED SEA GOVERNORATE IS DIVIDED BETWEEN THREE REGIONS: CANAL, NORTH AND SOUTH UPPER EGYPT.

Between 1960 and 1979 the Ministry of Local Administration gave way to the creation of a Secretariat General of Local Government to work under the direct supervision of the Minister in charge of Local Government and to be considered the instrument of the Higher Council for Local Government. It handles joint affairs of the local units and serves as staff to the Council. (Figure VI-3)

Also in 1971, the Organization for the Reconstruction and Development of the Egyptian Villages (ORDEV) was established to work on rural development directly under the Minister in charge of Local Government, headed by a president appointed by the President. (Figure VI-4)

In addition, the Organization of Handicraft and Productive Cooperatives was created. The Institute of Local Government later was amalgamated with the Institute of Public Administration and the National Institute of Executive Development into the National Institute of Management Development. This body became the Sadat Academy of Administrative Sciences in March 1981.

In 1979, a concern for regional issues became reflected in law. For each of the eight economic regions a regional planning commission was formed, chaired by the Governor of the governorate considered the Capital of the region. The commission consists of the Governors of the Governorates forming the region, the Chairmen of the governorate local People's Councils of the region, the Director of the Regional Planning Agency (who also serves as Secretary General of the commission) and representatives of the Ministries in charge selected by their ministers. The Regional Planning Commissions under the law were to be responsible for:

i) Coordination of governorate plans and determining priorities as proposed by the Regional Planning Agency.

ii) Review of periodic reports.

iii) Follow-up of the execution of the plan and study and modification of the plan suggested by the Regional Planning Agency.

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FIGURE VI-3
ORGANIZATIONAL STRUCTURE OF THE SECRETARIAT GENERAL OF LOCAL GOVERNMENT
SEPTEMBER 1981

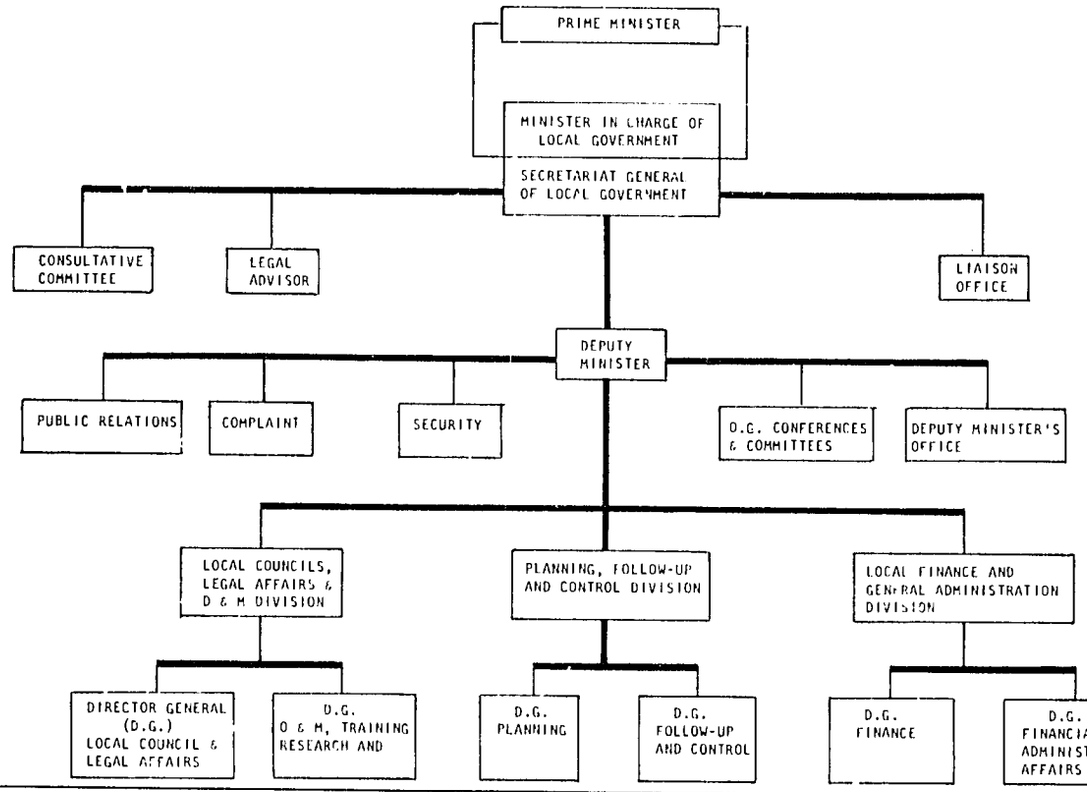
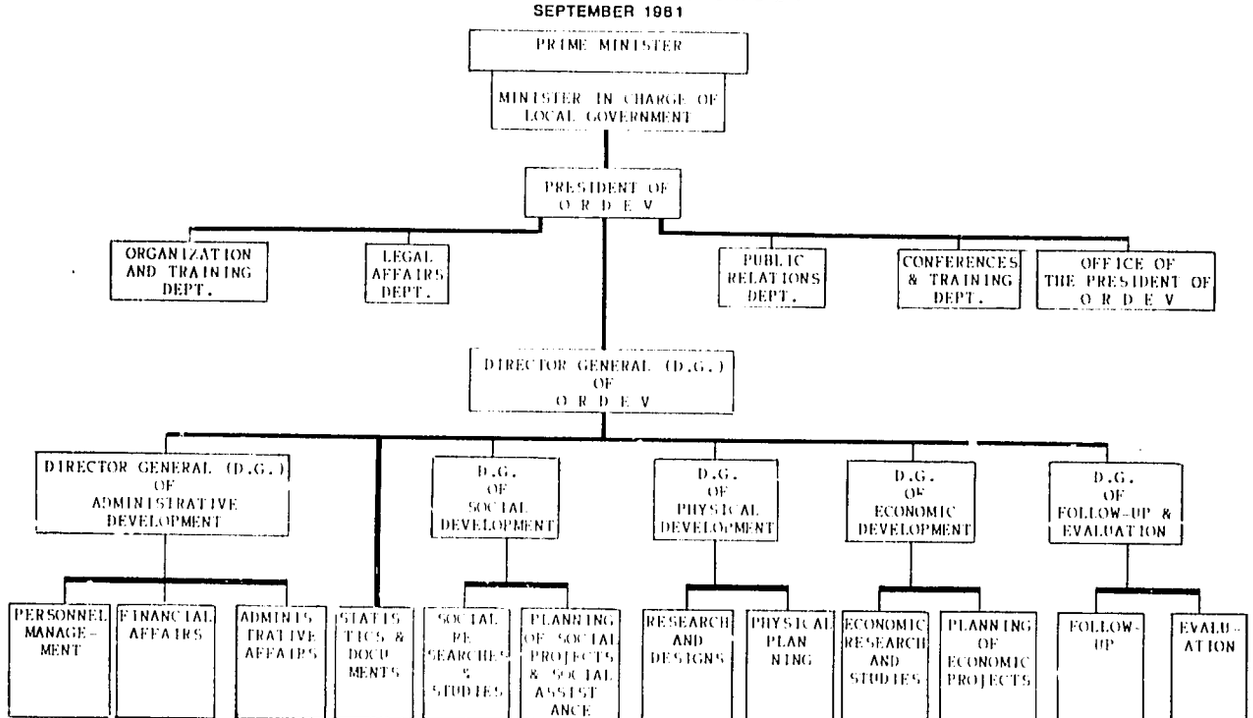


FIGURE VI-4
ORGANIZATIONAL STRUCTURE OF O R D E V
SEPTEMBER 1981



iv) Research concerning the development of the region's capabilities and resources, for the purpose of proposing appropriate projects.

v) Recruiting and training of competent personnel.

Although not yet functioning up to the standard intended by the law, the Regional Planning Agencies may direct the way in which decentralization or centralization will go. For it is obvious that regional planning requires considerable power at the regional level, and this is not yet available at the level of local government in Egypt. Law No. 50/1981 deemphasized the formal role of these economic regions through elimination of the need for draft annual governorate budgets and draft annual financial statements to become part of the draft regional level budgets before being submitted to the proper central ministries, and also by elimination of the provision of the 1979 law allowing employees of governorate directorates working within an economic region or in two or more governorates to be considered as one unit with respect to promotions and transfers. However, the basic provisions regarding economic regions remained unchanged, indicating only more realism with regard to the pace at which regionalism can be adopted. Effective regional planning will require coordination so that most regional boundaries for ministries are the same, which is not true at present.

D. The Office of the Governor

From 1960 to 1981 the governor has continued to be a Presidential Appointee but with the 1979 law all governors acquired the rank and power of Ministers. The governor represents the President of the Republic and the executive power of the state. As such he supervises the implementation of the general policy of the state. He presides over the Executive Council which is the latest form of executive body at the governorate level.

The governor is consulted by the Minister on questions of promotion and transfer of personnel working in the governorate, inspects

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the reports of town and village councils within his jurisdiction, must approve certain decisions adopted by town and village councils (although he may delegate some of his powers to his assistant Secretary General, heads of departments and heads of towns and villages) and is in charge of security and food security on which he reports directly to the Prime Minister.

The governor also has the right to lay down the rules for selling or renting government lands for building or reclamation and its distribution after being reclaimed, within the rules laid down by the Board of Governors and after the consent of the local council. He also has the power of the Minister specified in the law which creates the public authorities working within the governorate jurisdiciton. He is responsible for raising the productivity of agriculture and industry within the governorate. Finally, he must be informed of the decisions of the people's local councils. He has the right to set aside any decision of the local people's councils if it is against the general policy of the state.

The 1981 law gave the Governor the authority to call meetings of the People's Assembly and Shura Council in the Governorate with members of the Governorate Executive Council to discuss means of achieving social and economic development in the Governorate. It also provided for regular meetings between Minister and Governor to discuss the means of strengthening links between them and for the exchange of views on overcoming obstacles faced at the local governorate level, and for required annual reports from the Governor to the Prime Minister.

E. The Structure and Functions of Local Councils

The structure of the local councils has changed over the years 1960-1979 in the direction of a more democratically chosen local council. However, the 1981 law made it impossible for the election of independents. All candidates must be on a party list and no list will be declared elected unless it has an absolute majority of the vote cast, thus making runoffs possible between the top two lists.

Initially in 1960 the local councils were formed from three elements: selected by the elected members of the Arab Socialist Union, the only political organization existing at the time; selected members chosen for their experience by the Minister on recommendation by the Governor; and ex-official members — chief executives of various departments.

The governorate council had a majority of elected members and was chaired by the governor. All the councils' chairmen were appointed by the Central Government.

The 1971 Law divided the local council at the governorate level into two, a People's Council and an Executive Council. The People's Council was chaired by the Secretary General of the ASU and consisted of members of the ASU committee plus two representatives of women and youth. The Executive Council consisting of the executives of the various departments was chaired by the Governor. The other local councils remained the same as under Law No. 124/1960.

In the 1975 Law, all local councils were divided into a local council and an executive committee and the local councils for the first time at all the levels were elected directly by the people. The 1979 Law maintained this and simply changed the names of the executive committee to executive council and the local council to the People's Council. The 1981 law provided for direct election, but only from party lists.

With respect to the functions of the local councils, the 1960 Law delegated to the local authorities the functions which by their nature are predominately local — local utilities, education, public health, etc.

The 1971 Law is much more specific. It gives the local councils the power to follow-up the implementation of national plans within the domain of the governorate. It gives them the authority to decide on: strengthening the defense of the homeland and civil defense; supporting the creation of various utilities within the general plan of the state; supporting the following — education, health care, social affairs, supply, manpower, housing utilities, cultural services, public transport, roads, and agriculture and irrigation. The executive has power to implement these various programs and must prepare the annual plan and the budget.

The 1975 Law returns to a more general statement of local functions to be defined by a decree of the President, which was then changed in the 1979 Law to a decree of the Prime Minister. The 1981 law gives the Local Governorate Councils most of the authority that the 1979 law had granted to the Board of Governors, including approval of grants of use of property of local units, approval of setting boundaries of industrial zones and approval of taking loans for establishing productive or investment projects necessary for the Governorate or its local units. The new law also allowed these councils to request, through the Governor, any data related to any government agencies or economic units operating in the Governorate.

For the first time, the 1975 Law gave the elected local councils the right to interrogate the governor and the other executives on their work and hold them accountable. This was seriously weakened in the 1979 Law and the rights were confined only to the right to draw attention to specific issues. The 1981 law again gave local councils the right of interrogation, but on a more restricted basis than the 1975 law; now requiring an absolute majority of the members to ask for such an interrogation of an executive head and a two-thirds majority in the case of a Governor. The report of the council on wrongdoing would then be submitted to the President, who in the case of a Governor would either replace the Governor or dissolve the local council.

F. Financial Resources

The 1960 Law took a major step forward in the revenue area by giving the local councils a share of the special add-on tax placed on all import and export taxes, movable properties (stocks, bonds, shares, etc.) and from all industrial and commercial profit tax. It also gave the governorate local revenues, a quarter of

the land tax, taxes and duties on motor cars, carts, motor bikes, bicycles and other means of transport licensed by the governorate, other taxes and duties imposed by the governorate, receipts from allocation of funds invested by the governorate, all revenues from utilities controlled by the governorate and government grants-in-aid. The districts were given only sources in their districts assigned by the governorate council — receipts from investment, grants-in-aid, etc. Towns were given a large series of taxing powers: taxes on buildings located within the jurisdiction of the town, taxes on entertainment; theaters, cinemas, gambling; 75 percent of the land tax and add-on land tax; sources assigned by the governorate; duties on birth and death records, licenses for quarries, mines, cattle slaughtering and hunting, regulation of building works, sewerage, road occupancy and public parks, public establishments, clubs and industrial and trading firms; water, gas and electricity consumption (not more than 10 percent of consumption when these are not operated by the governorates; rents paid by occupants of buildings (not more than 4 percent); rent of state property; investments of the firms; and government grants-in-aid.

Under the 1960 Law, villages receive 75 percent of the land tax and the add-on tax for all lands within the jurisdiction of the village council area, as well as any taxes or duties of local character imposed by the village council. There are two funds, a local cleanliness fund established in 1968 and a gasoline fund which is national in character, established in 1977 for use in the governorate.

All the preceding taxes remain on the books to the present with additional powers added in 1975 and 1979.

In 1975, a special account for "local services and development" was established in the governorate which does not close out at the end of the fiscal year. It receives special local duties, profits from development projects, donations and contributions and 50 percent of the increase in the gross yield of local revenues over the estimates in the budget.

In 1979 two other special accounts were established: a special account from the sale of reclaimed or cultivated lands for the purpose of land reclamation; and a special account to finance housing projects, revenue to come from sale of vacant land, housing bonds, revenue generated from exceptions to construction regulations, central government allocations and loans, grants, gifts, investment income, revenues from certain firms, receipts from the tax on vacant lands and rent and installment payments of governorate owned houses. Funds not spent are retained and transferred to next year's budget. The rules for the administration and disbursement of these accounts were moved by the 1981 law from the Board of Governors to a decree of the Prime Minister.

The financial resources accorded local authorities by laws are inadequate to the developmental needs of local units, but there is room to exploit the opportunities provided by the law to raise money.

Laws 52/75 and 43/79 were passed to increase local revenues, but the proportion of revenues raised locally has only risen to about 28 percent of all 1979 expenditures. Significant additional sources of revenues will be required for decentralization to become a fact. (Tables VI-2 and 3)

The analysis of the locally raised revenues in 1979 shows that:

i) The Joint revenues, and add-on central taxes contribute 47 percent of the total local sources of revenues — other than the government grants-in-aid. The next source is the duties imposed on motor vehicles 18 percent, followed by land taxes 11 percent and building taxes 4 percent. (State budget, 1979).

ii) 80 percent of joint revenues are levied in Cairo and Alexandria governorates and 90 percent of the yield of these revenues are raised by the four urban governorates. This is due to the concentration of foreign trade and industrial and commercial activities in these governorates, which

TABLE VI-2

COMPARISON INCREASE IN THE CENTRAL GRANTS AND LOCALLY RAISED FUNDS

GOVERNORATE	CENTRAL GRANTS			LOCALLY RAISED FUNDS		
	1975 (000)	1979 (000)	% Increase	1975 (000)	1979 (000)	% Increase
Urban Governorates						
Cairo	36,343	55,324	52.2	18,536	37,770	103.8
Alexandria	10,603	23,280	119.6	11,139	22,479	101.8
Port Said	4,091	8,390	103.3	588	6,903	1,074.6
Ismailia	2,827	5,370	89.9	489	5,910	1,108.6
Suez	2,354	3,420	45.3	639	4,339	579.0
Rural Governorates						
Qalyubia	11,517	24,465	112.4	1,931	6,795	251.9
Sharkia	17,810	34,696	94.8	1,407	7,754	451.1
Dakahlia	15,698	40,266	156.5	4,462	11,399	155.5
Damietta	7,575	10,907	44.0	640	5,935	827.3
Menoufia	13,981	30,792	120.2	972	6,393	557.7
Gharbia	16,743	37,110	121.6	1,573	8,665	450.9
Kafr El Sheikh	9,232	18,403	99.3	861	8,709	911.5
Beheira	13,408	27,353	104.0	1,599	7,171	348.5
Giza	15,345	23,738	54.7	1,480	15,298	933.6
El Fayoum	7,854	17,924	128.2	710	3,957	457.3
Beni Suef	8,428	18,244	116.5	703	4,934	601.8
Minia	11,685	24,839	112.6	1,224	5,859	378.7
Assiut	10,834	22,898	111.3	837	6,122	631.4
Sohag	12,520	27,746	121.6	951	5,128	439.2
Qena	12,694	24,464	92.7	827	5,206	529.5
Aswan	8,695	18,029	107.3	569	8,079	1,319.8
Matruh	2,029	3,234	59.9	463	3,461	647.5
El Wadi El Gedid	2,605	4,924	89.0	297	2,441	721.9
Red Sea	1,711	2,659	55.4	694	2,112	204.3
Sinai	1,752	3,723	112.5	210	5	-97.3
TOTAL	258,334	512,137	98.3	53,801	202,824	276.9

SOURCE: Ministry of Finance.

TABLE VI-3

COMPARISON OF LOCAL CONTRIBUTION TO GOVERNORATE BUDGET

GOVERNORATE	1975			1977			1979		
	TOTAL EXPEN-DITURE (000)	LOCAL RAISED FUNDS (000)	% OF TOTAL EXPENDITURE COVERED BY LOCAL RAISED FUNDS	TOTAL EXPEN-DITURE (000)	LOCAL RAISED FUNDS (000)	% OF TOTAL EXPENDITURE COVERED BY LOCAL RAISED FUNDS	TOTAL EXPEN-DITURE (000)	LOCAL RAISED FUNDS (000)	% OF TOTAL EXPENDITURE COVERED BY LOCAL RAISED FUNDS
Urban Governorates									
Cairo	54,879	18,536	33.8	64,241	21,203	33.0	93,094	37,770	40.6
Alexandria	21,742	11,139	51.2	31,890	11,892	37.3	45,759	22,479	49.1
Port Said	4,679	588	12.6	9,696	3,386	34.9	15,223	6,903	45.3
Ismailia	3,316	489	14.8	6,712	1,966	29.3	11,280	5,910	52.4
Suez	2,993	639	21.4	5,204	1,748	33.6	7,759	4,339	55.9
Rural Governorates									
Qalyubia	13,448	1,931	14.4	21,381	3,188	14.9	31,260	6,795	21.7
Sharkia	19,217	1,407	7.3	28,204	4,163	14.7	42,450	7,754	18.3
Dakahlia	20,160	4,462	22.1	32,425	6,629	20.4	51,665	11,399	22.1
Damietta	8,215	640	7.8	11,107	2,011	18.1	16,842	5,935	35.2
Menoufia	14,953	972	6.5	23,931	3,137	13.1	37,185	6,393	17.2
Gharbia	18,316	1,573	8.6	30,786	6,010	19.5	45,775	8,665	18.9
Kafr El Sheikh	10,093	861	8.5	14,353	2,185	15.2	27,112	8,709	32.1
Beheira	15,007	1,599	10.7	22,199	4,895	22.1	34,524	7,171	20.8
Giza	16,825	1,480	8.8	24,319	4,656	19.1	39,036	15,298	39.2
El Fayoum	8,564	710	8.3	12,608	1,813	14.4	21,881	3,957	18.1
Beni Suef	9,131	703	7.7	14,998	2,517	16.8	23,178	4,934	21.3
El Minia	12,909	1,224	9.5	20,096	3,619	18.0	30,698	5,859	19.1
Assiut	11,671	837	7.2	18,567	2,566	13.8	29,070	6,122	21.1
Sohag	13,471	951	7.1	20,359	2,829	13.9	32,874	5,128	15.6
Qena	13,521	827	6.1	18,830	2,707	14.4	29,670	5,206	17.5
Aswan	9,264	569	6.1	14,735	2,215	15.0	26,108	8,079	30.9
Matruh	2,492	463	18.8	3,721	920	24.7	6,704	3,461	51.6
El Wadi El Gedid	2,902	297	10.2	4,225	590	14.1	7,365	2,441	33.1
Red Sea	2,405	694	28.9	2,916	890	30.5	4,771	2,112	44.3
Sinai	1,962	210	10.7	1,647	486	29.5	3,729	5	0.2
TOTAL	312,135	53,801	17.2	459,165	98,221	21.4	714,962	202,824	28.4

SOURCE: Ministry of Finance.

provide the largest base for the central taxes to which the local taxes are added.

iii) The central grants-in-aid total represents 80.5 percent of all local financial resources. This may diminish the meaningfulness of a system of autonomy or local initiative.

iv) Law 52/1975 provided for "special accounts", a source of revenue new to the traditional system of Egyptian finance, and which may become the basis for a truly independent local government system; nevertheless the amount of money available from the "special accounts" is a very small percentage of local council budgets.

v) It is still too early to pass a judgment on the new sources of revenues provided for governorates by Law 43/1979. It is likely that the yield of such new resources will constitute a very small portion of the governorate budget.

vi) The Law is not clear as to the sources of revenues for the districts and urban quarters or the source of money for their special accounts.

Finally, the general difficulties regarding locally raised revenues are:

i) It is largely a deficit system. The transfer of the operation and management of public expenditure to local authorities has not been matched by a correspondingly expanded capacity to raise local sources of revenues. On the contrary, most of the local tax bases, i.e. land and buildings, have been eroded by political and social equity policies. For example, the peasants who have three feddans of land or less do not pay land taxes. Since a significant portion of the peasants own less than three feddans of land, this restriction greatly reduces the tax base.

ii) The revenues are overwhelmingly dependent on indirect taxation and the

expansion of the money supply by the central bank to finance the deficit.

iii) There is no fiscal linkage between local expenditures and revenue raised locally. The people are not aware that the funds raised locally are spent locally for their own needs.

G. Issues of Local Government in Egypt

In spite of the fact that there have been many achievements in these two decades, there still are problem issues to be addressed.

1. The Instability of Legislation Governing Local Government

There is a perception that the way to effect development is to promulgate a new law. There have been three local government laws since 1975. There is a question about the usefulness of laws changed so frequently. This is especially true when the change does not involve a basic shift in development policy. The elements of decentralization which are constantly changing do not permit the local institutions to accommodate themselves to changes which also involve the citizen's gradual understanding and participation.

2. Size of Local Units

The criteria laid down for the subdivision of Egypt into governorates, districts, towns and villages are very vague, especially the criteria for the transformation of a village into a town (urban center) providing it with urban status. Various pressure groups can influence the governor or the Minister to issue a decree transforming a village to a town with its added powers, regardless of its type of economic life and urban character. This is one of the main reasons for the confusion over urban and rural as distinguishing terms in characterizing settlements.

In addition, since Law 124/1960, the local councils continued to function, with few exceptions, within the older boundaries of the earlier local units. These areas bear few resemblances to the present population which show a large urbanization pattern that spills over old borders. Greater Cairo, for example, no longer encompasses only the Cairo Governorate, but presently also includes urban expansion into Giza and Qalyubia governorates.

3. Types of Local Units

Before Law 52/1975, the governorates were divided into districts as a central administrative unit and had no share in the functions of local government. After five years of practice, it was found that the village was dependent on the town for providing different services. Thus, the district was established to:

i) Encourage a district-wide economic development.

ii) Coordinate in a more effective way all government services in the towns and villages of the district.

iii) Strengthen and encourage a truly decentralized local government system.

With the application of Law 52/1975, the urban quarters which had been established in previous laws as branches of the governorates in big cities were endowed with juristic entity and thus became a local government unit.

These two local government units — the district and the urban quarters — presently do not play their appropriate roles owing to the vague allocation of functions, powers and financial resources to them.

4. Tiers of Local Government

According to Law 43/1979, there are four tiers of local units in provincial governorates and two tiers in the four big cities. In Cairo the governor under the law has organized the seven quarters into three units under four deputies to the Governor.

The multi-tier system increases the possibility of bureaucratic complications and slow and ineffective communications. Furthermore, these multi-tiers need extensive supervision and administrative control, while the local authorities are complaining of the scarcity of qualified personnel.

5. The Problem of Uniformity and Disparity

The Laws of Local Government have brought all the local units of the same type under a uniform structure, with similar functional and financial authority, while these localities have many social, economic and cultural disparities. Even while trying to provide a unified general pattern for local government in Egypt, there is a need for recognizing the regional disparities within the country. Cairo, for example, has the same structure of government as other governorates regardless of size, status, local character or specific problems.

6. Citizen Participation

Politically, Egypt is living in a transitional period, from a single party system to the multi-party system. This transition is still in its first stages and has not yet affected local political life.

Law 43/1979 guaranteed a woman representative on the local councils at the various levels to stimulate female participation in public affairs, but this representation did not take into consideration the prevailing socio-cultural context which prohibits women from public life in the villages and desert areas, especially in Upper Egypt. In the last election of November 1979 in most jurisdictions there was only one woman on the ballot.

The 1979 Law also required representation for workers and farmers. However, the effective independence of their participation was reduced by the change to party list voting under the 1981 Law.

7. Local Leaders and Personnel

Rapid turnover has the potential for creating problems in leadership. Table VI-4 presents the turnover in the governors in the last ten years.

A problem in securing creative leadership at the local level is that public administrators are reluctant to live in small towns and villages. They perceive an assignment to rural areas as requiring a sacrifice of amenities and opportunities that greatly outweigh the benefits of being there.

The development and retention of dynamic leadership is essential for successful local government.

TABLE VI-4
CHANGES OF GOVERNORS BETWEEN 1970 AND 1980

Governorate	Oct. 1970	May 1971	Nov. 1972	Mar. 1976	Nov. 1976	Nov. 1977	Aug. 1978	Nov 1979	May 1980	No. of Changes
Cairo			●	●	--	●				3
Alexandria		●	●	●		●	●	●	●	7
Suez			●	●		●	●	●		5
Beni Suef			●	●		●	●	●	●	6
Giza			●	●		●	●	●	●	6
Behera				●		●	●	●	●	5
Ismailia		●	●	●		●	●	●		6
Kafr El Shiekh		●	●		●	●	●	●	●	6
Dakahlia		●	●	●		●	●	●	●	6
Matruh			●	●	●	●				4
Gharbia		●	●	●						3
Qena		●	●	●		●	●	●		6
Sohag		●	●	●	●	●	●	●	●	8
Qalyubia			●	●	●	●	●	●	●	7
Port Said			●	●						2
Damietta		●	●		●	●	●	●	●	7
El Fayoum			●	●		●	●	●		5
Sharkia		●	●	●	●	●	●	●		6
El Wadi El Gedid			●	●	●	●	●	●		6
Menoufia		●	●	●	●	●	●	●		7
Aswan		●	●	●		●	●	●	●	7
Minia		●	●	●		●	●	●	●	7
Red Sea				●	●					2
Assiut			●	●						2

KEY: ● Change
-- No Change

SOURCE: Secretariat General of Local Government & Ministry of Foreign Affairs.

8. Central Attitudes Towards Local Government

Central bureaucrats have resented any competitive power base outside the center and resisted efforts to create an effective local government organization. They may when pressured seem willing to delegate certain tasks to the local authorities, but they undermine these by efforts depriving the local authorities of the financial and policy-making means for effective implementation.

H. Comparison of Local Government Laws

The Local Government Laws of 1960, 1971, 1975, 1979 and 1981 are compared in Tables VI-5 though 9 using the following categories:

i) The creation of units of local government.

ii) The central and regional structures of local government.

iii) The office of the governor.

iv) The structure and function of local councils.

v) The financial resources at the governorate level.

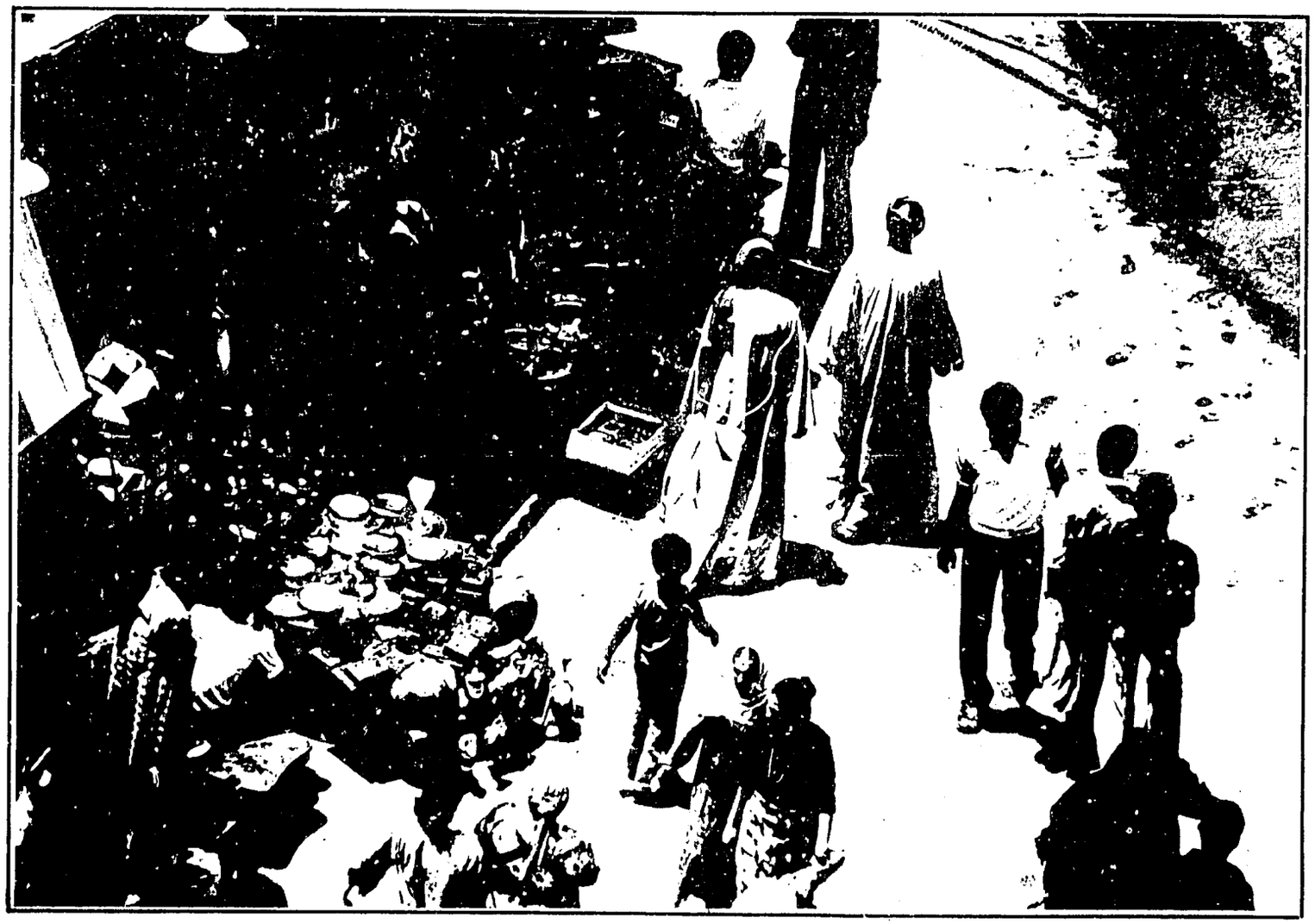

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TABLE VI-5

UNITS OF LOCAL GOVERNMENT

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
1. Units and their Delimitation	A. Governorates -- by Presidential Decree B. Towns -- by a Decree of Minister of Local Administration C. Villages -- by a decree of the Governor	A. As in previous law. B. Towns -- by a Decree of the Prime Minister after the consent of People's Council of the governorate. C. Villages -- by a decree of the Governor after the consent of Governorate Council.	A. As in previous law. B. Districts (Markez)--by a Decree of the Minister of Local Government after the consent of the Governorate Council C. Towns -- by a Ministerial Decree D. Urban Quarters -- E. Villages -- by a Governor's Decree after the consent of Governorate Council.	A. As in previous law. B. By a Decree of the Governor after the approval of local People's Council at the Governorate and the Board of Governors.	A. As in previous law. B. By a Decree of the Prime Minister after approval of the Governorate Local Popular Council. C. D. E. Villages -- by a Governor's Decree after the consent of Governorate Council.
2. Tiers of Local Units	A. Governorate B. Towns and villages	A. As in previous law. B. As in previous law.	A. As in previous law. B. Districts C. Towns and villages D. Urban quarters	A. As in previous law. B. As in previous law. C. As in previous law. D. As in previous law.	A. As in previous law. B. As in previous law. C. As in previous law. D. As in previous law.
3. Special Districts			A. This law creates councils of services in industrial areas to coordinate between local authorities & industrial public units.	A. As in previous law.	A. As in previous law.

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TABLE VI-6a

CENTRAL AND REGIONAL STRUCTURE OF LOCAL GOVERNMENT

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
1. Ministerial Committee of Local Administration	A. The Ministerial Committee is formed from relevant Ministers to develop programs to implement this law.	A. A Ministerial Committee of local government is headed by the Prime Minister and Ministers concerned with local government.	A. As in previous law.	A. The Ministerial Committee is replaced by a Board of Governors headed by the Prime Minister & composed of the Ministers concerned with local government and the Governors. The Chairman may invite any other person to attend the meetings of the Board.	A. The Board of Governors is replaced by a Higher Council for Local Government, chaired by the Prime Minister, and composed of the Ministers concerned with local Government, all governors and the chairmen of all Governorate Local Popular Councils. The Chairman may invite other Ministers or persons to attend the meetings. B. The Higher Council shall discuss all matters related to the local government, including its strengthening and development and the recommendation of laws, rules and regulations regarding local government. Most of the previous powers of the Board of Governors regarding approval of setting boundaries of industrial zones and approval of local laws for establishing productive or investment projects have been given to the Governorate Local Popular Councils.
2. Ministry of Local Administration	A. The Law creates for the first time the post of Minister of Local Administration. As a result, the Ministry of Municipal and Rural Affairs was replaced by a Ministry of Housing & Public Utilities, and all the functions concerning the supervision of the activities of municipal and rural councils were transferred to the newly established Ministry. In the meantime, the Ministry of Interior handed over the Affairs of Provinces to the new Ministry and since that time it has been confined to Security and police affairs.	A. In 1973 a Presidential Decree was issued establishing the Organization of Reconstruction and Development of the Egyptian Village (ORDEV) to work on rural development.		A. This law stipulates for the first time formally the creation of a Secretariat General of Local Government to work under the supervision of the Minister in Charge of Local Government and to be considered the instrument of the Board of Governors.	A. As in previous law. ORDEV and the General Secretariat for Local Government remain the same.

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TABLE II-6b

CENTRAL AND REGIONAL STRUCTURE OF LOCAL GOVERNMENT (Continued)

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
3. Institute of Local Administration	A. In 1965 the Minister of State for Local Administration established an Institute of Local Administration to train the local personnel as well as the elected members of the local councils. B. In 1968, there was a tendency to amalgamate all the institutions working in the field of development management. The Institute of Public Administration, the Institute of Local Administration and the National Institute for Executive Development were amalgamated into one institute under the name of the National Institute of Management Development (NIMD). Within this National Institute was a center for local administration.	A. As in previous law.	A. As in previous law.	A. As in previous law.	A. As in previous law. In March 1981 the Sadat Academy of Administrative Sciences was established to take over the functions of the National Institute of Management Development. The High Executive Training Program of the Central Agency for Organization and Administration will be merged with the Academy. The Academy will be attached directly to the Office of the Prime Minister/President.
4. Regional Organizations				A. For each of the eight economic regions, a regional planning commission is formed.	A. As in previous law.

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TABLE VI-7a

THE GOVERNOR

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
1. Appointment and Removal	By Presidential Decree	By Presidential Decree	By Presidential Decree	By Presidential Decree	By Presidential Decree
2. Rank & Status	-- Deputy Minister as to salary and protocol	-- Deputy Minister and may be a Minister	-- A Minister or Deputy Minister according to the importance of a governorate and the Presidential Decree	-- A Minister	-- A Minister
3. Responsibilities & Powers	The Governor:				
	-- Represents the executive authority of the state within his jurisdiction.	-- Represents the President of the Republic within his jurisdiction.	-- As in previous law.	-- As in previous law.	-- As in previous law.
	-- Supervises the implementation of the general policy of state.	-- As in previous law.	-- As in previous law.	-- As in previous law.	-- As in previous law.
	-- Presides over the Governorate Council.	-- Presides over the Executive Council and Chief Executive of the governorate & its local councils in the meantime.	-- Presides over the Executive Committee of the governorate.	-- Presides over the Executive Council.	-- As in previous law.
	-- An agent of the State and Chief Executive of the governorate and its local councils in				
	-- Ministers must consult with him on questions of promotion & transfer of personnel working in the Governorate.	-- As in previous law.	-- As in previous law.	-- Ministers must consult with him on questions of promotion & transfer of personnel working in the governorate.	-- The previous law was clarified with regard to powers over civil servants in his jurisdiction. (Article 27c). He has all powers of the appropriate Minister where the functions of the department have been transferred to local units within the Governorate. In other cases, except judicial authorities, the Minister concerned may delegate some of his functions to the Governor. If this is not done, then the Governor may: a. sugges, the transfer of civil servants outside the Governorate if their presence is judged incompatible with public benefit; b. give opinion on promotions and transfers within the Governorate;

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TABLE VI-7b

THE GOVERNOR (Continued)

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
3. Responsibilities & Powers (Continued)					c. demand interrogation and inflict discipline within limits of powers of Minister.
	-- Inspects the reports of town & village councils within his jurisdiction, and must approve certain decisions they adopt.	-- He may confer some of his powers to his Assistant Secretary General, heads of towns and villages within his jurisdiction.	-- He may confer some of his powers to his Secretary, Assistant Secretary General, heads of towns and villages and heads of local departments within his jurisdiction.	-- **As in previous law.**	-- He may confer some of his powers to his Secretary, Assistant Secretary General, heads of towns and villages and heads of local departments within his jurisdiction.
				-- He has the right to lay down the rules of selling or renting governmental lands for building or reclamation & its distribution after being reclaimed within the rules laid down by the Board of Governors and after the consent of the local councils.	-- **As in previous law,** except national plan is now under Minister of Land Reclamation and not Board of Governors.
	-- Reports to the Minister of Interior on matters of security & to the Minister of Local Administration on matters relating to local government.	-- Cooperates with the Minister of Interior in maintaining public order & security within his jurisdiction.	-- Cooperates with the Minister of Interior in maintaining public order & security within his jurisdiction.	-- In charge of security aided by Security Director within the policy laid down by the Minister of Interior.	-- **As in previous law.**
			-- He is responsible for raising the productivity of agriculture & industry within the Governorate.	-- **As in previous law,** also including food and security, and he reports directly to the Prime Minister.	-- **As in previous law.**
3.	-- Other National Ministers may confer some of their powers on him.	-- **As in previous law.**	-- **As in previous law.**	-- **As in previous law.**	-- **As in previous law.**
	-- Has the powers of an Under Secretary of State in Administration.	-- Has the powers of a Minister & an Under Secretary of State in Administration.	-- **As in previous law.**	-- **As in previous law,** but including finance.	-- **As in previous law.**
	-- Is in administrative control of all government personnel, except judges, in the Governorate.	-- **As in previous law,** and has the powers of a Minister in all affairs relating to personnel management in the local agencies.	-- **As in previous law,** and has the powers of the Minister specified in the laws creating the public authorities working within the Governorate jurisdiction.	-- **As in previous law.**	-- **As in previous law.**
	-- Appoints all personnel within the Governorate who are not higher than the seventh grade. (The administrative scale begins at the bottom with 9th grade.	-- Must be consulted on the transfer of the heads of local departments.		-- People's local council inform him of its decisions and recommendations. He has the right to set aside any decision of the local people's council if it is against the general policy of the state.	-- **As in previous law.**

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TABLE VI-8a

THE STRUCTURE AND FUNCTIONS OF LOCAL COUNCILS

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
1. Structure of Local Councils	-- The local councils are formed from three elements: a. Elected Members: chosen from ASU, the only political organization in existence. b. Selected Members: chosen for their experience by the Minister of Local Government on recommendation of the Governor. c. Ex-Office Members: chief executives of various departments. -- The elected members have the majority. -- The local councils are chaired by the Governor and the Chairman appointed by the central government.	-- There are two councils at the level of the governorates: a. People's Council: which is chaired by the Secretary General of ASU at the Governorate & consists of members of ASU committee plus two representatives for youth. -- Members of the National Assembly have the right to attend the meeting without voting. b. Executive Council: chaired by the Governor & membership of the executives of various departments.	-- In each local unit a Local Council and a Executive Committee are formed. a. The Local Council is formed by direct election at the various levels. Each council should elect at its first meeting a Chairman and two vice-Chairmen. -- As in previous law. b. The Executive Committee is presided by the Governor and other heads of local units and consists of executives of various departments plus the heads of the committees of the elected local council.	-- In each local unit a Local People's Council and an Executive Council are formed. a. As in previous law. Plus a woman representative. b. The Executive Council is formed from the executives of various departments only and presided by the Governor.	-- a. The Local People's Council is formed by direct election but only from persons nominated on party lists. They must be elected by an absolute majority of votes cast, thus requiring a run-off in some instances. b. The Executive Council: as in previous law.

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TABLE VI-8b

THE STRUCTURE AND FUNCTIONS OF LOCAL COUNCILS (Continued)

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
2. Functions of Local Councils	A. The Local Councils: The law delegates to local authorities functions which by their nature are predominately local, including utilities, education and public health.	A. The People's Council: Will follow up the implementation of national plans within the domain of the governorates in general and suggest the following policies & take decisions in the following areas: -- Strengthen the defence of the home and citizens and secure the national service. -- Suggest the creation of various local utilities and activities within the general plan of the state, and, in particular, the following matters: education, health care, social affairs, supply, manpower, housing, utilities, culture services, public transport, roads, agriculture and irrigation. B. The Executive Council: -- Implements the plans and programs of the national program of work. -- Is responsible for implementing plans of national defence within the framework of General plan of state. -- Supervises the work and activities of public utilities and services. -- Will study and suggest the rational allocation of water needed for irrigation. -- Will study and make recommendations in regard to the supply of electric power within the domain of the governorate. -- Will prepare the annual plan and budget.	A. The Local Council: Local authorities have responsibility for all functions as a general rule. As regards functions in which the nation as a whole is interested, the policy of the law is to define such functions by a decree of the President. -- Gives the elected local councils the right to interrogate Governors and other executives on their work and they can determine their responsibility for any action.	A. The Local People's Council: -- Same as previous law, except national matters are defined by decree of the Prime Minister. -- This law cancelled the right to interrogate, leaving only the right of drawing attention to specific issues.	A. The Local People's Council: -- Same as previous law. -- This law once again gave the local councils the right to interrogation, but on a more restricted basis than the 1975 law, requiring an absolute majority of the members to ask for such an interrogation of an executive head and a two-thirds majority in the case of the Governor. The report of the local council on the wrongdoing would then be submitted to the President, who, in the case of the Governor, would either replace the Governor or dissolve the local council.

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TABLE VI-9a

FINANCIAL RESOURCES

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
1. Governorates	Joint Revenues: All governorates were allowed a share of special add-on tax placed on all import and export taxes, movable properties (stocks, bonds, shares, etc.) and from all industrial and commercial profits tax. The percentage of these taxes that go to the local government is fixed by law. Half of the yield of the taxes went into the budget where these taxes were levied. Therefore, 80% of this money goes to Cairo, Alexandria, Port Said, Suez and Aswan governorates. The other half went directly to a joint fund in the General Secretariat of Local Government to allocate it for special development projects in all the governorates.	Joint Revenues: As in previous law.	This law provides for sources of revenues unique to the traditional system of Egyptian finance. The Law stipulates that the local councils may establish accounts for "local services and development". This special account is separate from the central budget and does not devolve to the Central Government if it is not spent. The sources of revenue for this account are: A. Special local duties for the purpose of this account. B. Profits which may come from the development projects financed by this "Special Fund". C. Donations, contributions and supports from local, national and international sources. D. 50% of the increase in the gorss yield of the local revenues over that estimated in the budget.	This law provides for the establishment of two additional special accounts. A. Special revenue from cultivated or reclaimed land sale. The gross yield of this revenue will be allocated to the purpose of land reclamation within the governorate. B. Special account to finance economic housing projects within the governorate. The revenues of this special account come from eight Sources: -- Revenues from the open land reserved for building--if this land is sold. -- Revenues from housing bonds. -- Revenues generated from exceptions of height restrictions stipulated in the law of regulating construction and building works. -- The amounts allocated by the central budget for economic housing projects in governorate in the agreements concluded by the state. -- Loans. -- Grant , donations, gifts and bequests. -- Revenues from the investment of this account money. -- Revenues from the fines specified in paragraph 1, Article 21 of Law 106/76. C. Resources of both accounts specified above are considered to be governorate local resources. The surplus at the end of the year is transfered	As in previous law. Added several new sources for special account to finance economic housing projects: 1. receipts from the tax imposed on vacant land by Law No. 34 of 1978. 2. receipts from rents and payment of installments of Governorate-owned houses. 3. rents and installments paid for replacement houses built in the three cities of the Canal Zone. As in previous law.

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TABLE VI-9b

FINANCIAL RESOURCES (Continued)

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
				to the next year. The rules and procedures governing the use of both of these accounts are determined by the Board of Governors. This Board also determines, after consultation with the Minister in Charge of Insurance, the proportion required to be financed by the insurance companies through the purchase of Housing Bonds.	The rules and procedures governing the use of both of these accounts is set by a decision of the Prime Minister. The Prime Minister, after agreement of the Minister of Economy, will set the proportional percentage of housing bonds that must be purchased by the insurance companies.
	Local Revenues: A. One-quarter of the land tax and the add-on tax. The other three-quarters go to the towns and villages. B. Taxes and duties on motor cars, carts, motorbikes and bicycles and other means of transport licensed by the governorate. C. Other taxes and duties imposed by the governorate. D. Receipts from allocations of the funds invested by the governorate and all revenues from utilities controlled by the governorate. E. Government grants in-aid.	As in previous law.	Districts: A. Sources assigned by the governorate council. B. Receipts from investments of the district resources and all utilities under the direction of the district. C. Government grants-in-aid. D. Donations, gifts and contributions. E. Loans contracted by the district council.	As in previous law.	As in previous law.
2. Towns:	A. Taxes on buildings located within the jurisdiction of the town. B. Taxes on entertainment imposed within the jurisdiction of the town. C. 75% of the land tax and add-on land tax collected within its area of jurisdiction. D. Sources of revenues assigned from the governorate council to the town council.	As in previous law.	As in previous law.	As in previous law.	As in previous law.

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TABLE VI-9c

FINANCIAL RESOURCES (Continued)

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
2. Towns (Continued)	E. The towns are authorized to levy a "special assessment" -- a compulsory contribution -- on buildings which benefited from a project of public utility. This levy is determined by the law. F. Duties imposed by the town council to include: -- extracts from birth or death records and other health regulations. -- Licenses for quarries, mines and hunting. -- Regulations of building works, sewerage, road occupancy and public parks. -- Public establishments, clubs and industrial and trading firms. -- Cattle slaughtered. -- Markets administered by the private sector. -- Water, electricity and gas consumption (not beyond 10% of the value of consumption) when these public utilities are not operated by the town. -- Exploiting sea breaches and river banks. -- Rent paid by the occupants of buildings (4% maximum of the rent). G. Public utilities operated by the town or services it provides, to be paid by consumers or beneficiaries. H. Rent of state property whether in buildings or open land reserved for buildings situated within the jurisdiction of the town.				-- Adds duties of town planning activities to those for sewerage works, roads and public gardens.

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TABLE VI-9d

FINANCIAL RESOURCES (Continued)

ITEM / LAW	124/1960	57/1971	52/1975	43/1979	50/1981
2. Towns (Continued	I. Net revenues of the investment of the town funds, public utilities operated by the town and public market. J. Governmental grants & voluntary contributions.				
3. Villages	A. 75% of the land tax and the add-on tax for all lands within the jurisdiction of the village council area. B. Taxes and duties of a local character imposed by the village council. C. The other financial resources.	As in previous law.	As in previous law.	As in previous law.	As in previous law.
4. Cleanliness Funds	In 1968 a law was issued stipulating a tax on occupants of buildings (2% on rent) to be put in a special Fund for cleanliness.	As in previous law.	As in previous law.	As in previous law.	As in previous law.
5. Gasoline Funds	In 1967, the price of gasoline was raised. This raise allocated for road pavements and maintenance in the various governorates.	As in previous law.	As in previous law.	As in previous law.	As in previous law.

VII. CAIRO GOVERNORATE: AN ADMINISTRATIVE PROFILE

The administration of the Governorate of Cairo is of much greater importance to Egypt than that of any other governorate. The local government machinery and organization in Cairo functions similar to all other governorates in Egypt.

A. Historical Background

Cairo began its rapid growth in the early 20th century. Small towns like Giza and Shoubra El Kheima expanded and amalgamated with central urban Cairo to form one urban agglomeration surpassing the jurisdiction of the Cairo Governorate.

The jurisdiction of Cairo Governorate was too limited to cover the urban area of Cairo, which was administered actually by Cairo Governorate, city of Giza and city of Shoubra El Kheima. As a result, in 1965, the provision of the services such as water, sewerage and public transport was transferred to the national government, which in turn formed special purpose organizations for area-wide provision of these services.

In 1965, the High Committee for the Planning of Greater Cairo was created by Presidential Decree No. 2102/1965. Its main purpose was to plan for the whole area of urban Cairo, regardless of its administrative boundaries. The committee at the beginning of its work defined Greater Cairo with the following components:

i) The city of Cairo and neighboring urban areas in the governorates of Giza and Qalyubia.

ii) The areas which connected and related to central urban Cairo by economic or social functions and constitute an integral part of the urban agglomeration even if they were not connected geographically with it.

iii) The expected areas of expansion for Greater Cairo during the next fifty years.

According to this definition Greater Cairo comprised the Governorate of Cairo, the city of Giza, City Hawamdiah and some villages of the rural districts of Giza, Imbaba and Badrashin (Giza Governorate) and the city of Shoubra El Kheima, the city and district of Qalyubia, the city and district of El Kanater El Khayriah and some of the villages of Shebin El Kanater and El Khanka districts (Qalyubia Governorate).

The committee drew up plans and studies on the basis of the concept of the city-region. However, it could only make recommendations and had no binding power. Thus its role was very limited. In spite of the Committee, which lasted until early in the 1970's, Cairo never had an institution for planning that had wide-ranging functions and powers.

The High Regional Planning Committee and the Regional Planning Agency of Cairo Region established by Law 43/1979 have not yet been effective as planning units for the region. In fact, they do not have sufficient authority, sufficient finance or qualified personnel to shoulder this responsiblity.

B. The Administration of Cairo under the General Legislation

Cairo is not governed by special statute, but by the general legislation of local government. This Law stipulates that large cities (urban centers) may have the rank of governorate. In that way they have the functions, powers and finances of a governorate and town at the same time. Cairo, Alexandria, Port Said and Suez have this status now.

At the end of the 1960's, there had been a strong tendency to issue a special statute for the administration of Cairo within the general legislation of Local Government, but it was not done. It was perceived at that time that Cairo was in need of this special statute to provide metropolitan wide arrangements, including certain aspects of general policy making and planning.

Law No. 124/1960 stipulated that big cities may be divided into quarters, which in this case are considered administrative branches of the governorate. Law 52/1975 went a step further and endowed these quarters with the juristic entity, thus they became local government units within the domain of the big city which is called a governorate.

The Cairo Governorate is divided into seven quarters. (See Table VII-1) It is evident that the population in Cairo is unevenly distributed over the built-up land in Cairo city, and over the urban quarters of the city. These subdivisions do not reflect the historical, social, economic and ecological characteristics of the various sub-sectors of the city.

C. Cairo Local People's Council

The Governorate Council of Cairo is directly elected by the people. It consists of 130 members, 50 percent of whom at least must be workers or peasants. It is formed on the basis that each administrative section (kism) is represented by 4 members plus a women's representative. The Council elects from among its members the Chairman and two Vice Chairmen, one of whom is either a worker or a peasant.

Decisions are taken by a majority of votes cast. The Law gives the members of the National People's Assembly from Cairo the right to attend the meetings of the local council and take part in its deliberations without having the right to vote. The Law stipulates also that the governors and directors of various governorate's departments may attend these meetings.

The decisions of the People's Council become effective if they are considered to comply with the law. However, the governor has the right to reject any decision if it contradicts economic plans, the budget or any laws. He returns the decision once again to the council with his remarks within 30 days. If the council insists on its decision, the governor will submit the matter to the Higher Council of Local Government.

The Local People's Councils are formed on the same lines as the Governorate Council except that each kism within the domain of the quarter is represented by six members plus a women's

TABLE VII-1
POPULATION, SIZE AND NUMBER OF OF ADMINISTRATIVE SECTIONS (KISMS) IN EVERY QUARTER OF CAIRO IN 1976

Name of the Quarter and Kisms Within	No. of Population	Size (km^2)	Percentage of the Total Cairo	
			Population	Size
I. East Cairo				
Zeitoun	267,662	4.2		
Mataria	534,612	67.8		
Hadayek El Kobba	314,705	7.8		
Wayli	142,208	5.1		
TOTAL	1,259,187	84.9	25.3	40.3
II. Heliopolis				
Heliopolis	117,131	14.0		
Nasr City	65,347	7.2		
Nozha	101,625	11.2		
TOTAL	284,103	32.4	5.9	15.4
III. Helwan				
Maadi	167,056	25.1		
Helwan	282,597	5.7		
Tebbin	33,593	0.7		
TOTAL	483,246	31.5	9.7	15.0
IV. Mid-Cairo				
El Azhar	104,153	2.0		
Bab El Shaaria	110,247	1.1		
El Darb El Ahmar	146,589	2.8		
El Gamalia	166,699	4.8		
TOTAL	527,688	10.7	10.6	5.1
V. North Cairo				
Shoubra	128,782	1.6		
Sherabia	443,741	5.6		
Rod ElFarag	272,428	2.7		
El Sahel	438,753	6.5		
TOTAL	1,283,724	16.4	25.8	7.8
VI. West Cairo				
Ezbekia	59,667	1.7		
Abdin	88,282	1.6		
Boulak	177,929	2.7		
El Mouski	58,402	0.6		
Kasr El Nil	39,342	6.5		
TOTAL	423,622	12.6	8.5	6.0
VII. South Cairo				
El Saveda Zeinab	252,260	3.5		
El Khalifa	186,963	8.6		
Misr El Kadima	273,670	9.9		
TOTAL	712,893	22.0	14.3	10.4
GRAND TOTAL	4,974,463	210.5	100.0	100.0

SOURCE: CAPMAS, 1976 Census.

representative. The number of Cairo urban quarters elected councils are 182 members.

D. The Executive Council

The Executive Council is chaired by the Governor of Cairo and made up of assistants of the Governor, Heads of Quarters, Directors of Services Departments and the Secretary General as Secretary of the Council.

The Executive Council is responsible for:

i) Following up the activities of the executive institutions within the boundaries of the local unit and evaluating their performance.

ii) Assisting the Governor in developing managerial and financial plans to implement the decision taken by the Local People's Council.

iii) Setting the appropriate rules for operating the administrative and executive institutions.

iv) Studying and investigating of topics to be discussed by the local people's council.

The Quarters have similar executive councils with approximately the same structure and responsibilities in their areas of jurisdiction.

E. The Governor

The governor is the representative of the President in the governorate and the chief local executive. He is responsible in this capacity for supervision of the implementation of general governmental policy. He is the head of all these institutions and of all the employees in his governorate. He has all the powers of the minister in charge. The governor also supervises and directs all the ministerial branches where authority is not specifically delegated to units of local government except for institutions of justice.

F. The Organizational Structure

Figure VII-1 shows the organizational structure of Cairo Governorate. There are four main entities:

i) The governor and the organizational units under his direct supervision.

ii) The assistants of the governor: four of them as general coordinators between the urban quarters and the fifth for engineering affairs, supervising the housing, construction materials and other related activities.

iii) The Secretary General and his assistant, who administer the governorate headquarters and coordinate the other governorates' departments.

iv) The various technical departments which are headed by a director appointed by the concerned ministry such as Education, Health, Housing and Reconstruction, etc.

Figure VII-2 presents a typical quarter organizational structure — that of West Cairo.

The urban quarter organizational structure consists of four main entities:

i) The Head of the urban quarter and the organizational units under his direction.

ii) The Secretary of the quarter who is in charge of the general administration of the quarter.

iii) The Auditor who is in charge of revenues collection, expenditures and budgeting.

iv) Heads of technical services sections such as education, housing, manpower, etc.

G. Distribution of Functions Between the Governorate and its Urban Quarters

1. Consultative Functions

The Cairo Governorate has the functions of a governorate and a town at the same time.

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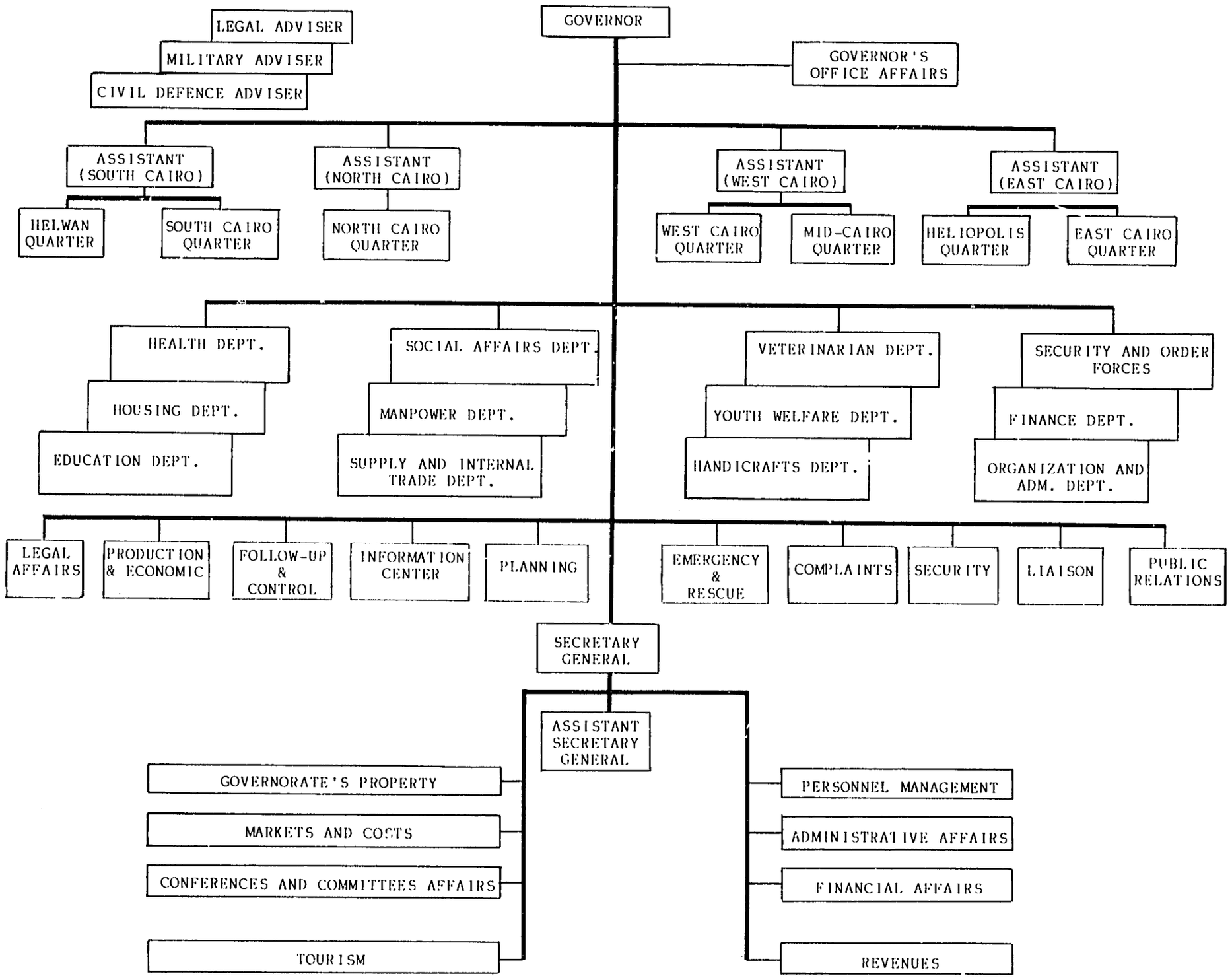
FIGURE VII-1
ORGANIZATIONAL STRUCTURE OF CAIRO GOVERNORATE
NOVEMBER 1980



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The law stipulates that the central government must consult in advance with the governorate on the following matters:

i) Creation, modification or cancellation of any means of transport if it is operating only within the domain of the governorate.

ii) Constructing any building or demolishing any such building as well as changing its usages.

iii) Creation, transfer or closing of universities or high institutes.

iv) Granting concessions for any business or public utility to be sited in the governorate.

The following are the matters on which the urban quarters must be consulted in advance:

i) Any modifications to the administrative boundaries of the quarter.

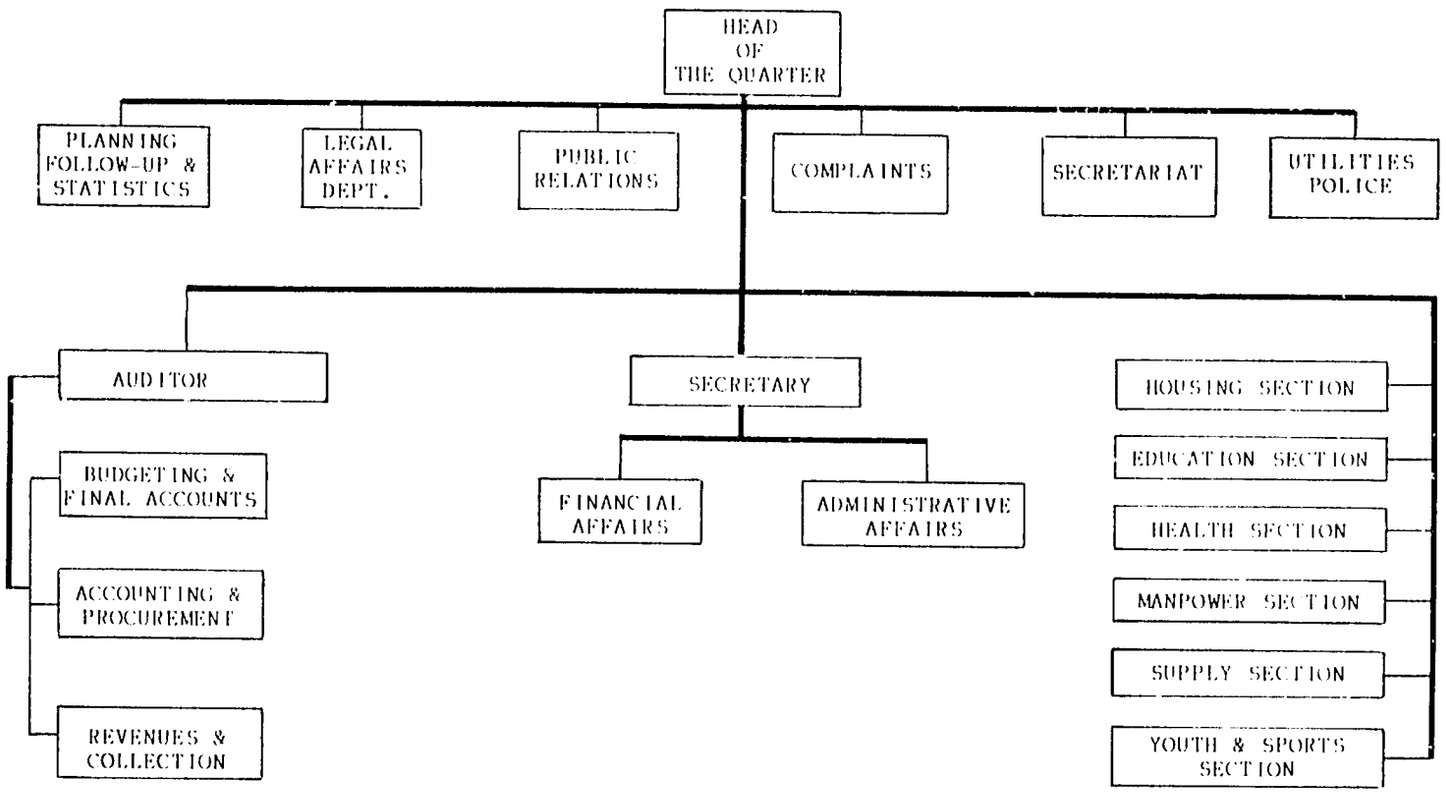
ii) Establishment of governmental institute/hospitals, their transfer or closing.

iii) Establishment of markets or exhibitions organized by the central government.

2. Municipal Functions

The law does not define in a clear-cut way the functions of the governorate and its urban quarters with regard to municipal functions, but it states that these functions which are of a local type should be the functions of the urban quarters if they have the capacity to shoulder them efficiently. Actually the allocation of these functions between the governorate and the urban quarters is in the hands of the governor.

FIGURE VII-2
ORGANIZATIONAL STRUCTURE OF WEST CAIRO URBAN QUARTER
NOVEMBER 1980



In fact the urban quarters in Cairo governorate have the following functions in this connection:

i) Issuing licences of buildings, general shops and establishment, occupancy and construction materials.

ii) Regulating and control of building construction.

iii) Maintenance of government buildings.

iv) Public cleanliness.

v) Public parks and gardens.

vi) Roads construction and maintenance.

vii) Environment improvement programs.

viii) Enforcement of laws regulating and controlling entertainment and public shops.

The governorate supervises the implementation of such functions and coordinates the activities of its urban quarters in this connection. In addition, the governorate carries out the following:

i) Construction and maintenance of main roads.

ii) Construction and maintenance of bridges.

iii) Cultural activities such as museums, public libraries and other cultural facilities.

iv) Tourism promotion.

3. Social Functions

The social functions are carried out by departments of the governorate which had been until 1960 field administration units in the central ministries. The Local Government Law stipulates the allocation of social functions between the governorate and its urban quarters as shown in Table VII-2.

TABLE VII-2
ALLOCATION OF SOCIAL FUNCTIONS BETWEEN GOVERNORATE AND URBAN QUARTERS

Activity	Governorate	Urban Quarter
-- Education	-- Secondary schools	-- Primary and preparatory schools.
-- Social Affairs	-- Supervision of social welfare activities	-- Pensions and grants to the disabled -- Productive projects to raise the income of some poor families
-- Supply and Internal Trade	-- Pricing committees -- Control of distribution of supply goods -- Supervision of consumers cooperative societies	-- Distribution of supply quotas -- Supervision of the distribution of commodities and its prices
-- Manpower and Vocational Training	-- Implementation of manpower plans on the level of the governorate	-- Enforcement of labor laws -- Vocational training centers
-- Youth Welfare & Sports	-- Creation and management of youth centers -- Supporting and supervising sports clubs	-- Supporting the governorate in its activities within the domain of the quarter
-- Health	-- General hospitals -- Health laboratories	-- Health units and clinics First aid and services

SOURCE: Secretariat General for Local Government.

H. Local Public Authorities and Companies

Besides the functional departments there are a number of autonomous authorities working under the direct supervision of the Governor of Cairo:

i) General Organization for Greater Cairo Sewerage and Sanitary Drainage.

ii) General Organization for Greater Cairo Water.

iii) General Organization for Cairo Public Transport.

iv) Organic Fertilizer and Remnants of Slaughter Houses Public Utility.

These public utilities are managed by semi-autonomous public authorities to secure the necessary management talent for efficient administration. The Board of Directors of these public authorities have representatives of Giza and Qalyubia Governorates. However, their decisions are ratified by the Governor of Cairo.

In addition to these public authorities, the Governor of Cairo is the supreme head of the following public sector companies:

i) Maadi Development Company

ii) Heliopolis Company for Housing and Development.

iii) Nasr City Company for Housing and Development.

These local public authorities and companies have been granted considerable autonomy in their charter. They are formally responsible to the governor. However, they have complete responsibility to undertake, operate and maintain their project area and are therefore virtually autonomous given the many other responsibilites of the governor. The new satellite towns are completely creatures of the Ministry of Development.

The law 52/1979, is an attempt to coordinate the activities of local authorities and the industrial public units working within their jurisdiction. It stipulates that a council will be established and called "the council of services for the industrial area". The main function of this council is to provide the industrial area with the required and necessary services. There are two councils of this type in Cairo, Helwan and Ameriya. The council is formed from representatives of the various industrial units, trade unions, local people's council and concerned executive officers.

The main source of financing the activities of the council is the 15 percent of the

TABLE VII-3
NUMBER OF LOCAL CIVIL SERVANTS AT CAIRO GOVERNORATE HEADQUARTERS
JANUARY 1980

	Grade	No. 1/2/	Percentage
	1st Under Sec.	2	0.01
	Under Secretary	--	--
	Director General	16	0.04
TOTAL		18	0.05
	1st Grade	182	0.49
	2nd Grade	2,206	5.90
TOTAL		2,388	6.39
	3rd Grade	8,677	23.22
	4th Grade	7,349	19.68
	5th Grade	4,833	12.94
	6th Grade	14,086	37.72
TOTAL		34,939	93.56
TOTAL		37,345	100.00

1/ This figure does not include the grades of the Secretary-General, his assistant and the heads of urban quarters as well as the grades of directors and sub-directors of various services departments (i.e., Education, Health, etc.).

2/ This figure does not include the civil servants working in water, sewers, public transport authorities as well as the housing public companies.

SOURCE: Cairo Governorate, 1980.

net profit of these industrial units which are assigned by law for social and housing services of the laborers. Other financial resources include the funds allocated by the central government and the governorate for these councils.

I. Cairo Governorate Personnel

Cairo Governorate as of 1980 had 128,852 employees, 37,345 of them working in the Headquarters of the governorate (29.1 percent), the Housing and Reconstruction Department 1,171 (1.1 percent), the Education Department 62,617 (47.7 percent), the Health Department 19,234 (15.0 percent), the Social Affairs Department 4,862 (4.0 percent), the Agriculture Department 690 (0.6 percent), the Manpower Department 1,119 (0.9 percent) and the Supply and Internal Trade Department 1,814 (1.6 percent) of the total number of personnel. (See Tables VII-3 and 4) These figures don't include the civil servants working in Water, Sewers, Public Transport Authorities as well as the Housing Public Companies.

J. Cairo Governorate Finance

1. Cairo Governorate Budget

Cairo Governorate has two sources of finance, that which is allocated to the governorate in the budget, and special funds. The revenues consist of three categories: (Table VII-5)

i) Locally raised funds which represent 30.0 percent of the total revenues of 1979.

ii) Central grants in aid which represent 69.4 percent of the total revenues of 1979.

iii) Loans which represent 0.6 percent of the total revenues of 1979.

Table VII-6 shows revenues and expenditures of the governorate during the same year as allocated to various departments and items.

2. Special Funds

The second source of revenues is the special funds, of which there are two in the Cairo Governorate. The two funds are raised locally and spent locally as well. They are revolving funds.

i) Local Services and Development Fund:

This fund was established according to the Law 53/75 for local government. Table

TABLE VII-4
NUMBER OF CIVIL SERVANTS WORKING AT THE HEADQUARTERS AND OTHER SERVICE DEPARTMENTS AT CAIRO GOVERNORATE

Activity Type	Headquarters		Housing & Reconstruction 2/		Education		Health		Social Affairs		Agriculture		Manpower		Supply & Internal		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Top Management 1/	18	0.05	-	-	--	--	--	--	-	--	--	-	--	--	--	--	18	0.01
Technical Professionals	1,244	3.33	211	18.02	23,168	37.0	3,892	20.24	1,294	26.61	499	72.32	618	55.23	46	2.54	30,972	24.04
Management Professionals	1,524	4.08	104	8.88	948	1.51	230	1.19	305	6.27	11	1.59	24	2.14	1,133	62.46	4,279	3.32
Technicians	1,796	4.81	27	2.31	26,985	43.10	5,530	28.75	1,754	36.08	37	5.36	26	2.32	79	4.36	36,234	28.12
Handicrafters	4,432	11.87	477	40.73	1,103	1.76	3,792	19.71	238	4.90	26	3.77	23	2.06	26	1.43	10,117	7.85
Clerks	5,103	13.66	189	16.14	4,553	7.27	1,258	6.54	762	15.67	55	7.97	367	32.80	348	19.18	12,635	9.81
Supporting Staff	23,228	62.20	163	13.92	5,860	9.36	4,532	23.57	509	10.47	62	8.99	61	5.45	182	10.03	34,597	26.85
TOTAL	37,345	100.00	1,171	100.00	62,617	100.00	19,234	100.00	4,862	100.00	690	100.00	1,119	100.00	1,814	100.00	128,852	100.00

1/ This figure does not include the grades of the Secretary-General, his assistant and the heads or urban quarters as well the grades of directors and sub-directors of various services departments (i.e., Education, Health, etc.).

2/ This figure does include the civil servants working in water, sewers, public transport authorities as well as the housing public companies.

SOURCE: Cairo Governorate.

TABLE VII-5
COMPARISON OF LOCALLY RAISED AND CENTRAL GRANTS TO CAIRO GOVERNORATE
1975 - 1979

Years	Total Expenditure (000)	Locally Raised (00)	%	Centrals Grants (000)	%
1975	54,879	18,536	33.8	36,343	66.2
1977	64,241	21,203	33.0	43,038	67.6
1979	93,094	27,939	30.0	65,155	70.0

SOURCE: Budgeting Department, Secretariat General of Local Government.

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TABLE VII-6
CAIRO GOVERNORATE'S BUDGET
1979

Item	000	%
Land Taxes	15,000	0.54
Building Taxes	2,450,000	8.77
Entertainment Taxes	1,932,000	6.92
Vehicle Licenses	7,986,000	28.58
Joint Revenues	9,722,000	34.79
Commercial Establishments	200,000	0.72
Industrial Establishments	110,000	0.39
Carts and bicycles	8,000	0.01
Boats	10,000	0.03
Slaughtering	200,000	0.76
Building Regulations	290,000	1.04
Parks	1,000	0.00
Surcharge on Benzin sales	350,000	1.25
Surcharge on Hotel Residents	200,000	0.72
Births & Deaths Register	90,000	0.32
Hunting & gun Licenses	5,000	0.02
Betterment Taxes	550,000	1.97
Rents of Buildings	440,000	1.57
Miscellaneous	1,037,000	3.78
Markets	490,000	1.75
Quarries	200,000	0.72
Revenues of local activities	1,409,500	5.04
Sales of lands	245,500	0.88
Total	27,939,000	100.0
Central grants	64,637,300	
Loans	517,700	
Grand Total	93,094,000	

2. Expenditures -- 1979

	I Salaries/ Wages (000)	%	II Current Expenditures (000)	%	III Investments (000)	%	IV Capital Transfers (000)	%	TOTAL (000)	%
Headquarters	14,836	21.19	6,047	48.41	7,669	89.85	2,026	98.22	30,576	32.84
Education	40,658	58.07	2,571	20.59		--	37	1.78	43,266	46.48
Health	9,830	14.04	3,028	24.25	560	658			13,418	14.41
Housing	719	1.03	192	1.54		-			911	0.98
Social Affairs	2,064	2.95	603	4.83	211	248			2,878	3.09
Supply	963	1.37	26	0.21					989	1.06
Agriculture	327	0.47	7	0.05	--	--			334	0.36
Manpower	614	0.88	15	0.12	93	109			722	0.78
Total	70,011	100.00	12,487	100.00	8,513	100.00	2,083	100.00	93,094	100.00

NOTE: % Local raised funds to total expenditure 30.1
% Central Grants to total expenditure 69.4
% Loans to total expenditure 0.5

SOURCE: State Budget.

VII-7 shows the actual expenditures and revenues of this fund. The fund's revenues are used for salaries, mosque restoration and other investments.

ii) Cleanliness Fund:

Law 38/1967 establishes a fund for cleanliness, derived from surcharge taxes on rent (2 percent). Table VII-8 indicates the actual expenditures and revenues for the year 1979. The fund's revenues are used for salaries, current expenditures (fuel and energy, spare parts, maintenance, etc.), purchase of mechanical equipment and debt servicing.

TABLE VII-7
LOCAL SERVICES AND DEVELOPMENT FUND
CAIRO GOVERNORATE
ACTUAL REVENUE OF 1979

Item	Actual Revenue	Percentage (%)
Charges over Water Invoices	12,297	0.96
Charges over Electricity Invoices	121,898	9.47
Taxes over Hotel Invoices	644,316	50.07
Entertainment Tickets	322,152	25.03
Charges over Taxis Terminal to the Delta	94,537	7.35
Statistical Services	105	0.01
Additional Education Services	59,250	4.60
Organic Fertilizer Organ	11,500	0.89
Miscellaneous	20,780	1.62
TOTAL	1,286,835	100.00

ACTUAL EXPENDITURE OF 1979

	Item	Actual Expenditure	Percentage (%)
I	Salaries & Compensation		
	Compensation & Incentive Wages	4,580	0.76
	Compensation & Allowances for Committees & Board Meetings	36,920	6.10
II	Current Expenditure		
	Contribution for Mosque Restoration	77,500	12.82
III	Investments	485,740	80.32
	TOTAL	604,740	100.00

SOURCE: Cairo Governorate.

TABLE VII-8
CLEANLINESS FUND
ACTUAL REVENUES AND EXPENDITURES
OF THE YEAR 1979

ACTUAL REVENUES - 1979

Item	Actual Revenues	Percentage (%)
Cleanliness Taxes	1,444,120	91.38
Funds Allocated in the Governorate Budget	94,465	5.98
Fines	29,763	1.88
Miscellaneous	11,954	0.76
TOTAL	1,580,302	100.00

Actual Expenditure -- 1979

	Item	Actual Expenditure	Percentage (%)
I	Salaries & Compensation		
	Salaries	62,435	21.31
	Incentives	211,774	72.26
	Allowances	50	0.02
	Social & Medical Security	18,789	6.41
	TOTAL	293,048	100.00
II	Current Expenditures		
	Clothes	23,524	4.56
	Materials	19,356	3.75
	Fuel & Energy	32,837	6.37
	Spare Parts	79,055	15.33
	Equipment	40,380	7.83
	Stationary	87,057	16.88
	Maintenance	8,079	1.57
	Public & Advertisements	579	0.11
	Miscellaneous	224,906	43.60
	TOTAL	515,773	100.00
III	Investments		
	Mechanic Equipments	264,277	99.28
IV	Capital Transfers		
	Loan's Installments	1,912	0.72
	TOTAL	266,189	100.00
	TOTAL	1,075,010	100.00

SOURCE: Cairo Governorate.

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Part Six: Legal Framework for Urban Development

I. Introduction

II. Regulation of Subdivisons

III. Building Regulations

IV. The Proposed Planning Law

V. New Urban Communities

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EGYPT NUPS دراسة السياسة القومية للتنمية الحضرية
NATIONAL URBAN POLICY STUDY

PART SIX

LEGAL FRAMEWORK FOR URBAN DEVELOPMENT

I. INTRODUCTION

There are a number of types of legal instruments that are used throughout the world, with varying degrees of success, to regulate urban development. They range from direct controls to indirect controls. They include prohibitions of development on certain types of land as well as planning, subdivision and building permission requirements. They also include inducements to promote certain preferred behavior, such as differential property taxation, tax concessions and subsidies as well as the establishment of special districts and agencies to facilitate land development or industrial development.

The success of many of these types of instruments is dependent upon a sophisticated bureaucracy and legal system for enforcement. Others, such as preferential property taxation, are also dependent upon the nature of the society itself, the self-regulatory behavior of its citizens. No government can effectively implement any type of taxation system without the active support of its citizens, regardless of the level of efficiency of its bureaucracy.

Part Six will briefly discuss the present types of legal instruments used in Egypt in the field of urban development.

A. The Present Situation

Planning in Egypt for all types of activities is presently done on a more or less ad hoc basis. No economic plan has been carried out to its conclusion without modification since the first comprehensive plan of 1960-1964. The national plan of 1978-1982 was a rolling plan in which substantial changes were made from year to year. The most recent version is the 1980-1984 plan. The plan procedure is reflected in the laws regarding the preparation of the state budget (Law No. 53 of 1973) and the economic planning process (Law No. 70 of 1973).[1] These laws have not generated detailed executive regulations regarding the budget process. Rather a new Manshur (instruction) is issued each year. In addition, the planning process reflects the centralization of government in the national ministries despite the establishment of eight economic regions under the law of local government (Law No. 43 of 1979) and its predecessor (Law No. 52 of 1975).

At the level of the governorate, planning officers are often unaware of the contents of the plan for their own Governorate.[2] Thus their annual budget requests are generally merely a list of projects endorsed by the elected officials which then must be cut at the central level by the Ministry of Finance or the Ministry of Planning.

In addition, the present civil service suffers from a number of problems, including low pay and a surplus of lower ranking personnel.

Given this introduction, what can be said about the various types of legal instruments mentioned? Before the discussion of each such law, some general points should be mentioned.

First, the capacity for enforcement in Egypt is limited and the capacity for evasion is very large. Therefore, a system of controls directed at a limited number of points would have a greater chance of success than a more general enforcement policy or attempts at enforcement through indirect controls, such as taxation.

Second, control at the local level where social sanctions can take effect is more likely to work than national enforcement, although this runs counter to all present actions by government in Egypt.

Third, prohibitions that run counter to the norms of the local society are not likely to be enforced regardless of enforcement capability as defined by available staff and monies.

With the above in mind, the various types of legal instruments available or pending in Egypt are summarized in Part Six.

B. List of Laws Affecting Urban Development

At present, planning and land use are regulated by a series of laws regarding subdivision permissions and specific types of land uses. The most important of these laws is Law No. 52 of 1940 regarding subdivision of lands for construction. Other relevant laws include the following:

1) Law No. 28 of 1949 (Industrial Zones)

2) Law No. 56 of 1954 (Rental Value Tax)

3) Law No. 453 of 1954 (Occupancy of Commercial and Industrial Establishments)

4) Law No. 222 of 1955 (Betterment Tax Assessment)

5) Law No. 140 of 1956 (Temporary Private Use of Public Thoroughfares)

6) Law No. 371 of 1956 (Standards of Public Establishments)

7) Law No. 372 of 1956 (Standards for Public Entertainment Establishments)

8) Law No. 21 of 1958 (Authority to Issue Industrial Permits)

9) Law No. 5 of 1966 (Cemeteries)

10) Law No. 29 of 1966 (Illegal Subdivision)

11) Law No. 53 of 1966 (Basic Agricultural Law)
As amended by Law No. 59 of 1973 and Law No. 59 of 1978
(Building on Agricultural Land)

12) Law No. 84 of 1968 (Public Roads)

13) Law No. 60 of 1971 (Public Organizations Land Powers)

14) Law No. 1 of 1973 (Standards for Construction of Tourism Establishments) and Law No. 2 of 1973 (Tourism Zones)

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15) Law No. 106 of 1976 (Building Standards)

16) Law No. 549 of 1976 (Sale of State Domain Land)

17) Law No. 49 of 1977 (Landlord Tenant Law)

18) Law No. 57 of 1978 (Ponds and Swampy Areas)

19) Law No. 43 of 1979 (Provision Regarding Industrial Establishments)

20) Law No. 59 of 1979 (New Urban Communities)

These laws are summarized in this section.

FOOTNOTES
(Section A)

1 See Sobhi Moharram, Albert Gorvine and F. El Kharib, Organization of the Government of Egypt: Administrative Framework in a National Urban Policy (National Urban Policy Study: February 1981), pp. 16-15.

2 USAID, Basic Infrastructure for Provincial Cities. Draft Final Report, (Cairo: January 1981), p. A-10.

II. REGULATION OF SUBDIVISIONS

Law No. 52 of 1940
Law No. 29 of 1966

A. General Provisions

Regulation of subdivisions in urban areas is the responsibility of the Department of Housing and Reconstruction in the governorate under Law No. 52 of 1940 regarding subdivision standards and Law No. 43 of 1979 regarding authority of local governorate.[1] (Article 12)

Law No. 52 of 1940 requires that all divisions of land for sale, rent or construction purposes, in which all plots are not directly located on an existing road, must be approved by the governorate. It applies both to the making of new subdivisions as well as to the alteration of existing subdivisions. However, it does not apply to subdivision of land in areas where no new roads are created. (Article 1) In addition, it does not apply to Heliopolis or to other subdivisions which, because of their importance or the presence of total or partial government ownership, are provided with special regulations. (Article 23)

Plans and drawings submitted by the applicant must be approved or disapproved within six months of submission or the subdivision will be considered to be approved. Reasons for the rejection of an application must be stated in writing. Such rejections are rare. However, in Cairo Governorate recently one application was refused because the area had been designated as a greenbelt area.

B. Specific Standards

There are a number of specific provisions in Law No. 52 of 1940 that must be followed by subdividers, along with obeying the basic building regulations, hygiene, public security, and traffic circulation standards. These provisions include:

i) Minimum street widths are specified at 10 meters, unless there are detailed regulations of the city providing for a lower standard. Roads more than 1,000 meters long must be at least 20 meters wide. (Article 4)

ii) Public uses are required to include one-third of the total developed area allocated for roads, squares, parks and other public uses. (This allocation includes one-half of the street width of existing public roads around the subdivided lands). However, the governorate is allowed to establish regulations setting a higher or lower standard. When it sets such a standard, it must pay compensation for expropriation if more space is required for public uses. (Article 5)

iii) Lot coverage provisions restrict a landowner from building on more than 60 percent of the total coverage of each lot. In addition, unenclosed structures, such as terraces or stairs, are allowed to occupy up to 10 percent of the additional space. (Article 6) In several areas of Cairo, more severe restrictions have been placed on lot coverage by contractural agreement. The maximum lot coverage in Maadi is 50 percent of the total lot. The maximum building coverage in Nasr City is one-third.

iv) Minimum lot size provisions are not specified in Law No. 52 of 1940, but maximum lot coverages are specified for construction. It does not extend in its jurisdiction to existing residential areas that are subdivided without new roads being created. However, using its general powers under Article 10 of that Law which prohibits a subdivider from renting, selling or leasing plots before it has approved the subdivision, the Ministry of Housing and Reconstruction issued a regulation, dated August 28, 1971, setting minimum lot sizes and maximum building elevations for different sections of the City of Cairo:

For Maadi, Heliopolis and Garden City the minimum frontage was set at 12 to 15 meters with a minimum lot size of 350 square meters. For Sahel, Nouzha and Qobba Gardens a lot size of 250 square meters and a frontage of 10 to 12 meters were set. For the rest of the city (older areas) a minimum lot size of 150 square meters and a frontage of 8.0 to 10.0 meters.

C. Control and Enforcement Provisions

Law No. 52 of 1940 contains a number of provisions regarding the control of development and the enforcement of the above standards:

i) Sale of land and construction of buildings in subdivisions is prohibited if the land is not registered and if a copy of the subdivision plan has not been submitted to the

local office of land registration (a part of the Ministry of Justice). Contracts for the sale or leasing of such lands must mention, specifically by number, the approval decision from the governorate or the contract will be null and void.

ii) The Department of Housing and Reconstruction in the governorate may require the developer to provide a subdivision with drinking water, electricity and sewerage at his own cost. (Article 12)

However, this provision is rarely enforced for large works that are not purely internal to the project itself. Also, the decision must be issued directly by the Minister of Development and Reconstruction.

If such a decision is issued, the developer may not build on the lots before completing the works mentioned and paying to the governorate his share of the cost of the mentioned works. When one-third or less of the lots of the whole subdivision, or of a specified part of the subdivision, are occupied by buildings which have been supplied with such utilities already, the developer must provide such municipal facilities for the entire subdivision, or that part under rules, within a time limit set by the governorate. If he does not do so, the governorate may complete the works and charge the developer.

iii) The Department of Housing and Reconstruction should not approve a road for construction until completion of the water, sewerage and electricity works and until three-quarters of the lots directly on that road are occupied by buildings.

In addition, the department is not required to accept a park until after its acceptance of the square surrounding it and the roads leading to it. (Article 16)

iv) The engineer of the Department of Housing and Reconstruction responsible for the project has been granted police power to enter the subdivision at any time to see that the regulations are being followed. (Article 19)

These provisions give sufficient legal authority to control development. However, their implementation leaves much to be desired, because of the lack of a budget and adequate staff. For example, in recent years, there has been no line item in the budget for the Cairo Governorate to cover the costs of contracting to complete municipal works, such as water and sewerage, before securing reimbursement from property owners.

D. Stricter Provisions for Planned Areas of Cairo

The general provisions regarding subdivision standards have been superseded by more stringent standards for planned upper-income areas in the Cairo Governorate, including Heliopolis, Maadi, Nasr City, and new residential developments planned for the industrial suburb of Helwan. As noted previously, Heliopolis was specifically exempted from the provisions of Law No. 52 of 1940.

1. Maadi and Heliopolis

Maadi and Heliopolis were both begun in 1905. The standards were quite high. In Maadi, for example, all deeds originally had restrictions that set the minimum size plot at one-quarter acre (1,050 square meters) with a 4.0 meter setback from the street. Presently, these regulations have been lowered in two areas of the older part of the subdivision to allow for apartment buildings with a maximum height of 15.0 meters (10.0 meters for the earlier buildings) and a setback of only 3.0 meters.

In New Maadi, plans are now being made to provide a more diversified range of housing types. There are three areas with different types of requirements. Some units of economic housing of 60 square meters are being planned as part of apartment complexes, and the maximum height restriction in that area has been increased to seven floors or 25 meters. However, the built area to be covered still cannot exceed a maximum of 50 percent of the total lot area. In addition, the minimum distance between neighboring buildings is still 4.0 meters and the minimum setback is 3.0 meters.

The Maadi Company retains control over building designs and reserves the right to enter the property to see that the building meets health and safety standards. Subdivision of land is prohibited without its approval. However, the company has no right to repossess land if building does not occur on a vacant lot within a prescribed period of time.[2]

2. Nasr City

Nasr City was the first planned community to accommodate a spread of income groups.[3] Its plan established different regulations and different zones for villas (single-family residences), modern residences (multiple-family units), industrial zones (light and heavy), commercial zones, education and open space. The provisions of its sales contract prohibit subdivision of land, limit the built-up area to one-third of the lot area, set a minimum room area of 123 square meters and provide for setting regulations for types of stories allowed by zone.

The company must approve a building design and no building permit can be issued without its approval. In addition, the company requires a ground floor to be built within three years of signing the sales agreement. If this action does not occur, the company can cancel the sales contract and take back the land, while paying the buyer the amount of money he had paid to date under the contract minus a 5.0 percent administrative fee. (Article 11 of the standard sales contract for Nasr City.) Unfortunately, this provision has not been enforced in practice. However, the Nasr City sales contract should serve as a model of the types of provisions required to control land development and speculation.

3. Helwan

One of the major areas for the new residential development in Cairo is the industrial

suburb of Helwan to the south of the city. Regulation No. 191 of 1975, issued by the Governor of Cairo, designates areas for certain types of development and sets standards for luxury housing, middle-income and public housing. The regulations for public housing specify a minimum lot size of 300 square meters with a minimum frontage of 16 meters and a minimum setack from the street of 3.0 meters. The maximum height is four storeys (up to 14 meters) and the maximum floor area is 50 percent of lot area. Thus, they are not viable for truly low-income housing.

E. Illegal Subdivisions

Given the high standards of present subdivision regulations, the lack of enforcement capacity at the governorate level and the pressures of rapid population increase in the Cairo Metropolitan Area, it is estimated that only about 50 to 60 percent of the development in Cairo each year occurs on legal subdivisions. A substantial portion of this development is completed by public sector housing and development companies.

In recognition of these realities, Law No. 29 of 1966 essentially legalized all existing subdivisions by eliminating the possiblity that the Minister of Development and Reconstruction could seek a court order to remove such violations or demolish buildings in violation, except in three cases:

i) on land which is owned by a government organization or public sector company.

ii) where buildings exceed building lines.

iii) where physical planning standards require improvement. (Article 1)

Further, it stated that the Department of Housing and Reconstruction can take over existing roads and services in such areas, after approval by the governor and the Minister of Development and Reconstruction, without providing compensation. It can also give public services to such areas, as under Article 12 of Law No. 52 of 1940, and collect the costs of administration of such services from the owners.

A law has just been passed to legalize such subdivisions to 1980. A similar law had been created in 1956 to cover buildings constructed between 1940 and 1955 which were in violation of subdivision and building construction standards (Law No. 259 of 1956). None of these laws have yet been effectively utilized but they do provide the basis for the provision of public services to low income subdivisions.

FOOTNOTES
(Section A)

1 Before the enactment of Law No. 124 of 1961 (local government) such approvals were made by the Ministry of Housing. Under Law No. 5 of 1972, the authority for sub-division approval for subdivisons not requiring new streets (and thus not under Law No. 52 of 1940) was transferred from the Undersecretary of State for Housing in the governorate to the General Director for Housing and Reconstructon in the governorate.

(Section D)

2 Sales contract New Maadi.

3 See Presidential Decree No. 815 of 1959 establishing the General Organization for Nasr City, Presidential Decree No. 2908 of 1964 transforming the Nasr City Organization to the Nasr City Company for Housing and Development, and Presidential Decree No. 3124 of 1971 giving specific development control over land in the area of Abbassia to the Nasr City Company.

III. BUILDING REGULATIONS

The basic law regulating buildings and construction is Law No. 106 of 1976 which replaced Law No. 45 of 1962. The implementing decree for Law No. 45 of 1962, Decree No. 169 of 1962, remains in effect while detailed regulations are being drafted for the new law.[1] The provisions of Law No. 106 of 1976 are not very different from those of the other laws regulating buildings, beginning in 1889,[2] except that stiffer enforcement procedures have been adopted. The new building regulations, however, allow the governor to set different standards in different areas.

A. General Provisions

Law No. 106 of 1976 sets up a two-step system for regulating building or alteration of buildings on urban land.

If the cost of the building exceeds L.E. 5,000, the investment must be approved by a committee set up by the Minister of Development and Reconstruction. It must fit within the housing budget allocation for the private sector. This decision is a condition for obtaining a building permit and is good for one year. (Article 1-2) The only exception to this rule is buildings constructed by government agencies or public sector companies. This provision was not found in prior building code legislation. It gives the government more authority to control luxury housing.

Regardless of the cost of the construction and regardless of whether the project is carried out by a private developer or a public sector company, a building permit must be obtained from the Department of Housing and Reconstruction in the governorate. (Article 4) Exemptions from this requirement may be made for public welfare, historic, tourist, political, or security reasons when a request is made by a local council to a committee made up of representatives of the Ministry of Development, Ministry of Tourism, Ministry of Local Government, and two professors of engineering or architecture/planning. Their decision must then be approved by the Minister of Development and Reconstruction, and the reasons for approval or disapproval must be stated. (Article 26-27)

The department must review plans and drawings within 60 days or the project is considered as approved. (Article 6) Rejection of applications will be reviewed by a committee com-

posed of a judge appointed by the president of the local court, two members of the local council and two government architects. (Article 15)

If an applicant receives a permit, he must begin building within one year and can renew his permit for only one additional year.[3] (Article 9) All applicants must hire a certified architect to sign such drawings, and a certified engineer must supervise construction over L.E. 5,000 in value (a new provision under this law). (Articles 5 and 12)

Fees for granting such permits are limited to a maximum of L.E. 200. (Article 33) In Cairo, the fee is based on a formula related to the amount of floor area and the number of square meter of elevation, as well as a fee of L.E. 0.50 for filing an application.

B. Specific Standards

A number of specific standards for buildings were set forth in Decree No. 169 of 1962. Law No. 106 of 1976 itself does not prescribe such standards, except to mention maximum height restrictions (Article 33) and to limit the approval of extra storeys, except where the foundation is sound. (Article 7)

i) Building heights are set at a maximum of 35 meters or one and a half times frontage. However, the height of the building can exceed the above standard, if the building's volume does not exceed 21 times the built area of the lot.

ii) Ceiling heights are generally a minimum of 2.7 meters, except for W.C. and other such rooms.

iii) Opening for ventiliation and lighting are set at 8.0 percent of floor area for residences and offices and at 10.0 percent of floor area for kitchens and bathrooms.

iv) Elevators must be supplied for every building that is above five storeys with a basement.

v) Guards must be provided if a building has 20 or more residence rooms.

C. Control and Enforcement Procedures

Law No. 106 of 1976 sets up stiffer procedures for violations of these regulations than were found in previous legislation. There are stronger penalties for violations, and additional powers have been granted to local public authorities to carry out demolition of buildings, to halt non-conforming uses, and to levy daily fines for non-compliance.

i) The Department of Housing and Reconstruction may now remove a building or a part of a building and clear it of its occupants without obtaining a court order. The cost of the removal can then be charged to the owner.

Such removal can occur only if the building is found to violate public welfare and only if the owner does not bring the building up to standard in the time specified by the review committee mentioned above. (Article 16) If the violations do not affect public health or the safety of residents, lesser penalties can be applied.

ii) A violator can be punished by a fine of L.E. 1.0 to L.E. 10.0 daily for each day that he is in violation of this law, after he receives notice of such violation. The amount is based on his number of previous violations and cannot be suspended by a court. (Article 24) Such penalties may be doubled if the violation is held to be willful.

iii) Violators of the provision requiring approval of all construction with a cost of over L.E. 5,000 must pay a fine equal to the cost of the construction or of the building materials used. A contractor of such a building must pay a fine equal to one-half of the cost of the construction that he was responsible for executing. In addition, either of those parties may be imprisoned for a period of three months to one year. (Article 21)

iv) Violators of the provisions regarding building permits and the correction of already existing violations may be fined from L.E. 10 to L.E. 1,000 or imprisoned for a period of six months or less, or both. (Article 22) If the violator does not correct the violation, he may be charged for its correction up to 2.0 percent of the total cost of the construction, but not less than L.E. 25. This amount may be in addition to the daily fine for non-compliance mentioned above.

v) If construction built without a building permit is not removed, the violator shall pay one-half of the costs of such removal. (Article 22)

Thus, there is a greater authority to provide for rehabilitation of existing dwellings, if it is used and if standards are adopted which make it possible, given government budgets, to make owners carry out such improvements.

FOOTNOTES

1 Article 34.

(Section A)

2 Regulation No. 549 of September 8, 1889, to implement Khedivial Decree of September 8, 1889; Law No. 51 of 1940; Law No. 93 of 1948; Law No. 310 of 1952; Law No. 656 of 1954; and Law No. 45 of 1962 were previous laws regarding building construction and building permits.

3 Digging for foundations is not considered as a start in the execution of a construction project.

IV. THE PROPOSED PLANNING LAW

There is a great need for a physical planning law that would establish a system requiring that development projects be coordinated. The draft of such a law by the former Ministry of Housing and Reconstruction was first submitted to the Peoples' Assembly in 1973 and is again being actively considered in 1981.

The Proposed Planning Law is an improved legal instrument and a necessary first step in developing a legal framework for planning in Egypt. It has good control and enforcement provisions if they can be executed.

A. Planning Provisions

Part One of the Proposed Planning Law would establish a framework for planning, including the requirement of the mandatory preparation of urban and rural master plans to guide further development. This framework would apply to all new subdivisions in urban areas and to such subdivisions in other areas as is determined by the Minister of Development and Reconstruction, after consultation with the Minister of Local Government. It would also regulate changes in existing subdivisions. This would include Heliopolis, developments on government-owned land and other developments of special importance which are not governed by special regulations under Articles 23 and 24 of Law No. 52 of 1940. In addition, Law No. 52 of 1940 would be abrogated. Thus, the legislation would be comprehensive in nature as compared to present law.

The basic procedure for development of such master plans and their relationship to specific subdivision and land use regulations would be as follows:

i) The local town council, in cooperation with the GOPP in the Ministry of Development and Reconstruction, would prepare the master plan taking into account its surrounding region and proposed expansion of urban boundaries. The priority for such projects shall be set by the Minister of Development, after consultation with the Minister of Local Government. (Article 1) After public discussion and approval by that local council, the plan would be approved by the Governorate Council and then by the Minister of Development and Reconstruction.

ii) The local town council, in cooperation with the GOPP, shall review such master plans at a maximum interval of five years. The results of this review shall be presented to the Minister of Development. (Article 3)

iii) The local town council, in cooperation with the GOPP, shall prepare physical planning projects, specify land uses and set development controls for areas governed by the master plan. (Article 4) Applications for subdivisions and building construction must conform to these planning requirements. Thus, there is created an interlocking system between planning and subdivision approvals and granting of building permits.

B. Subdivision Process

Part Two of the proposed Planning Law would replace Law No. 52 of 1940 regarding subdivision standards. It is more comprehensive in scope than the present law, as it defines a subdivision as any division of a plot into two or more plots or the construction of a second building, whether connected to the first building or not, but located on the same plot. (Article 7) Thus, the present distinction between subdivisions where roads are created (which are covered by Law No. 52 of 1940) and those where no road is created, which are exempt, is eliminated. In addition, the special exemption for areas such as Heliopolis is eliminated and the new law would be applied to such areas if it does not meet the standards established under it. However, in the meantime, the special provisions for such areas would remain in force. (Article 3)

The proposed law would make several changes in the present regulation of subdivisions:

i) Subdivisions can only be approved if they are consistent with general planning conditions. (Article 12 and 13) They must be approved by both the local town council and by the governorate.[1] The local town council may request that the governor issue a decree halting all subdivision requests for a period of two years, with the possibility of extension for another two-year period, while such plans are being developed and approved. (Article 17) In addition, the local town council may define stages of development for a given development area. (Article 15) Thus, the local authority is provided with a flexible set of powers that should be sufficient to coordinate approval of subdivisions with master planning. The law further provides a series of specifications regarding the establishment of industrial zones (Articles 23-29) which are being made consistent with the similar provisions found in the Local Government Law (Law No. 43 of 1979).[2]

ii) The procedures for approval of subdivisions are somewhat more complicated than the present ones. All drawings would have to be approved by a certified architect (not presently required). (Article 11) After the application is received by the town, there would be a staff technical review by the local Tanzim Department. That staff review must be completed within four months of the date of the submission of the application. The local town council must submit its decision within two months of receiving the staff technical review. It is considered to have approved the application if no decision has been made within three months. (Article 12) Thus, in most cases, a decision must be made within six months of application submission. The governor then has one month to approve or disapprove the proposal. (Article 13)

If the application is for a purpose other than building and if no new road is required, then the approval of the local Tanzim Department is all that is required. A decision must be made by that Department within 30 days of submission of the application. (Article 14)

C. Specific Standards

The rigid detailed standards found in Law No. 52 of 1940 have been eliminated in this proposal, with the exception of the setting of a maximum percentage of land for public uses. The local authority may set a standard in that

area as long as it does not exceed 50 percent of the total area of the subdivision. (Article 10) (The present maximum is one-third of the total area.) This standard is a flexible one that does not appear to create problems.

Thus, the proposed law would allow the opportunity to set standards for different areas of a city. Article 41 allows for exemptions from the provisions of the law for the furtherance of the public interest or in consideration of local circumstances.

D. Control Provisions

The proposed law also provides for an even broader group of control measures than are available under existing law and for a tightening of already existing measures.

i) Subdivision approval must be included in all contracts of sale or rent, or they are void. As an addition to existing law, it would state specifically that subdivision approval must be included in the conditions stated upon transfer of property by inheritance.

ii) The developer may not advertise his subdivision or otherwise deal with it until a copy of the approval has been submitted to the Department of Land Registration, until he has complied with the provisions regarding public utilities and until he has made a financial guarantee that he can complete such works. (The latter provision is a new one in this legislation).

iii) The developer shall provide utilities or the money needed to provide such utilities, according to regulations set by the local town council. If the developer does not conform with such a program, then the local council has the right to provide such utilities and can charge the developer the cost of such work plus a 10 percent charge for overhead. No building permit shall be issued if the developer does not pay such charges within six months of their being incurred. (Article 18)

iv) The Minister of Development and Reconstruction can alter subdivision regulations which were approved before the enactment of the law to comply with the needs of particular planning projects. (Article 22)

v) The town council may also require a subdivision project to include some lands adjacent to those of the owner, requesting approval from the local council if such an inclusion will provide for more rational development of that particular area. If the owners of such properties do not voluntarily participate in the project, then their lands can be expropriated. (Article 16)

E. Enforcement Provisions

The most pressing problem regarding the present subdivision regulations is that of enforcement. The proposed planning law provides several methods for strengthening such enforcement:

i) Penalties for dealing with property before subdivision approval is obtained are increased to imprisonment of up to six months or a fine between L.E. 100 and L.E. 2,000 or both (compared to a maximum fine of L.E. 10 under Law No. 52 of 1940). Penalties for other violations, such as failing to provide adequate public utilities, would also be a maximum of six months imprisonment and/or a fine of L.E. 10 to L.E. 1,000. (Article 43) In addition, they can be doubled if it is shown that these rules were purposefully evaded. (Article 47)

ii) These fines may be collected through administrative procedures rather than requiring a court order. This administrative procedure also applies to the fees required for subdivision approval. (Article 33)

iii) However, there remains the problem of sufficient budgets at the governorate level so that public utilities can indeed be provided to such areas, as the amount will only later be repaid by the developer.

FOOTNOTES
(Section B)

1 Approval by the governor is not required if the subdivision does not include modernized roads or is for purposes other than building and development. (Article 14). Thus, a part of the earlier distinction between types of subdivisions (where new roads are built and where new roads are not required) would be carried over in this new law.

2 Law No. 43 of 1979, Articles 110-112.

V. NEW URBAN COMMUNITIES

Law No. 59 of 1979

Law No. 59 of 1979 established a government agency, the New Urban Communities Authority, which is the sole governmental body responsible for the creation and management of new urban communities established outside of the boundaries of existing towns and villages. The Authority was given a number of local governmental powers as well as several types of authority not possessed by units of local government.

Its main function is responsibility for the planning and development of the basic structure and utilities of new communities until the community is transferred to a local government body by cabinet decree. (Article 13, 50) It selects sites for such communities, prepares and approves general and detailed plans and may purchase property. (Article It may expropriate necessary lands under a cabinet decree (Article 5, 6) and state-owned lands may be set aside for the community under a Decree of the Prime Minister. (Article 9)

In addition, an area of a maximum of five kilometers around the new community may be set aside by the Authority as a restricted area which cannot be disposed of or exploited or have any

building constructed upon it without the prior approval of the Authority. (Article 18) Similarly, an area of 100 meters on either side and along all public roads leading to the new community shall be reserved to the Authority and be subject also to the above restrictions.

In order to execute its functions the Authority approves all projects for the area of the new community with appeal possible to the Prime Minister. (Article 12) It is given a specific exemption from Law No. 129 of 1947 regarding public utility concessions and Law No. 61 of 1958 regarding the granting of privileges concerning the investment of natural wealth resources and of public utilities. Thus, a concessionaire may receive the more liberal terms of a period of 40 years (not 30 years) and an annual share in the net profits of a maximum of 20 percent of invested and authorized capital (not 10 percent).

Its capital shall come from assets allotted by the State and from lands set aside by the State for this purpose. (Article 31) Its resources will include state allocations, loans, grants, gifts and the proceeds from both the sale, rent and use of its rental property and the proceeds from its activities and counterpart operations or services provided to others. (Article 32)

The authority may not establish such a new urban community on agricultural land. (Article 3) In addition, government departments, local governments, general authorities and public sector companies may not dispose of desert, barren or agricultural lands located outside of the boundaries of existing towns for the purpose of subdivision into building lots without the approval of the Authority. A similar prohibition is placed on private persons who have full ownership of similar lands. (Article 46)

Further, persons dealing with the Authority receive a number of tax and investment incentives. First, they are exempt from customs duties and other import duties, as under Law No. 62 of 1974. (Article 18) Second, interest due on loans and credit facilities granted to the Authority for the financing of projects are exempt from all taxes and duties. (Article 19)

Third, repatriation of capital invested in Authority projects and works done by contractors in execution of such projects receive the same special privileges as those done under the foreign investment and free zones law. (Article 20, 21) Fourth, the occupants of real estate in the new community are exempt from the taxes on built properties during a 10 years grace period. (Article 22) Fifth, lands reclaimed within the boundaries of the new community are exempted from the land tax and all additional taxes for a 10 year grace period. (Article 23) Sixth, the profits from projects in a new community area are exempted from the commercial and industrial profits tax and from the income tax on movable assets and related charges also for a grace period of 10 years. (Article 24) Seventh, such projects are exempt from the general tax on revenues. (Article 25)

The Authority itself is a public organization with the authority to:

i) Outline policy and draw up plans and programs for the creation of new urban communities.

ii) Carry out studies, select suitable sites for such communities.

iii) Organize and coordinate all ministries and public bodies in the fields of construction and utilities to carry out such projects.

iv) To carry out the execution of such projects and to evaluate them.

v) To conclude loans and obtain grants for such projects, in addition to credits allocated to it.

vi) To promote the sale, lease or use of lands in the new communities.

vii) To divide up the new urban community into town, villages, zones and quarters and establish for each of them appropriate conditions and building types and then to issue building permits in accordance with such conditions. (Article 28)

VI. OTHER LAWS AFFECTING LAND USE

A. Industry and Commerce

There are four specific laws regarding the location of industrial establishments and regulation of their functions. Law No. 28 of 1979 and Local Government Law No. 43 of 1979 have provisions regarding industrial zones. Law No. 21 of 1958, as amended, establishes the general procedures for the granting of industrial permits. Law No. 453 of 1954, as amended, concerns occupancy of commercial and industrial establishments. In addition, Law No. 33 of 1957 regulates peddling activities.

Law No. 28 of 1979 permits the establishment of industrial zones in cities and their surrounding areas to which will be assigned all industrial uses and other unhealthy or dangerous establishments. Such establishments may not be issued permits outside of such zones. Violating businesses will be closed down. The Ministers of Public Health, Interior, Public Works, Industry and Social Affairs each have responsibility, within their own spheres, for the execution of the Law. The Local Government Law (Articles 110-112) gives authority to the governorate to determine the boundaries of such industrial zones and to form services committees to work within these zones. It also has the role of selecting and determining locations for new factories inside the governorate provided that all required public utilities are already established in coordination with the Ministry of Industry. The industrial services committee for the governorate will specify the projects to be funded from the workers' share of the profits of the companies located in the industrial zone. (Article 111). Further, the governorate has responsibility for the implementation of laws pertaining to industrial safety and for the solving of labor disputes.

Law No. 21 of 1958, as amended, establishes the general procedures for the granting of industrial permits by a committee appointed by the president after the request is submitted to the Minister of Industry. The conditions for the establishment of specific types of industry will

be set by the General Organization for the Development of Industry. (GOFI).

Finally, Law No. 453 of 1954 as amended sets the conditions for permission to construct industrial and commercial establishments in local areas. These conditions include: the right of visit and inspection by government officials; the required distance between dangerous establishments and residences; the types of construction for different types of establishments; the hygiene, water closets and other public health measures required; fire regulations and similar measures. In addition, Law No. 33 of 1957 sets the procedures for the granting of permits to street vendors which are delegated to local councils.

B. Public and Private Free Trade Zones

Law No. 43 of 1974, as amended by Law No. 32 of 1977, grants specific incentives to investments in designated free zones and establishes the General Authority for Investment and Free Zones. (Articles 30-57) The Board of Directors of the General Authority, upon the approval of the Council of Ministers, is authorized to establish public free zones while private free zones may be established by the Board of Directors alone.

1. Public Free Zones

Each public free zone is run by a Board of Directors appointed by the Board of Directors of the Authority. The Free Zone Board of Directors authorizes occupation or rental of lands located in the free zone, provides municipal services for a fee for projects created in the zone, establishes and operates ship-unloading and warehousing activities, approves or rejects submitted projects to be located in the zone and provides equipment necessary to facilitate operations and projects created within the zone. (Article 33) Licences to operate in free zones may be granted for:

i) storage of goods;

ii) sorting, repacking and warehousing; and

iii) manufacturing, assemblying and processing goods.

Goods exported from or imported into free zones are not subject to customs and other duties except as they are withdrawn from the zone for local consumption, except that goods containing local materials shall be exempted from such taxes and duties in proportion to the local material used in their manufacture and to one-half of the duties due if the local component is 40 percent or greater. (Articles 36 and 37) Projects created in the free zone shall be exempt from the provisions of existing tax laws but shall pay an annual duty of 1 percent of the value of the goods entering or leaving the free zone on account of the project or of 3 percent of the value-added realized by the enterprise. (Article 46) Payments made to expatriate employees working on such projects shall be exempted from the general tax on income. (Article 47) Commercial transactions carried out in the free zone or between the free zone and other countries shall not be subject to the exchange control laws. (Article 49) Further, employment of Egyptians by foreign organizations located in a free zone shall not require a permit from any government authority except the Free Zone Board, but shall follow the general conditions set down in the Executive Regulation for this Law. (Articles 51-56 and Decision of the Minister of Economy No. 375 of 1977)

2. Private Free Zone

Private free zones are created by the Board of Directors of the Authority exclusively for a single project and the location and boundaries of the zone are clearly delineated. (Article 30) Such zones shall be supervised by the Board of the Authority until they are affiliated with a public free zone. (Article 31) Otherwise, such zones shall have the same privileges as the public free zones.

C. Tourism Zones and Historic Areas

Law No. 2 of 1973 grants the Minister of Tourism the authority to establish tourism zones after the approval of the Council of Ministers. Such authority shall include the comprehensive planning of such zones and the setting of specifications, conditions and limitations regarding building. The Ministry of Tourism will be responsible for the issuance of permits to operate in such zones. In addition, Law No. 1 of 1973 gives that Ministry the authority to set conditions for the construction of hotels and other establishments for tourists. Such constructions shall be exempted from the taxes upon commercial and industrial profits and on moveable assets for a five years grace period and from certain customs, duties and taxes on imported materials. Local councils are not permitted to impose any taxes or duties on hotels or other tourist establishments except with the approval of the Minister of Tourism.

A 1965 ordinance further sets architectural controls for the Fatimid City of Cairo which governs construction of new buildings in the area and the structural alteration of existing buildings. It limits the height of all buildings to four stories, including the ground floor, specifies that all facades of buildings in the district be in the simplified Islamic style and limits projections of buildings to protect roads from encroachments. The ordinance is enforced by a committee consisting of representatives from the Ministries of Tourism, Awkaf and Development and of planners and archaeologists who review designs and plans prior to the granting of building permits.

D. Cemeteries

Law No. 5 of 1966 grants to the Governors the right to create new cemeteries and to pay compensation to those whose relatives are moved to create a new land use. It limits rights to plots to 10 years.

E. Ponds and Swampy Areas

Law No. 57 of 1978 permits the state to expropriate ponds, lakes and swamps when so required to fill in such areas. It further prohibits the construction of any device that will cause the stagnation or pollution of water.

F. Public Roads

Law No. 84 of 1968 sets the standards for types of public roads with regulations to be established by the Ministry of Transport. It sets

aside rights-of-way for specific classes of roads upon which development may not occur.

Law No. 140 of 1956 gives authority to the Town Council to grant permits for the occupation of roads and public squares, taking particular consideration of hygiene, planning requirements, circulation requirements, public security and aesthetics. It gives to these local authorities the power to annul permits and to adjust the permit fee based upon the duration of the occupation or the limitation of the use. (Article 9) Ministries, state agencies, local councils, public institutions, public utility concessions, charities and foreign legations are exempted from its provisions. It further sets aside a series of classes of roads and the types of activities that may be conducted on each (Presidential Decree No. 395 of 1956). All such uses must follow building and hygiene regulations. Permits are specifically required for garages, food merchants, repair shops and silversmiths and tinsmiths.

G. Sewage and Municipal Cleaning

Law No. 93 of 1962, as amplified by regulating Decree No. 649 of 1962, controls the conveyance and disposal of wastewater. It gives the state the power to construct public sewers in public or private roadways; to enforce connection of private property to public sewers; to control the quantity and quality of discharges to the sewers; to provide and maintain sewage treatment works; to prohibit or control discharges into waterways, and to penalize violations of the provisions of the law. The General Organization for Sewerage and Sanitary Drainage (GOSSD) is generally responsible for the implementation of the law with the monitoring of waste discharges carried out by the Ministry of Health. The Ministeries of Health, Public Works, Industry and Development (formerly Housing) must be consulted on proposed discharges to waterways.

Law No. 38 of 1967 give authority to governorate councils to establish cleanliness funds and tax residents 2 percent of their rent for the purpose of that fund. That council also sets conditions for obtaining permits for disposing of garbage and can impose penalties on violators.

H. Drinking Water

Law No. 21 of 1978 sets standards for the purification of water under regulations issued by the Ministry of Health and executed at the governorate level.

I. Public Establishments

Law No. 371 of 1956 and 372 of 1956 set standards of granting of permits to public establishments and public entertainment establishments respectively. A tax is set on entertainment establishments by five categories of establishments.

Law No. 66 of 1956 prohibits advertising on monuments or public installations and on public land. Each of these laws is enforced by the Town or Village Council.

VII. LANDLORD-TENANT LAW AND RENT CONTROL

Law No. 49 of 1977

A. General Provisions

Rental housing is common in Cairo, Alexandria, and other large Egyptian cities. Approximately 50 to 60 percent of urban housing is rented, much of it in two-to-five story units. Thus, the long-standing system of rent control has had important effects on housing.

The present Egyptian system of rent control began in 1944. In that year, a military regulation set current rental prices back to the rates of May 1, 1941. This was designed as a measure to help counteract wartime inflation. A similar provision had been enacted briefly during the period 1920 to 1924, to stop inflation following World War I.[1] The military regulations were codified by Law No. 121 of 1947. However, this law exempted post-1943 buildings from its terms.

Beginning in 1952, a series of laws were passed at approximately five-year intervals in an attempt to reduce rentals on new construction. These acts also reduced existing rents by 15 or 20 percent for buildings constructed during the interval since passage of the previous law.[2] Finally, Law No. 7 of 1965 made an additional reduction of 20 percent in rental values for all buildings constructed after January 1, 1944. Thus, rents for all buildings constructed between 1944 and 1965 had been lowered below the initial rate set at the time of building construction. During this period, furnished apartments were exempt from rent control, as were buildings in which individual apartments were sold as condominiums.

Law No. 49 of 1977 is the principal statute covering landlord-tenant relations and the rent control system. It replaced all previous laws regarding rent control, codified existing rent levels and established a system for determining rent levels for new buildings.

Under this law, rental prices for new buildings were increased to 10.0 percent of the construction cost and 7.0 percent of the land value at the time of construction.[3] The former cost is based on officially set prices determined by housing type as determined by a Decree of the Minister of Development and Reconstruction. (Articles 10,11)[4] Such a decree was issued immediately following the passage of this law setting such costs at L.E. 50-60 per square meter for middle income housing and L.E. 60-90 per square meter for upper income housing.[5]

In the future, rents for new buildings are to be set based upon the assessed value for land of 1974 increased by seven percent (7 percent) per year until the date of construction and the actual cost of the structure of the time of construction. (Article 15) However, in practice, the housing costs set out in the Decree of the Minister of Development have been used though they are 1977 prices. The same phenomenon occured previously in Law No. 52 of 1969 in which 1970 prices were used for the period 1970-1977 although prices per square meter rose by three times over that period.[6]

It is also difficult to raise rents on existing construction. The original rents (set by a committee on each district of the governorate

at the time of building completion) are to be revised at 10 year intervals, or at such times as improvements are made. Article 10 of Law No. 49 of 1977 states that rent levels shall be reevaluated in case of improvements made two years or more after the setting of the basic rent level or when a contribution is set for lands that are benefited by public improvements under Law No. 222 of 1955.

In addition, Article 61 of Law No. 49 of 1977 allows a landlord to increase his annual rent to twenty percent (20%) of the costs of a major improvement. However, the actual amount of that increase is limited to 50 percent of the present value of the building which was used in determining rental value. Thus, the rental increase allowed would be very small for the older (pre-1941) buildings that are most in need of major improvements.

It is difficult to raise rents, except when new tenants move into an apartment. This is an infrequent occurrence because rent control keeps the present rent level lower than what would be the market rate. Thus the rent control law presents a positive disincentive to investment in housing.

The owner would benefit in the long run if he could find a buyer for the building. However, this is difficult because of restrictions regarding demolition of deteriorating building and removal of existing tenants. For buildings containing non-furnished apartments, the landlord cannot demand that the tenant vacate the apartment, even at the end of a contract, except when a tenant changes the use of the building to non-residential, abandons his lease agreement, or fails to pay back rent within 15 days after receiving a registered letter officially notifying him of the rent owed. (Article 31) However, even then, the tenant can keep his rights under the lease agreement if he pays the rent due, plus an interest charge of 7.0 percent before the final court judgment is rendered against him.

If a building is falling down, the landlord can seek a demolition order. The tenant must be given notification and can object to granting the order. (Articles 49, 54) Even if a court order for demolition is granted, it is rarely enforced. Tenants retain their rights (including the level of the rent) through any restoration process or renovation needed to correct building code violations.[7] (Article 54) Tenants are compensated and they have priority to occupy a unit in the new building. The law also sets a fine of from L.E. 100 to L.E. 500 for interfering with the rights of a tenant. (Article 78) Finally, if the landlord did not rebuild within three months of demolition the Governor may authorize its completion at the landlord's expense. (Article 53) Such protection of tenants' rights is laudable but only accentuates the problem of encouraging maintenance and improvement of buildings where there is no mechanism for a reasonable adjustment in rent level following the improvement. Thus, the lack of incentive for maintenance is fortified by the lack of ability to make effective use of the building. For all practical purposes, such old buildings are worth almost nothing to the landlord.

B. Rent Control Avoidance

Given the above conditions, one would expect a great amount of avoidance of the provisions of the law and maximum use of the exemptions from that law. In fact, informal field surveys in the Cairo metropolitan area indicate that a majority of rental housing units are rented at rates effectively above the control rate. This result is accomplished in a number of ways, as discussed below.

1. Furnished Apartments

Under Law No. 49 of 1977 a landlord may lease as furnished apartments one unit per building that he owns with a maximum of two such furnished units in each city. (Article 39) In addition, he may rent furnished units beyond the maximum number set above as long as the rental is to foreigners or to provide accommodation to tourists. Egyptians living temporarily abroad may rent their own furnished residences. Finally, tenants may also sublet their furnished apartments. However, an effort is made to lessen this practice by allowing a landlord to raise the basic rent of the furnished apartment if it is sublet.[8] (Article 45)

2. Condominiums

Under Law No. 45 of 1977 a builder cannot sell more than 10 percent of the total number of units in a building, or one unit if the total number of units does not equal 10. (Article 68) The only exemptions are for houses built for cooperative societies and by public agencies for their members or employees. This provision was enacted to close the loophole by which all units in a new building were sold rather than rented. It is probable, though, that it has little effect, since it still seems permissible to sell a building to a cooperative or partnership made up of the potential buyers. These buyers would then have joint ownership of the building and each live in one unit.

3. Rental to Foreigners

Landlords may rent furnished or unfurnished units to foreigners, either persons or diplomatic or consulat bodies or international organizations, without following the provisions of this law. (Article 39)

4. Housing Projects Built by Arab Foreign Investors

Housing projects built by Arab Foreign investors under Foreign Investment Law No. 43 of 1974, as amended, shall be exempt from both the rent control provisions regarding the lease of furnished apartments. (Article 48)

C. Law Violations

1. Disregard of the Law

In many lower-income areas, especially in presently urbanizing areas (such as Shoubra El Kheima or parts of Giza Governorate), informal community custom appears to be the rule. Rents are set at a rate that seems reasonable to landlord and tenant. The people appear content to live as free from government intervention as possible — they simply disregard the law.

2. Key Money

Another violation of the rent control statute is the practice of accepting key money. This is a payment made by the tenant at the time he signs a lease. The money is not refunded when the tenant vacates the apartment. This money may also be paid to a previous tenant when leaving or subleasing that apartment.[9]

The origins of key money are twofold: it is a means of financing the completion of a house to be rented and is also a means of securing an economic return on the building through evasion of rent control. Thus, prospective tenants often pay both the owner of the building and the current tenant of the apartment, in order to secure lodgings or office space.

Law No. 49 of 1977 specifically outlaws the taking of key money (Article 26) and limits advance deposits to the equivalent of two months' rent. (Article 25) It states that violators of the anti-key money provision shall be punished by imprisonment of not less than three months and a fine equivalent to double the sum of money charged with reimbursement of the sum paid to the payer. (Article 77) However, these strict penalties have not affected the payment of such monies. The provision is too difficult to enforce and key money serves to a great need if new housing is to be built.

FOOTNOTES
(Section A)

1 A decree (promulgated for one-year periods in 1920 and 1921 under martial law) limited the rent for unfurnished apartments or houses to an increase of 50 percent over the rent paid in August 1914. This rent control statue was allowed to lapse in 1924.

2 Law No. 199 of 1952 reduced rents by 15 percent for buildings constructed between January 1, 1944 and September 17, 1952. Law No. 55 of 1958 reduced rents by 20 percent for buildings constructed between September 17, 1952 and June 5, 1958. Law No. 168 of 1961 reduced rents by 20 percent for buildings constructed between June 5, 1958 and November 2, 1961. Law No. 7 of 1965 reduced rents by an additional 20 percent for all buildings and rental units covered by the previous three laws, i.e. constructed between January 1, 1944 and November 2, 1961. The latter law also reduced rents by 35 percent for buildings constructed under the formula set by Law No. 46 of 1962 (see footnote 21).

3 Under previous Law No. 52 of 1969, rental prices for new buildings were based on 8.0 percent of the construction cost and 5.0 percent of the land value at the time of construction.

4 This formula is the same as the one set under Article 10 of previous law No. 52 of 1969 and also under Article 7 of its predecessor Law No. 46 of 1962 for buildings constructed after 1961.

5 A similar action occured in 1970 following the passage of Law No. 52 of 1969 but the officially set prices were then not changed.

6 The 1970 Decree set the official cost for low income housing at L.E. 8.0 - L.E. 12.0 per square meter while the 1977 cost for such housing was approximately L.E. 25-30 per square meter. See Joint Land Policy Team, Urban Land Use in Egypt. (Cairo: August 1979), Appendix, p. 54.

7 See Articles 20 and 23 of Law No. 106 of 1976.

(Section B)

8 The allowable increases are as follows: Units built before January 1, 1944 — 400 percent of the original rent; units built between January 1, 1944 and November 5, 1961 — 200 percent of the original rent; units building since November 5, 1961 — 150 percent of the original rent, and units larger constructed which were licensed when the law took effect — 100 percent of the original rent.

(Section C)

9 Subleasing unfurnished apartments is prohibited, but this prohibition is widely ignored.

VIII. REAL PROPERTY TAXATION

The present system of urban land taxation in Egypt is based upon a rental value tax. Law No. 56 of 1954 as amended, levies a tax upon the annual rental value of all occupied buildings whether they are actual rented or not.[1] There is no such tax on land, only buildings.[2] There is also a new tax on transactions involving immovable property and automobiles to be levied at the time of a sale or other exchange. In addition, Law No. 34 of 1978 puts a two percent annual penal tax on vacant land. There is also a charge for the registration of the new right to the land upon sale or transfer.[3] Thus, the tax system is basically one based on income rather than upon increases in property value or wealth.

In addition, Law No. 222 of 1955 allows the assessment of a betterment tax in cases of major public improvements. This law has been narrowly applied to situations of road improvements where expropriation is paid and compensation must be paid to dispossessed landlords.

A. Rental Value Tax

1. Assessed Value

Under the rental value tax, the rental value for different types of buildings is based upon land and building costs set under the rent control policy.[4] Thus, the rental value is only a small proportion of the estimated market rental value. Until the passage of the new housing law, it was estimated that construction costs for new low-income dwellings were approximately three times costs allowed under the rent control formula. In most cases, the initial valuation is said to be made within a year of dwelling unit completion. It may be reviewed subsequently at the request of the landlord when, for instance, major improvements are made, but it appears that such requests are not often made and that rents are seldom increased as a result of increased land value. Law No. 56 of 1954 specifies that tax assessments are to be adjusted at eight-year intervals. (Article 3) However, since tenants generally pay such taxes (although

they are collected from the landlord) and since an increase in assessment would lead to an increase in rent, there is a strong incentive not to increase such assessments.

2. Tax Rate

The tax rate ranges from 10 percent from room rentals of less than L.E. 3.0 monthly to 40 percent for room rentals of more than L.E. 10 monthly.[5] This tax has been abated for monthly room rentals of L.E. 5.0 or less,[6] which includes perhaps 30 percent of the housing stock of Cairo. The proposed housing law would exempt monthly room rentals of L.E. 8.0 or less from taxes. Thus, although this is a tax on income, in practice not much is collected as a result both of rent control and of the large number of exemptions from taxation.

3. Administrative Structure

Although the appropriate ministries (Finance and Housing and Reconstruction) issue policy guidelines and set regulations governing rent control and rental value taxation, the implementation of these functions is decentralized. Each of the major urban governorates is divided into districts (in Cairo there are seven, in Alexandria there are four) which have a rent control committee and a taxation and revenue office. These function semi-autonomously, although the latter offices transfer all of the funds collected by them to the revenue department of the governorate.

B. Additional Taxes

In addition to the basic rental value tax, there are six other taxes upon rents: the national defense tax, the national tax, and the public services fees paid to the municipality. These taxes together range from 13.2 percent for monthly room rentals of less than L.E. 3.0 to 23.7 percent for monthly room rentals of more than L.E. 10.0. Most of them have presently been abated for monthly room rents of less than 3.0, so the effective rate of this additional taxation range from 6.5 percent to 23.7 percent. The proposed housing law would also abate these taxes for room rents of L.E. 5.0 or less monthly.

These fees are normally paid by the tenant, as is electricity. Prior to Military Regulation No. 4 of 1976, water charges were paid by the landlord. However, that regulation placed the burden for paying such charges on the tenant, although the landlord is still responsible for the proper maintenance of water tanks, pumps and pipes. (Article 10-11)

C. Transactions Tax

A 1979 law placed a tax upon sales or other transactions involving immovable property and automobiles to be levied at the time of the transaction. The tax rate varies from 1.0 percent to 12.0 percent of the sale price. The government has the power to take the property at the stated price which is designed to discourage under reporting of that price.

D. Land Registration Charge

All land rights in Egypt, including mortgages, must be registered or they are void.[7] Thus, such rights must be reregistered upon sale or transfer. The fee for such registration ranges from 2.0 percent to 7.0 percent of the sales price[8] plus a fee of L.E. 2.0 as an application fee. This charge is paid by the buyer and is normally the only fee paid on the transfer of land.

E. Betterment Tax

Law No. 222 of 1955 permits municipal councils to levy betterment charges to help pay for enlargement of public roads, drainage projects, bridge construction or renovation projects and other projects as set by the Council of Ministers. (Article 2) In practice, this law has been almost exclusively applied to road widening projects in which land must be expropriated. Thus, the betterment charge is considered a means of raising the revenue necessary to pay compensation to displaced landlords.[9] This charge is not paid at the time of the improvement, but only at the time of transfer of property ownership. The new owner must get a certificate from the Department of Planning and Reconstruction in the governorate that no improvement tax is required to be paid before his right of ownership will be registered. This method alleviates the financial burden to the home owner, until such time as he will have the money to pay the charge, but eliminated any ability to make such improvement projects self-financing.

FOOTNOTES

1 Agricultural land is taxed under a separate system. Law No. 113 of 1939, as amended. This tax is levied on the basis of the annual rental value of all agricultural land which is or can be cultivated. The tax rate is 14 percent. Owners of less than three feddans are exempted. Once agricultural land is included within an urban boundary, it is no longer taxed as agricultural land. This is part of the system by which agricultural uses are ignored in urban areas. This assists rapid urbanization of such lands.

2 However, the existing tax upon industrial and commercial profits applies to business firms and is levied annually at 39.7 percent of the net profits of all business transactions, including sales of real property. The first property transaction within a five-year period is exempt from the tax, so it does not generally apply to home owners. Law No. 14 of 1939, as amended. In addition, an individual income tax is levied upon both income from sale of property and income from property rentals. With regard to income from the sale of property, it is assessed on the same basis as the tax upon "industrial and commercial profits" but at sharply progressive rates ranging from 9.0 percent to 95.0 percent. Law No. 46 of 1978.

3 Law No. 18 of 1923, as amended.

(Section A)

4 Law No. 52 of 1969. The rental value at the time of construction is now set at 10.0 percent of the official construction cost plus 7.0 percent of the land value (new housing law). The only exemptions are buildings owned by the state, consulated, public utilities, buildings on waqf land and serving social and religious purposes,

non-furnished cemetery buildings and agricultural buildings that are not rented (Article 1).

5 See Law No. 129 of 1961. The tax is figured on net income equal to 80 percent of gross rental income. Thus, 20 percent of gross income is allowed as a deduction for expenses.

6 Law No. 46 of 1968.

(Section D)

7 Law No. 18 of 1923, Article 1.

8 The present fee structure is as follows: L.E. 1,000 or less 2.0 percent; to L.E. 3,000 4.0 percent and over L.E. 4,000 7.0 percent.

(Section E)

9 This attitude is a reflection of the traditional Islamic view that owners of property abutting a public thoroughfare "own" that property and are responsible for its maintenance, as long as their exercise of their rights does not infringe upon the rights of other owners along the street. This concept is quite different from the western view that encroachments along public ways are prohibited unless specifically allowed. It leads to the view that the neighbors are responsible for paying compensation for the taking of such rights when public action enhances their own rights. See Janet Abu-Loghod, Cairo: 1001 Years of the City Victorious, p. 68.

IX. LAWS REGARDING URBAN LAND RIGHTS

A. Historical Background

Rights and powers over land in Egypt are based on a mixture of age-old customs, Islamic laws, and influences of the French and British legal systems. Private land ownership is a phenomenon of the last century.

From the time of the pharaohs until the nineteenth century, land in Egypt generally belonged to the state. The imperatives of being dependent on irrigation made it critical for the state to be able to control the use of land. This view was reinforced by Islamic law. At the time of the Moslem conquest of Egypt in the seventh century, only land and houses in towns could remain as private property (mulk). All other lands were considered to be spoils of war and property of the Moslem conquerors, i.e. property of the caliph.

Fellahs (peasants) had the right to cultivate particular areas and to pass that right on to their children. They had no rights of ownership as such. However, at any period when the authority of the ruler lessened, his major lieutenants would gain actual power over lands they managed for the state and would be able to keep all revenues collected as well as pass the lands on to their children.

This situation was particularly prevalent in the seventeenth and eighteenth centuries during the decline of the Ottoman Empire when the appointed Pasha of Egypt allowed development of the iltizam system. Under this system, land was assigned to individuals by public tender in exchange for a sum of money and the promise to pay an annual land tax. In the course of time, these iltizam lands came to be held for life. Later, they could even be sold and inherited. During this period, a great deal of land came under the waqf system. Under this sytem, land was dedicated for religious purposes so that holders of iltizam lands could secure incomes from these lands for their heirs with the land exempt from property taxation.

This system was ended in the early nineteenth century by Mohammed Ali, the founder of modern Egypt. He abolished the iltizam system and confiscated much of the agricultural land that had illegally become waqf land through that system. Thus, state ownership of land was once again generally restored in Egypt, except for small pieces in private ownership (ib'adiyya, mulk) which were mostly in cities and except for waqf lands legally held for religious or charitable purposes (most of which had been bestowed by the sovereign).

Mohammed Ali also began the process that led to creation of the modern rights of private land ownership. This movement started as an effort both to introduce land ownership for farmers and to provide for direct collection of property taxes by the state.

A cadastral survey was carried out in which all land was registered in the name of the village where it was located. The members of the village were held collectively responsible for payment of the property taxes.

In 1829 individuals were granted ownership rights to uncultivated lands (ib'adiyyat) that had not been registered. In 1842 people were allowed to sell or transfer these lands. In 1846 individuals were allowed to pledge lands they cultivated (kharajiyya, miri) and to transfer them if they had a certificate from the head of the village (shaikh al-balad) or signed in the presence of witnesses.

In 1858 the land Law of Khedive Said allowed cultivators ownership of their lands if they had paid taxes continuously for five years. Land could be mortgaged or sold. Land could be leased for three years and extended subject to local authority review. Such land could be inherited according to Islamic law, i.e. by female heirs.[1] However, such ownership was not yet absolute.

Owners of miri lands were considered to have dominion/seisin (raqaba) over such land. They had no right to compensation if the land was expropriated. They could not bequeath property by will or bestow it in waqf. The growth of the market system in agriculture was favorable to private ownership, and these final rights were granted by the end of the century.[2]

The establishment of private land ownership did not, however, lead to massive ownership of land by small farmers.[3] Mohammed Ali and his successors granted large estates of both cultivated and uncultivated land to friends, advisors and to bedouin sheikhs who agreed to settle down and forsake their wandering ways.

Some of these estates were apparently formed by taking land from fellahs who had accumulated tax arrears or whose land was foreclosed after introduction of a mortgage system. Other fellah lands were abandoned by owners escaping the corvee, military conscription, or tax payments. Much land was registered in the name of the head of the village. Finally, foreigners came to own large estates through purchase, foreclosure and through creation of land and mortgage companies. In 1901 foreigners held 11 percent of the cultivated area of Egypt, and foreign estates represented 23 percent of all large properties.[4]

The situation remained largely the same until the Revolution of 1952. The Agrarian Reform Act of 1952[5] effectively opened up land ownership on a large scale. However, it was only partially successful in reducing inequality.[6] In addition, nationalization of holdings by the Mohammed Ali family and by large companies, and abolition of waqf ahli made some changes in urban areas. Resentment against land holdings by foreigners culminated in the prohibition of such holdings, except under specified conditions.[7]

Basically, a foreigner may not acquire land, except up to 1,000 square meters as a personal residence. In addition, Arab investors who qualify under the Foreign Investment Act of 1974 may own land, if that land is to be used for construction purposes.[8] Thus, some inequities have been removed.

The above history is necessary to understand present land ownership patterns in urban areas. It is perhaps most helpful in understanding the pattern found in urbanizing areas at the city's fringe. A greater proportion of land in Cairo and Alexandria has been held in private ownership. In addition, such cities, especially Cairo, have been under closer control by the ruler. Thus, much of the land was held by his family or immediate associates or given by him in waqf for religious purposes.

The greater proportion of waqf land has made urban development more difficult, because of restrictions placed on the use of income from such lands. However, the basic pattern is the same.

B. Present Situation of Land Ownership

Against this historical background should be considered the three current basic types of land ownership in Egypt; private, public ownership and waqf ownership (mortmain). History demonstrates the predominant role played by public ownership and public control of land. This empasis has continued to the present Egyptian constitution of 1971.

The constitution states that property is subject to the peoples' supervision and is protected by the state. (Article 29) Private property must have a social function and be used to serve the national economy. Thus, it may not be used in a manner incompatible with the general good of the people. (Article 32) These provisions give broad latitude to the enactment of legislation and regulations that control land use and land development.

1. Private Ownership

A vast majority of the land in urban areas in Egypt is now under private fee simple ownership (mulk). Such ownership has much the same bundle of rights and obligations as under Anglo-American law of the Napoleonic Code. However, several differences which are important when considering land use are discussed below.

a. The Right of Preemption (Shuf'a). Under Article 936 of the Egyptian Civil Code, a neighboring owner has the right to substitute himself in the place of the purchaser in a transaction for the sale of real property if the land is reserved for building or has a building on it, if the land of the neighbor adjoins the land being sold on two sides and its value is at least one-half of the value of the land being sold, or if there is an easement or right of servitude in favor of the neighbor over the land being sold or in favor of that land of the neighbor.[9]

Thus, free alienaton of land, especially for speculative purposes, could be made difficult. It has been proposed that the government be allowed to step into the shoes of such a neighboring owner in order to better control use of urban land.

b. Inheritance and Family Joint Ownership (Musha). The Islamic law of inheritance, as modified in Egypt,[10] encourages the fragmentation of land holdings through the restriction of the disposition of land by will to a maximum of one-third of the estate and the distribution of the estate per capita among eligible parties rather than per stirpes.[11] Thus, ironically, the increase in number of owners of agricultural land, by placing that land under the Islamic law of inheritance, has violated the age-old tradition that the right of cultivation went to the eldest son or able male heir.

To discourage such fragmentation, the Civil Code encourages family joint ownership of land. (Article 851-855) Such agreement must be made in writing for a period of a maximum of 15 years. If no period is fixed, each co-owner can withdraw from his share six months after he gives notice to that effect to the other co-owners. No partition of that land can occur as long as the agreement is in force. No sale of a share can be made to a non-family member without agreement of all co-owners. If such a person is allowed to buy a share, he merely becomes a partner in the family's joint ownership. (Article 853)

It does not appear that such formal agreements are often made. However, land is often kept under the management of a single family member rather than being formally divided, especially in rural areas. Thus, land may appear to be owned by one person but indeed be owned by many members of a family. It is, therefore, often difficult to purchase land in urbanizing areas because one must find all of the owners and get their agreement to the purchase.

c. Separation of Land Ownership from Ownership of a Building or a Storey of a Building. Under civil code, there is no difficulty in distinguishing between ownership of land, ownership of the building on that land, or ownership of different storeys of the same building.[12] The privilege to build an upper storey on an existing building adheres not to the owners of the land but to the owner of the building, although the building may not be heightened so as to injure a lower storey.[13] Thus, low-income

persons can expand their houses, even if they do not own the underlying land upon which the house is situated.

d. Right of Prescription/Adverse Possession. Under the Egyptian Civil Code, the possessor or user of a plot of land can gain ownership of that land, if he occupies it continuously for 15 years and if the owner does not assert his rights.[14] Thus, it would be possible for a squatter to gain legal rights after that period, de jure as well as de facto. Of course, in practice the government and the owner do not often make active efforts to make him leave the land.

2. Waqf (Mortmain) Land

Waqf is a second type of non-public land ownership. It is fairly prevalent in urban areas and has played an important role in urban land development over the past 100 years, although that role is greatly diminished today. It is a peculiar institution of Islamic law that is similar to the right of mortmain under which the Roman Catholic Church held large amounts of land in Europe during the Middle Ages. It is also similar to the modern concept of trust.

A waqf is the setting aside of property, generally real property, for charitable or religious pruposes. The waqf is established in perpetuity and is irrevocable. The person establishing the waqf loses his ownership in the property. Its ownership is generally held to be by Allah rather than by any living person. Such property is now administered under the authority of the Ministry of Awqaf.

At present, the amount of urban land held under waqf has declined, and the powers of te private administrator/trustee have been taken over by the Ministry of Awqaf. However, the changes that have reached this result have only occurred in the past 30 years. The legacy of the past remains in the need to have the approval of the Ministry of Awqaf to develop or improve such land and in the question of whether it can ever effectively be taken for public purposes or must always be administered by that ministry. Thus, a review of the history of waqf and its importance in the history of Cairo and Alexandria is necessary to understand the present situation.

As the concept of waqf developed, there were two classes of waqf ownership: waqf khairi and waqf ahli (known as waqf dhurri or waqf adi outside Egypt). The income of a waqf khairi is immediately devoted to religious, cultural or charitable institutions. The income of waqf ahli is assigned to a number of specified persons, generally relatives and descendants of the benefactor. Only after the death of all named persons will the income go to the religious, cultural or charitable institution named by the founder.

i) Waqf khairi has played a major role in financing mosques, educational institutions, clinics and hospitals, including the world famous university of El Azhar and many Cairo mosques. Thus, it has played a major part in the culture and modernization of Egypt.

ii) Waqf ahli, on the other hand, has been a means for large landowners to leave property for the benefit of their descendants without having to pay property taxes, to preserve the property as a single unit and to limit the number of legal heirs who would receive benefit from it. The last point is not a general rule, but has been applied on occasion. Such land could not be sold to satisfy debts incurred by the beneficiaries. The property could not be mortgaged because its inalienable title could not be pledged against the loan. The amount of such waqf ahli land increased in the late nineteenth century both because of increased endowments of the Mohammed Ali family and the fact that an increased amount of private ownership meant that much land was for the first time eligible for transfer to waqf status.

iii) Waqf ahli land created major problems for urban development[15] because it could not be mortgaged and because profits, after maintenance and administrative expenses, had to be distributed among the beneficiaries instead of being reinvested in the property. There was no incentive for long-term preservation and increase in property value.[16] Its abolition in 1952[17] led to a great increase in the rate of land development in Cairo and other cities.

iv) Waqf khairi has not been abolished, but more and more control and administration has been given to the government, both at the national and governorate levels. In addition, there has been pressure on the Ministry of Awqaf to use such lands for social purposes. Low-income housing projects have been constructed at El Marj and Waqf City. However, in the older parts of Cairo, a large proportion of land is still held under waqf and under the administration of the Ministry of Awqaf and the semi-autonomous Awqaf Authority which is responsible for managing Awqaf lands in a commercial manner, to achieve a return on investment and to invest income from such lands profitably. Thus, that ministry must be included in any discussion regarding urban land development and must be encouraged to carryout such redevelopment itself.

3. Public Ownership of Land

The third major type of land ownership in addition to fee simple and waqf ownership is the public ownership of land. There are two types of publicly-owned land in Egypt:

a. State Domain. State domain originally referred to the desert and other uncultivated or unclaimed land which could become the property of anyone who settled and worked it. However, this meaning was gradually lost, as a result of the need for official permission to settle on such lands, the registration of these lands as state property, and their inclusion with other lands owned by the state under a central administration.

Such state lands include lands expropriated from the former royal family after the 1952 Revolution. Reclaimed land is actually under the authority of the Ministry of Finance which collects rents and taxes due on that land.

Such land is sold through the mortgage bank (Credit Foncier). Desert land is under the control of the semi-autonomous Desert Reclamation Authority which has the authority to manage and sell it. It is easily transferred to a governorate or to the Ministry of Housing for specific development purposes, such as creation of a new city. At the present time, such state lands in urban areas are administered by the governorates.

b. Public Domain. Public domain is land owned by the state that serves as a public utility. It includes public roads, railways, land covered by military installations, the irrigation network, navigable rivers and streams, and state-owned lakes. For example, areas allotted for public ways, squares, parks, and other public uses, and public utilities within a subdivision become part of the public domain land.

The major distinction between state domain land and public domain land is that state domain may be transferred to private individuals while ownership of public domain may not. In addition, private individuals cannot gain ownership of public domain lands through continuous occupation over a set period of time (the right of prescription). Thus, such lands belong to the state without possibility of alienation, as long as they are being used for such purposes. Publicly-owned lands that may be used for land development purposes are, thus, state domain lands.

C. Land Registration

The land registration system in Egypt was adopted from the French. It was originally introduced by Mohammed Ali as a means of effectively increasing revenues from property taxes. Initially land was registered in the name of a village, but in the late nineteenth century individual property ownership brought registration of land by individuals.

All major rights to land must be registered with the local district office of the Land Registration Division of the Ministry of Justice or they are void both between the parties and as to third parties.[18] These rights include mortgages and tax liens as well as transfer of property by sale or inheritance. The fee for registration is a major cost to the buyer on the sale of property. It ranges from 2.0 to 7.0 percent of sales price, depending on that value.[19]

The present system used for registration is the grantor-grantee index introduced by the British, when they made a complete cadastral survey of the country at the beginning of this century.[20] However, the government is now changing to a system by which owners can be identified by lot number and address rather than only through knowing his name or his grantor's name. This sytem of mapping has been introduced into Tanta and Fayoum and is expected to be extended to other governorates in the next 10 years.

It is difficult to evaluate how much land is actually registered, although most land in the older areas of Cairo appears to be registered in some name even though it may be illegally occupied. However, the high cost of registration means that much land in the newly urbanizing areas is not registered. Since registration is necessary to create a legal right to land and thus also necessary for loans for housing finance purposes, some means must be found to create a more efficient land registration system in the near future.

Government agencies in Egypt have sufficient authority to develop publicly-owned lands in urban areas and to take privately-owned lands for public purposes in order to accomplish orderly land development.

1. Expropriation

There are two laws regulating the expropriation of land: Law No. 577 of 1954 (the general law of expropriation) and Law No. 27 of 1956 (expropriation of properties in urban areas for specific planning purposes). Under each of these laws, the general welfare purpose for which land can be taken is broadly construed. Thus, there is not the problem often found with many such laws where the provisions are used to benefit private commercial purposes. However, adequate compensation must be paid to the property owner, as prescribed by the Egyptian Constitution.[21]

a. Law No. 577 of 1954. Under Law No. 577 of 1954 the public purpose for which the land will be taken must be stated in a decree issued by the governor.[22] This decree must also contain a general plan for the project. (Article 2) The Department of Housing and Reconstruction establishes a committee, consisting of a representative of that department, a member or representative of the local council, and the tax collector. That committee is responsible for executing the expropriation procedures and for setting the amount of compensation to be paid.

Objections regarding the amount of compensation to be paid will be settled by a committee, consisting of a judge (appointed by the chief judge of the district court) as chairman, a member of the Survey Department, and a member of the Department of Housing and Reconstruction (which is responsible for carrying out the expropriation). The decision of that committee can be appealed to the district court. (Articles 13-15)

In addition, there are provisions establishing a procedure for temporary expropriation, if necessary because of flooding, epidemic, or other emergency. (Article 17) Such temporary occupation can last for a period of up to three years. Any longer period requires a permanent taking. (Article 18) Compensation must be paid for that use.

Sections regarding setting the amount of compensation and the period for payment of that compensation are favorable to the government. Compensation for increased value because of development is not paid if the expropriation occurs within five years of the beginning of project execution. (Article 20) In addition, the government can delay payment for up to five years, suffering only a penalty of paying four percent interest on that principal. (Article 23)

Finally, the government is allowed to over-expropriate when required, in its opinion, to realize the project or to eliminate incompatible uses. (Article 22)

b. Law No. 27 of 1956. Law No. 27 of 1956 sets up a similar procedure for

expropriation of particular areas for urban renewal purposes. The expropriation procedure is carried out by the same committee as that which executes the provisions of Law No. 577 of 1954. The committee must proceed within a two-year period of the declaration stating the need for the land and its public purpose. (Article 6) Payment may be made in terms of developed land as well as of money, so that the owner can receive some of the increase in land value resulting from development. (Article 13) Thus, a land adjustment procedure could be instituted in existing residential areas without requiring changes to existing law regarding the public taking of land. The developed land must be sold by public auction, and that sales price will set the amount of land that the former owner will receive as compensation.[23] (Article 19-21)

2. Powers to Use State-Owned Land

The government has broad powers to use state-owned land under Law No. 99 of 1902, as amended. It may develop such lands itself or rent or sell them to private developers under certain specified conditions.

Local Government Law No. 43 of 1979 delegates to the governorate the authority to set rules for the disposal of lands for building owned by the state and local government units. It further gives the governorate the right to set regulations for the disposal of agricultural lands within its boundaries and for the distribution of reclaimed land after it is provided with public utilities. Such regulations may also define cases in which such land may be disposed of without payment to encourage reconstruction and housing activities and for land reclamation purposes. (Article 28) Priority in disposal of the land shall be given to natives of the governorate who live and stay there. The governorates also are empowered to buy land, although in practice their budgets most often exclude that option.

In addition, Law No. 549 of 1976 permits governors to sell state domain land within their jurisdicitons.[24] Such sale can be made to public sector companies, newspapers, or other entities serving public purposes, as long as there is approval by the minister concerned. Thus, industrial projects must have the approval of the Minister of Industry. Arab foreign investment projects must have the approval of the General Authority for Foreign Investment. Other projects with public welfare purposes must have the approval of both the minister concerned and the Minister of Finance. In addition, the governor may sell land to owners of buildings built illegally on publicly-owned land after November 12, 1952, as long as the sales price is equal to the present market value of the land. Thus, the governorates have great flexibility to influence land development by selling land to public companies, or even to private entities, in order to accomplish public development purposes.[25]

Further the Ministry of Development and Reconstruction has great authority to obtain state-owned land under the control of other ministries, especially the military, the Desert Authority and the Ministry of Awqaf, for urban development purposes. The authority for the transfer of desert land was used for the new cities of Tenth of Ramadan and Sadat City and has been strengthened by the specific powers over such land granted to the New Urban Communities Authority, headed by the Minister, established under Law No. 59 of 1979.

Also, the Ministry of Awqaf is not as autonomous as it has been in the past (as related above). There is now a joint committee, with representatives from the governorate, the Ministry of Development and Reconstruction and other interested parties to supervise the use of waqf lands. Law No. 180 of 1952 required the Ministry of Awqaf to invest income from the lands it administered in projects with socially desirable purposes. Finally, a Decree in 1963 called upon the Ministry of Awqaf to turn over all real estate properties under its jurisdiciton to the governorates in which they were located. If lands were to be used for public purposes, the governorate was to recompense the Ministry of Awqaf up to 50 percent of the vaue of the property. If such waqf khairi properties were not required for public purposes, then the governorates were to recompense the Ministry for 90 percent of the value and keep 10 percent for administrative expenses. This order does not appear to have been effectively implemented, but it has led to greater cooperation between these bodies.

A more difficult situation is found with regard to urban lands controlled by the military. At present, 30,000 feddans in Cairo are occupied by mostly obsolete military installations, including 1,000 feddans at the Almaza Air Base (which is presently planned for development). A more effective formal means for the transfer of such land is required. Such a plan was worked out in the early 1960's for development of Nasr City where the Ministries of Development and Defense were jointly involved in the planning.

Thus, the Ministry of Development and Reconstruction has great authority to control state-owned land and to sell it at a nominal price or to free it for the purpose of encouraging development. In most cases, such transfers have been either a delegation of authority over certain state-owned lands to the governorate or a sale of land to specific public-sector development companies.

Finally, there are 10 public sector housing and development companies under the general jurisdiction and authority of the Ministry of Housing and Reconstruction. They are responsible for the planned communities of Nasr City, Maadi and Heliopolis as well as for the public housing program. These authorities can buy and sell land. Thus, they can control land development both before and after construction is completed. However, they are restricted in the use that can be made of revenues obtained from the sale or rental of developed properties. When most Egyptian companies were nationalized during the 1961 to 1963 period, it was specified that their profits must be returned to the general treasury instead of being retained for future development, with some allowance for required current expenses.[26]

FOOTNOTES
(Section A)

1 In 1855 inheritance had been provided for male heirs (and under certain conditions to female heirs where there were no male heirs).

2 This narrative is largely taken from Gabriel Baer, A History of Landownership in Modern Egypt, 1890-1950 Oxford University Press 1962) especially pp. 1-12.

3 Mortgages were unknown in Islamic law which did not conceive of a real property security without the requirement of delivery of possession. The system of hypotheque was imported into Egypt from French law.

4 See Robert Mabro, The Egyptian Economy, 1952-1972 (Oxford) University Press, 1974 p. 59.

5 Law No. 178 of 1951 limited agricultural land holdings to 200 feddans for individual and 300 feddans for a household, if 50 feddans were distributed to each of two children. Law No. 127 of 1961 reduced the maximum permissible estate to 100 feddans per individual. Law No. 50 of 1969 reduced that estate to 50 feddans per individual and 100 feddans per household. Land in excess of that amount was to be requistioned by the government over five years and paid for by government bonds. The government then redistributed the land to individual farmers in parcels of 2.0 to 5.0 feddans each, to be paid for over 30 years. It also sought to promote creation of new agricultural cooperatives to provide new owners with technical assistance, credit and marketing facilities. Effective agricultural cooperatives have yet to be realized on a broad basis. See Doreen Warriner, Land Reform and Development in the Middle East (Oxford University Press, 1957) and Gabriel S. Saab, The Egyptian Agrarian Reform, 1952-1962 (Oxford University press, 1967).

6 Between 1952 and 1970, 342,000 families were granted 817,000 feddans of land by the Agrarian Reform Authority. The percentage of cultivated land held by owners of less than 5.0 feddans rose from 35.5 percent to 57.1 percent. The very large estates disappeared. However, holdings of 50 to 200 feddans were relatively constant in terms of acreage, despite the reduction of the ceiling to 100 feddans and then to 50 feddans. Their share in the total area dropped only from 14.5 percent to 12.6 percent. Thus, a dual structure of large farms and small-family farms remains, although the size of the larger land holdings is smaller. See Robert Mabro, The Egyptian Economy, 1952-1972 (Oxford University Press, 1974), pp. 68, 72-73.

7 Law No. 81 of 1976; Decree No. 59 of 1977.

8 Law No. 43 of 1974; Article 19.

(Section B)

9 This right is precluded if the person who is entitled to it has himself made a bid for the property. In addition, it is easily evaded. One such device is for the owner to make a charitable gift of one room to a prospective buyer who thereby becomes a co-owner. The buyer is then sold the rest of the house.

10 See Law No. 77 of 1943 (inheritances) and Law No. 71 of 1946 (wills). Law No. 77 of 1943 allowed more flexibility with regard to distribution of the one-third bequethable by will so that a widow or needy heir or non-heir can be given all or part without the need of the consent of the other heirs as under orthodox Sunni Law (Article 37).

11 Under the rule of per stirpes, each child of the descendant would share equally and children would step into the place of their father or mother as if the latter were still alive. The problem with this rule under the Islamic law of inheritance is the unequal position of sons and daughters and the unfortunate results that could be reached. Thus, a daughter of a son would take two-thirds of an estate while her aunt, the daughter of the deceased, would only take one-third (assuming the deceased had only two children and that his wife was already dead).

12 Civil Code, Articles 856-861.

13 Civil Code, Article 861.

14 A good-faith purchase can gain ownership rights in five years (Article 969). Ownership rights on waqf land require 33 years (Article 970). An individual can gain immediate ownership rights to uncultivated land, but he loses those rights by non-cultivation or use for five consecutive years during the first 15 years following acquisition of ownership (Article 874).

15 See Janet Abu-Loghod, Cairo: 1001 Years of the City Victorious, pp. 76-79, 154-158, 223.

16 This generalization should not be taken too far, as there were three types of rental agreements for land under waqf which could lead to more effective use of land: 1) Hikr — Lease for a period of up to 60 years. The recipient undertook property improvements and an annual rent that varied according to current property values (Civil Code, Articles 999-1014). Such rights were terminated in 1967. Law No. 92 of 1960; Law No. 32 of 1965. This right was the most usual one for renting urban commercial establishments. 2) Idjaratein — a form of hikr created for buildings in need of repair. The leasor pays immediately a sum of money equal to the value of the building and then an annual fixed rent based only on the value of the land (Civil Code, Article 1013). 3) Kholou-el-intifaa — Lease of property for an indefinite period of time for payment of an annual rent. The lessee undertakes property improvements. The waqf may retake the property at any time, after due notice, as long as it pays the lessor for his expenses (Civil Code, Article 1014).

17 Law No. 180 of 1952.

(Section C)

18 Law No. 18 of 1923, Article 1.

19 The fee is two percent for L.E. 1,000 or less; four percent for L.E. 3,000 and seven percent for L.E. 4,000 or more. In addition, there is an application fee of L.E. 2.

20 See H.G. Lyons, The Cadastral Survey of Egypt, 1892-1907 (Cairo, 1908). Under a grantor-grantee index, one cannot locate an owner of property without knowing his name or the previous owner's name.

21 Egyptian Constitution, Article 34.

22 This authority was delegated to the governor by the Minister of Development and Reconstruction.

23 Such owners will be given priority to buy at the base price, if they are owed compensation equal to at least one-third of the base value of the property that they wish to buy (Article 20).

24 This law follows upon a series of prior legislation. Law No. 29 of 1958 specifies that state-owned properties can be sold or rented at a low price or rent to realize a public purpose. Such action requires a Presidential Decree if the property has a value of L.E. 1,000 or more. Such nominal rentals cannot exceed a period of 30 years. Law No. 100 of 1964, as amended, states the conditions for sale of desert and agricultural lands. Regulation No. 471 of 1967 allows sale by the state of reclaimed land, unoccupied inheritances, land owned or administered by insurance companies, public buildings, or sequestered estates when the value is not over L.E. 20,000.

25 This power is limited somewhat by Local Government Law No. 43 of 1979 which states that the governorate may not dispose gratuitously of any of its fixed, or movable assets for a nominal charge for the purpose of achieving a public benefit if the value is greater than L.E. 50,000 in any fiscal year, unless such disposal is made to a ministry, government agencies or public authorities, without the approval of the Council of Ministers. (Article 14) Similar limitations with lower maximum levels are set for the lower levels of government for disposal to other than government bodies:

a. District (Markaz) - L.E. 10,000 alone and L.E. 50,000 if with the consent of the governorate popular local council (Article 42).

b. Towns - same as Districts (Article 50).

c. Villages - no such authority.

26 In general, 20 percent of revenues can be kept for new development.

X. PRESENT LEGAL SITUATION FOR PRESERVATION OF ARABLE LAND

Over the last decade several steps have been taken to discourage such conversation of agriculturally productive land. However they have not been effective due to a number of reasons discussed below.

It is important to note that there are actually five categories of arable land to be considered in this connection:

i) Agricultural land outside of town boundaries.

ii) Agricultural land within the town boundaries.

iii) Agricultural land under the control of the New Urban Communities Authority.

iv) State-owned agricultural land.

v) Reclaimed agricultural land under the national Land Reclamation Program.

A. Legal Framework

Law No. 59 of 1973, amending Basic Agricultural Law No. 53 of 1966, prohibits the erection or construction of any buildings or establishments on agricultural land without the express permission of the Ministry of Agriculture. This prohibition applies to all lands outside the boundaries of towns.

Within towns, the use of such lands may be changed as long as the land is used for the benefit of the town itself or for buildings which will serve as homes for its owner, within guidelines set by the Cabinet. (Article 2, adding Article 107 (2) to Law No. 53 of 1966) It is further prohibited to issue permits for the subdivision of such agricultural lands except with the approval of the Ministry of Agriculture.

Violators of these provisions are subject to imprisonment or to a fine from L.E. 200 to L.E. 500. This sentence shall include an order for the demolition of whatever buildings have been erected at the expense of the violator. This penalty is not to be suspended for any reason.

In addition, this amending law also contains a specific provision prohibiting the digging up of agricultural land and the transfer of agricultural soil to be used for the making of bricks or for other purposes except with the permission of the Ministry of Agriculture.

A decree is to be issued by the Minister of Agriculture listing the conditions for the granting of such licenses to dig, what type of digging may be done and the areas where such digging is permitted. The penalty for the violation of this division is either imprisonment or a fine of from L.E. 200 to L.E. 500 per feddan, or part of a feddan. This penalty is also not to be suspended for any reason. (Article 1, adding Articles 71 (2) and 106 (2) to Law No. 53 of 1966) Law No. 59 of 1978 further amended the Basic Agricultural Law to strengthen the penalties for violation, including jail sentences for offenders. It also specifically prohibited large-scale development on agricultural land with the exception of land acquired by the government for public use and agro-industry projects. This prohibition has already resulted in the cancellation of several proposed projects being planned in Giza Governorate.

Further, a number of strong provisions regarding the use of agricultural land are contained in the New Urban Communities Law (Law No. 59 of 1979). That law not only prohibits the establishment of new towns on agricultural land (Article 3) but further prohibits all government bodies, private agencies, and individuals from subdividing any agricultural land for building purposes which is located outside of the boundaries of existing towns, except with the express approval of the New Urban Communities Authority. (Article 46) In effect, this latter provision extends the prohibitions of Law No. 59 of 1973 to land under the control of this Authority.

B. Administrative Procedures

In practice, these provisions have not been enforced. Partly, this is due to the lack of

budget and staff of the Ministry of Agriculture at the local level and to the uncertain position of the local departments of ministries following the passage of the new local government law (Law No. 43 of 1979). In addition, there is lack of support for the impositions of the penalties prescribed in the legislation in the courts. Finally, all agricultural land is treated the same. There is no priority of areas in which enforcement will be attempted most vigorously given the lack of budget and staff to carry out such a program and local opposition to the imposition of the prohibition.

1. National Level Enforcement

The Ministry of Agriculture has established a committee structure at both the governorate and national levels to enforce Law No. 59 of 1973. The Higher Committee at the national level is headed by the First Under Secretary of Agriculture and has representatives from the Ministries of Planning, Housing and Irrigation.

The committee at the governorate level is headed by a representative of the First Under Secretary of Agriculture and has representatives from the Ministries of Irrigation and Housing. Requests for building and subdivision approval are initially made at the governorate level and then sent to the national level for final approval. At the national level, there is a section under the General Secretary of the Ministry which processes and records such permission. However, very few permissions are granted with the exception of those for the construction of agricultural buildings closely tied to agricultural production, such as chicken houses. Permissions for the use of agricultural soil for the making of bricks and other purposes is handled by the same committee structure.

However, the Ministry of Agriculture has no real enforcement authority. It files a complaint against the violator and sends it to the local police station to be enforced. This procedure is the same whether the violation is one of construction on agricultural land or of an unpermitted agricultural crop rotation. However, the judge in the local court will only issue a fine for such violations and in many cases that fine is not paid because the sentence is suspended.

In addition, the present period is one of uncertainty regarding the actual effect of the latest Local Government Law upon the status of employees of the national ministries at the governorate level. Articles 25 and 26 of Law No. 43 of 1979 state that the governor shall be treated as a minister and as the representative of the President in the governorate, responsible for the execution of the general policy of the state and specifically responsible for maintaining food security and augmenting agricultural production efficiency in the governorate. Officials of the Ministry of Agriculture thus consider that the governor is now responsible for seeing that the laws are enforced in his jurisdiciton. However, the officials of the governorate do not consider that they have such authority as it has not specifically been delegated to them by Presidential decree for such land outside of town boundaries and thus not under the control of local councils. The officials of the Ministry of Agriculture at the governorate, district, town and village levels appear to be uncertain as to their specific role and unwilling to actively enforce such prohibitions without the support of the governor. Some governors have given their support to such actions and some have not in the absence of a national directive.

As of March 1981, the National People's Assembly had refused to delegate authority for the enforcement of such measures to the Governor stating that they fear favoritism on the part of the governor and the lack of uniform national enforcement.

In addition, the village supervisors/engineers who are most likely to have the respect of the local people and might be able to enforce such prohibitions are hampered by their lack of equipment and transportation. Most such persons are responsible for a cluster of villages within a radius of 20-30 kilometers. However, they have no transport of their own and thus, must rely on local buses, etc., which run very infrequently in many areas. Therefore, they tend to stay in the village which is their base and rarely go to the other villages.

If there is encroachment on state-owned land, then the governor is already the responsbile official through his authority over such land under his jurisdiction and he may act administratively to remove such buildings through demolition.

His main problem is that of bulldozers and other necessary equipment and of personnel, as well as of the attendent local political problems connected with demolition as many of these buildings go up very quickly overnight or during a holiday period.

The present landlord-tenant law (Law No. 49 of 1977) and current judicial practice makes it almost impossible to evict someone after he has settled in a building. To further make matters difficult, judges in Egypt do not consider a structure to be a "building", and thus, eligible for demolition, until it is completed. Thus, they will not allow demolition of a foundation, but only a completed building.

2. Time Requirements of Enforcement

Under the best of circumstances, present legal and administrative practice make enforcement of this law, even on state-owned land, difficult and time-consuming. In such situations the mayor will send an order to the local police station to carry out the administrative procedure for demolition of the building. However, the police do not have the proper equipment. The police report back to the mayor to that effect in 2-3 days.

The mayor then goes to the attorney for the markaz who states that the Mayor indeed has the authority to demolish. However, he seeks an opinion from the attorney for the governorate in the capital of the governorate. There the matter is considered for one month before the necessary opinion is issued. During this period the first floor of the structure is built. The party constructing the building then appeals the decision of the Attorney for the Governorate to the Regional Attorney (for the Delta he is located in Tanta). It takes one week for the file to get from the governorate capital to Tanta. It then takes 3-4 months for an opinion in support of the

Mayor to be given by that attorney. An appeal is then made to the national Attorney General in Cairo. A decision from that office may take as long as 2-3 years. By that time, a three storey building has been constructed and inhabited so that the persons living there cannot be removed.

3. Special Situations

Land under the control of the New Urban Communities Authority is essentially state-owned land and thus can also be dealt with as described above, with the major questions being the ability of the Authority to enforce its powers upon any reclaimed land that falls within the boundaries of one of its new communities.

With regard to encroachment upon reclaimed land, this is presently a problem for which there is not an adequate legal solution. The Ministry of Land Reclamation has stated that such persons should pay a market price for such land and retain it for agricultural purposes. A draft law is now being considered which states that persons occupying reclaimed land must pay for that land within two years of their occupation or they will be removed. However, it is questionable how well such legislation could be enforced.

Agricultural land within town boundaries is considered as urban land for tax purposes but, as noted above, it also must receive the permission of the Ministry of Agriculture to be built upon and such permission may only be granted for buildings to provide the town with services and for residential buildings for the use of the owner. However, in practice permission procedures are ignored although the general control of the town over activities within its jurisdiction means in practice that much building on agricultural land goes on just outside of town boundaries.