

WORKING PAPER
ON
CHARACTERISTICS OF ALTERNATIVE STRATEGIES

Prepared for:
Advisory Committee for Reconstruction
Ministry of Development

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December 31st, 1980

Engineer Soliman Abdel Hai
Chairman,
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Cairo - Egypt

Dear Eng. Abdel Hai,

The National Urban Policy Study team is pleased to submit the Working Paper on General Characteristics of Alternative Settlement Strategies as called for in Sub-Task 2.1.1 of the Scope of Work. The brief Arabic summary of the report is included in this submission.

This Working Paper follows the Status Report which described the elements of alternative strategies and precedes the Interim Action Report which will suggest between four to six alternative spatial patterns and discuss the principles which have guided their selection and the settlement strategies they exemplify.

The general characteristics of alternative settlement strategies discussed here are:

- 1) No particular settlement pattern should be viewed as an end in itself -- spatial strategies serve national objectives;
- 2) No one settlement pattern is likely to be the best in terms of all national objectives;
- 3) Strategies based upon different degrees of spatial concentration are likely to illustrate trade-offs between economic efficiency and equity; and
- 4) Strategies based upon alternative intra-regional patterns in the Cairo region are likely to illustrate trade-offs between economic efficiency and adverse effects of concentration.

We are working on the Interim Action Report now and would be happy to discuss the status of our work with you at anytime.

Sincerely,

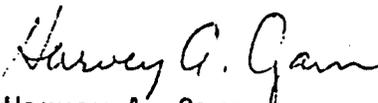

Harvey A. Garn
Team Leader

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الدراسة الوطنية للسياسة الحضرية
NATIONAL URBAN POLICY STUDY

ملخص

ورقة العمل

الملاحح العامة للاستراتيجيات البديلة
للتنمية الحضرية

تناقش ورقة العمل هذه الملامح العامه للاستراتيجيات البديله للمستوطنات البشرية فى مصر ، وهى الاستراتيجيات التى يتعين وضعها تنقيذا للمهمه الفرعيه رقم ١-١-٢ من برنامج ونطاق عمل دراسة السياسه القوميـه للتنميـه الحضريه فى مصر . وقد ناقش تقرير الحاله عن السياسه القوميـه للتنميـه الحضريه الذى اعد وقـسـدم فى ٣١ اكتوبر ١٩٨٠ اسلوب ومنهاج العمل الذى سيتبع للتوهمل الى وضع وتحليل الاستراتيجيات البديله .

وسوف تشتمل كل استراتيجيه بدياه - بعد عمليه التحليل الشامل والكامل - على مجموعه من العناصر الأساسيه وفى مقدمتها التوصيه بتوزيع قطاعى ومكانى للاستثمارات المنتجه للوظائف وفرص العمل ، وما يترتب على ذلك من توزيع مكانى للسكن . كذلك فان توزيع الاستثمارات على هذا النحو سوف يحتاج بالتالى الى متطلبات من مشروعات التنميـه الأساسيه وكذلك الاسكان على المستويين الاقليمى والمحلى ، وسيتم تحديد هذه الاحتياجات والمتطلبات وتقدير تكلفتها .

من ناحيه اخرى فانه سيتم تحديد تلك الادوات الازمه لوضع كل سياسه مــــمن السياسات البديله موضع التنفيذ ، مثل ، الحوافز التى تشجع على عمليه التوطن والضرائب وغير ذلك من صور واشكال الامانات والدعم الاخرى ، وادوات الرقابــــه المباشره . كما سيتم تحديد المتطلبات الاداريه الازمه للتنفيذ ، فضلا من الاستثمار المباشر فى تلك المشروعات المنتجه للوظائف والاعمال ومشروعات البنيه الأساسيه الازمه . وتشكل هذه المجموعات البديله من الاستثمارات المباشره ، والادوات المكمله لها ، وأنماط المستوطنات المترتبه عليها ، مع بعضها البعض ، الاستراتيجيات المحتملـه للمستوطنات البشريه . وسيتم اختيار كل استراتيجيه منها للتحقق من جدواها فى ضوء المحددات الماليه والاجتماعيه والاداريه وكذلك الموارد الحقيقيه ، وذلك باستخدام عدده مخططات مختلفه من معدلات النمو الاقصادى والديموجرافى ، والمستويات القياسيه للاسكان ومشروعات البنيه الأساسيه ، وكذلك التغطيه المكانيه . وتستهدف هذه الخطوه أقصاء تلك البدائل ذات المخاطر العاليه ، والتعــــرف على المواطن غير المؤكده أو المشكوك فيها فى تخطيط يمتد افقه عبر عشرين سنه قادمه

وسيتم تقييم الاستراتيجيات ذات الجدوى للتعرف على تأثيرها المتوقع على الأهداف القومية - بالنسبة لتكلفتها - لمساعدة حكومة جمهورية مصر العربية في اختيار الاستراتيجية التي تحقق التوازن بين انجاز الهدف والتكاليف التي تفضلها . وسيتم بعد ذلك تطوير الاستراتيجية المفضله بتفصيل اكبر .

ويعتبر التقرير المرحلي عن عمل المشروع (Interim Action Report)

الذي سيقدم في يناير ١٩٨١ بمثابة خطوه اولى على طريق تحديد استراتيجيات بديله للمستوطنات بصوره اكثر تحديدا . وسيقترح التقرير مجموعه مبدئيه من اربع الى سته انماط لتوزيعات مكانيه للسكان والعماله لدراستها من قبل اللجنه القياديه للمشروع واللجنه الاستشاريه للتعمير وسيضمن التقرير ايضا مناقشه وبحث للمبادئ التي سيهتدى بها في اختيار الانماط البديله في مصر ، واستراتيجيات المستوطنات التي تمثلها . وستمثل الانماط المقترحه مجموعه من الاختيارات بحيث يسهل على حكومة جمهوريه مصر العربيه فرصه الاختيار ولما يسمح لنا تركيز جهودنا المقبله على مجموعه محدده من البدائل يتم اجراء تحليل كامل لها من حيث الجدوى والتكلفه .

وتعكس الملامح العامه للاستراتيجيات البديله للمستوطنات البشريه حقيقه انه ليست هناك استراتيجيه واحده - تعتبر افضل الاستراتيجيات جميعا - قادره على تحقيق كل الاهداف المرغوبه ان كل استراتيجيه ستكون استراتيجيه مختلفه ذات مدى واسع من المزايا والفوائد ، وبعبارة اخرى ستصمم الاستراتيجيات لتوضيح مدى النتائج المتوقعه على الاهداف القوميه للنمو الاقصادى ، والعداله الاجتماعيه ، والحفاظ على الاراضي الزراعيه ، وتخفيف حدة استقطاب القاهره ، وما يترتب على هذا الاستقطاب من خلل اقتصادى .

ولا شك أن من أهم مصادر المتغيرات التي سوف تميز الانماط البديله الاوليه : درجة التركيز والانتشار للمستوطنات المخطئه ، ونمط المستوطنات التي ستنشأ داخل نطاق اقليم القاهره . وسيصمم المصدر الاول لمتغيرات بحيث يوضح المزايا النسبيه

للكفاءة الاقتصادية والعدالة الاجتماعيه . والثانى لتوضيح المزايا النسبيه لكسل
من الكفاءة والمساوئ الاقتصادية للتركيز والتجمع . وستختلف البدائل ايضا تبعا
لدرجة الحاجه الى ما هو ضرورى لتحقيق التغيير فى السياسات الحضرية ، المعلنه وغير
المعلنه وذلك من اجل التوصل الى انماط المستوطنات المرغوبه .

I. INTRODUCTION.

General characteristics of the Alternative Settlement Strategies being prepared in the National Urban Policy Study are discussed in this working paper, Sub-Task 2.1.1. of the scope of work. The methodology for developing and analyzing Alternative Strategies was discussed in the Status Report on the National Urban Policy Study, October 31, 1980.

When fully analyzed each Alternative Strategy will contain several key elements. First, each alternative will include recommended sectoral and spatial distributions of job-producing investment and a derived spatial distribution of the population that is, a settlement pattern. These distributions, in turn, will generate requirements for regional and local infrastructure as well as housing. These requirements will be identified and costed.

Settlement policy instruments -- such as locational incentives, other taxes and subsidies, direct controls -- as well as administrative requirements for implementation will be specified, in addition to direct investment in job-creation and infrastructure.

These alternative "packages" of direct investments, complementary instruments, and settlement patterns constitute potential settlement strategies. Each strategy will be tested for feasibility against constraints -- financial, real resource, social and administrative -- utilizing different scenarios of economic and demographic growth rates, physical standards for housing and infrastructure, and spatial coverage. This step is intended to eliminate high risk alternatives and recognize the inherent uncertainty of a twenty year planning horizon.

Feasible strategies will be evaluated for their expected impacts on national objectives -- relative to their costs -- to assist the GOE in selecting a strategy containing the balance of goal accomplishment and costs which they prefer. The preferred strategy will then be developed in greater detail.

The forthcoming Interim Action Report, January, 1981, is the first step in the specification of specific alternative settlement strategies. The report will suggest an initial set of four to six spatial patterns of population and employment for consideration by the Steering Committee and the ACR. The report will include an examination of principles guiding the choice of alternative patterns in Egypt and the settlement strategies which they exemplify. The patterns presented will represent a range of options in order to facilitate response by the GOE that will permit us to focus our subsequent efforts on a more limited set of alternatives for full costing and feasibility analysis.

As proposed in the Status Report, the Interim Action Report will present, in addition to settlement pattern alternatives, information on population, employment, and investment that are to be allocated across the proposed settlement patterns. Information gathered in Task I on settlement zones and individual settlements* relevant to assessment of their economic growth potential and ability to effectively absorb additional population will be presented.

II. CHARACTERISTICS OF ALTERNATIVE STRATEGIES.

A. A Perspective on National Urban Policy

National urban policies are a sub-set of national policies which operate through intervention in the settlement system to achieve national objectives. From this perspective, objectives regarding the size, functional, and spatial distribution of settlements are instrumental rather than ultimate goals.

* "Settlements Zones" are an exhaustive set of portions of the national territory that will be treated as target zones in the allocation of employment and population. The individual settlements, for which profiles will be presented, are mainly urban places over 60,000. Some places which are currently smaller than this will be included-such as Nag-Hamadi-because of their special characteristics.

Enormous intellectual effort has gone into attempt to identify, theoretically, optimal city sizes, city-size distributions, functional hierarchies, or geography so that they could be used as guides in practical urban policy planning. Although some of the optimality rules suggested by these efforts have been used in urban policy design, they have not turned out to be completely reliable guides.

There are two primary reasons for this: (1) the outcomes of particular size, functional and spatial distributions depend on the interactions among them as well as their independent influence on outcomes and (2) particular combinations of such distributions tend to be more strongly related to positive outcomes on some objectives than others.

Thus, there is no single settlement strategy which can be recommended as the optimal instrument for achieving all relevant national objectives. Each realistic alternative will be a mixed strategy and will offer a mix of benefits -- achieving higher levels of performance on some objectives and less on others -- for comparison to the remaining alternatives proposed. Because such tradeoffs are inherent, we will select alternatives which will give a range of choice on expected contributions to desirable objectives.

B. Major National Objectives

In developing the alternatives for Egypt's national urban policy, four national objectives seem to be of central importance. These are: (1) achievement of rapid economic growth; (2) maintenance of social equity; (3) preservation of arable land for agricultural uses; (4) reducing the rate of polarization of the urban hierarchy in Cairo and the diseconomies of agglomeration associated with it. These goals are enunciated both in national development policy and in current urban efforts.

A factor of major importance--which contributes to the difficulty of accomplishing these objectives--is population growth and its increasing urbanization.

Throughout this century, Egypt has experienced increased urbanization and concentration of its rapidly growing population with no substantial increase in the land area which is inhabited. In 1907, only about a fifth of the population lived in urban areas. In 1974, about a third lived in such areas. By 1976, almost half of the population lived in cities. In the 1947-76 period almost sixty percent of the total population growth occurred in urban areas as they grew at an annual rate of 3.11 percent while rural population grew by 1.54 percent.

A major portion of this growth has occurred in Cairo--the primate city which dominates the urban hierarchy of Egypt. In the 1960-76 period, Greater Cairo* grew by 3.7 percent a year.

* The figures in the text (Definition 3) refer to only one of several definitions of Cairo in use. For reference alternative definitions are:

| <u>DEFINITION</u> | <u>1976 POPULATION</u> | <u>PERCENT OF TOTAL POPULATION</u> | <u>PERCENT OF URBAN POPULATION</u> |
|---|----------------------------|--|--|
| 1. Governorate of Cairo | 5.084 | 13.9 | 31.6 |
| 2. Urban Metropolitan Cairo: Cairo Governorate plus Shoubra El Kheima & Urban city of Giza | 6.317 | 17.3 | 39.2 |
| 3. Greater Cairo: Metropolitan Cairo (2) plus rural population of city of Giza | 6.805 | 18.6 | 42.2 |
| 4. Greater Cairo (GOPP): Greater Cairo (3) plus urban and rural population of Qanater El Khayrieh, Khanka, Qualiub, and Oseim/Imbaba | 7.758 | 21.2 | 48.2 |
| 5. Cairo Planning Region: the governorates of Cairo, Giza, and Qualubieh | 9.178 | 25.1 | 57.0 |

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In 1976, Greater Cairo had 6.8 million inhabitants representing 18.6 percent of the total population and 42.2 percent of the urban population of Egypt. The broader Cairo Planning Region -- the governorates of Cairo, Giza, and Qaliubiah -- contained 9.2 million people, more than a fourth of the total population.

Although demographic projections are subject to considerable uncertainty, it is likely that the total population of Egypt will be about 68 million by the year 2000. Estimates of future urban population are even more uncertain than estimates of total population since, in addition to natural increase (births-deaths) they also depend on policies affecting migration rates. If, however, urban population were to grow at the same rate as it did in the 1966-76 decade -- a rate that may be a conservative estimate since the rate of urbanization has been increasing throughout this century -- urban population would almost double to 32 million by 2000 from its 1976 level of 16.1 million.

The population of Greater Cairo and the broader Cairo Region can also be expected to grow considerably. If Greater Cairo grew at the rate of natural increase between now and 2000 (that is, without positive net migration from other areas) the 1976 population of 6.8 million would almost double to 12.4 million. A continuation of the 1960-76 rates of growth for Greater Cairo would raise this estimate 16.3 million.

C. Central Characteristics of Alternative Settlement Patterns

As indicated earlier, our intent in presenting four to six alternative settlement patterns in the forthcoming Interim Action Report is to elicit sufficient response from reviewers of the report to begin narrowing down the number of alternatives to be more fully analyzed. Consequently, the initial patterns should have a tendency to vary somewhat systematically in their

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expected degree of accomplishment of the major objectives cited in the previous section.

The Status Report suggested some ways in which this might be accomplished, which deserve repetition here.

The first of these suggestions is that there tends to be a general relationship between the degree of concentration in settlement strategies and economic efficiency and equity. The second is that the structure of settlements within a major metropolitan region -- e.g. polynucleation -- may influence the trade-off between efficiency of concentrated patterns and the diseconomies of agglomeration.

On the first point, more concentrated strategies were said to be more efficient -- i.e. more productive of national growth -- and more dispersed strategies more equitable. To the extent that this proposition is valid, alternative settlement patterns which vary in their degree of concentration and dispersion will represent a range of trade offs on these two major objectives.

The general validity of this relationship has theoretical and empirical support, as well as support from urban policy experience in many countries. From a theoretical point of view, the returns on economic activity are a function of the availability and costs of inputs, on one hand, and the costs of marketing products on the other. Economies of agglomeration, which are associated with urban size, help provide favorable conditions for a wide variety of economic activity. Places with such advantages tend to attract skilled labor, management, and entrepreneurs and are attractive to those who wish to start new activities.

In a recent analysis of urban policies in developing countries, Harry W. Richardson -- an experienced national urban policy analyst, knowledgeable about a wide range of of developing countries -- wrote:

"The higher productivity of big cities is indisputable in the sense of higher real incomes, higher rents, and (less well substantiated) higher profits. Economies of scale, specialization advantages, complementarity among industries, reduced communication costs, high market potential, infrastructure utilization advantages and the generation and diffusion of innovations figure among the more obvious sources of this higher productivity".*

Such factors help explain the persistence of urban concentration at the top of the urban hierarchy as well as at the regional level.

Empirical support for the general relationship is widespread. This evidence, from others and his own additional empirical analysis in 46 developing countries, lead Koichi Mera to the following conclusion:

The available empirical analyses presented above show that large cities are more productive and that the largest cities are likely to be particularly more productive relative to others in a less developed country. Therefore, a decentralization policy of investment and population distribution over the country cannot be encouraged... if the national goal is to maximize the growth of national products.

However, it is known that urbanization generally increases per capita income of the areas affected. Therefore, if the national goal is to achieve a more equitable distribution over different regions, even at some sacrifice to the GNP growth rate, then a policy directed toward development of under-developed regions can be justified.**

* Harry W. Richardson, "City Size and National Spatial Strategies in Developing Countries", World Bank, April, 1977, p.48.

** Koichi Mera, "On Urban Agglomeration and Economic Efficiency", Economic Development and Cultural Change, No.21,1973, p.324.

Urban policy experience in most countries shows that policy instruments for dispersion have been relatively ineffective in slowing the growth of the largest cities, even though they do experience increasing diseconomies of agglomeration. Most evidence points to the higher productivity of the largest cities and a continuing relationship between concentration and economic efficiency that is not outweighed by the diseconomies. It is possible however, as suggested in the Status Report that an intra-regional strategy of polynucleation could retain many of the critical agglomeration advantages while reducing diseconomies.

This evidence of a general relationship between concentration and efficiency and dispersion and equity recommends utilizing the degree of concentration as a major variable in selecting initial settlement patterns to illustrate policy trade-offs.

As noted earlier, however, reduction in the rate of concentration in Cairo and the diseconomies of agglomeration associated with both size and the rate of population growth is another major objective of the Egyptian Government. There is little question that Cairo is experiencing severe problems of congestion, pollution, inadequate infrastructure and housing, as a result of its continuing rapid growth. Consequently, alternative settlement patterns need to reflect these factors as well as the continuing attractiveness of the Cairo region to economic activity and migrating population. The Study Team has concluded, therefore, that each of the alternative strategies should contain recommendations about the settlement pattern within the Cairo Region that is to be associated with the strategy.

D. The Influence of Explicit & Implicit Policies on Settlement Patterns.

The likely effects of national urban policies and policy instruments are influenced by both explicit and implicit urban policies. Explicit urban policies are those which are overtly selected to influence the settlement system. Implicit urban policies are policies which are selected for other reasons but which, nevertheless do affect the settlement system. The general

conclusion in the urban policy literature is that the implicit policies are often more influential than the explicit policies.

The "current urban policy" of Egypt explicitly includes the creation of satellite cities around Cairo; the rehabilitation and expansion of the Canal cities; the building of New Cities in the desert; expansion of settlements on the Northwest Mediterranean Coast; and increased settlement in the New Valley, Red Sea and the Sinai. Underlying many of these elements are the explicit policies of reducing the rate of growth of Cairo and protecting limited arable land from urban encroachment.

At the same time, there are a host of implicit elements in the "current urban policy" which contribute to increased concentration of the population. Throughout the last twenty-five years, Egypt has followed a policy of encouraging the development of industry to provide domestically produced goods as substitutes for imports and goods for export to earn foreign exchange to pay for importing capital goods and, increasingly, food. With the exception of resource based goods production -- such as oil -- and off-centered locations -- such as the Suez Canal -- industrialization has tended to foster urbanization and polarization in the Cairo region. The demand for location in Cairo remains high despite the explicit policy of holding down expansion.

The expansion and centralization of major governmental functions in Cairo has contributed, also, to the rapid expansion of Cairo as has the associated development of communication networks and transportation linkages in and to the primary city. The GOE has pursued, also, a policy of social equity through subsidies and controls which have tended to increase urbanization.

Existing inter-governmental mechanisms have not fostered consideration of effects of implicit policies on the development

of explicit spatial strategies or consideration of the requirements of spatial policy in the development of implicit policies. The effectiveness of alternative settlement strategies will be influenced by the degree to which such mechanisms can be created.

The "current urban policy", as suggested above, consists of a set of explicit spatial targets, investment in job-producing activities and infrastructure which support both these explicit spatial elements and implicit patterns. The alternatives which we are preparing will recommend explicit settlement patterns, varying by the degree of concentration and decentralization, intra-regional allocations within the major metropolitan regions of Cairo and Alexandria, and the degree to which they imply absorption of arable land for urban uses.

A range of alternatives are suggested in order to obtain reaction from the government regarding several major choice issues relating to the degree to which the GOE wishes to be explicit in its choice of a preferred strategy.

This choice has three key dimensions. First, a comprehensive policy will involve linking explicit elements of development policy to spatial priorities as well as sectoral priorities. At this time, the two are not linked explicitly in development planning nor organizationally. Second, a comprehensive policy will involve both a recognition of the implicit urban policies and a set of decisions about which, if any, of the implicit policies will require modification in order to accomplish the explicit purposes of national urban policy. Third, the degree to which explicit sectoral and spatial policies are linked and the range of implicit policies which are considered necessary for modification strongly affect the organizational mechanisms which will be required in order to implement national urban policy, and the level of involvement of other ministries than the Ministry of Development.

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III. SUMMARY

The key elements of each Alternative Strategy to be developed are: (1) a recommended settlement pattern -- distribution of population and employment -- and associated infrastructure; (2) a recommended package of direct investment and complementary policy instruments to achieve the recommended settlement pattern and their associated costs; (3) an assessment of the feasibility of each strategy and its impact on major objectives relative to its costs.

The Interim Action Report, January 31, 1981, will suggest four to six alternative spatial patterns for consideration and comments by the GOE, representing a range of options. The principles guiding the choice of specific alternatives will be described. Population and economic projections and data gathered on the growth potential and absorption capacities of settlement zones and individual settlements will be provided.

General characteristics of Alternative Strategies will reflect the view that there is no single optimal settlement strategy on all desirable objectives -- each strategy will be a mixed strategy with an array of benefits. The strategies, in other words, will be designed to show a range of expected outcomes on major national objectives of economic growth, social equity, preservation of arable land, and reduction in polarization in Cairo and the diseconomies associated with it.

Major sources of variability that will characterize the initial alternative patterns are the degree of concentration and dispersion of planned settlements and the intra-regional settlement pattern within the Cairo Region. The first source of variability is designed to show trade-offs between economic efficiency and equity and the second, trade-offs between efficiency and diseconomies of agglomeration. Alternatives will also vary by the degree to which it is necessary to effect changes in implicit as well as explicit urban policies in order to achieve the desired settlement patterns.