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**METERED WATER SERVICE  
CONNECTIONS PROGRAM**

1981 13/80

**SOCIO-ECONOMIC REPORT  
ON PROPOSED SERVICE AREAS**

**AID LOAN NO. 263-K-04201**



*Prepared for the*  
**GENERAL ORGANIZATION  
GREATER CAIRO WATER SUPPLY  
ARAB REPUBLIC OF EGYPT**

March 3, 1980

Reference Job Number 5938-2/3191

**ES-PARSONS, A JOINT VENTURE  
IN ASSOCIATION WITH ECG-CAIRO  
DR. ASAAD NADIM, PRINCIPAL INVESTIGATOR**

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ATTENTION OF :    Engr. Hussein Talaat Eid  
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SUBJECT :            Metered Water Service Connections Program  
                          Submittal of Socio-Economic Report on  
                          Proposed Service Areas  
                          Our Job Nos. 5938 and 3191

REFERENCE :         Contract dated February 8, 1979 between the  
                          General Organization for Greater Cairo Water  
                          Supply and ES-PARSONS for the Metered Water  
                          Service Connections Program

Gentlemen:

ES-PARSONS, in association with ECG, is pleased to submit the Final Socio-Economic Report on Proposed Service Areas, as called for in Appendix A, Section 2.4.4 of the contract. The submittal is of 30 copies of which 10 are for U.S.A.I.D. At the request of U.S.A.I.D., we are submitting to them an additional 60 copies.

We believe this report provides useful information on conditions and about the attitudes of the population in parts of Greater Cairo for which little information has been available. We hope the report will be useful to officials responsible for decisions concerning the provision of piped potable water and public sewer systems.

In the preparation of this report Dr. Asaad Nadim and his associates have taken a leading role. We are grateful to them for their fine professional work. Officials and staff members of the General Organization for Greater Cairo Water Supply, of the General Organization for Sewerage and Sanitary Drainage and the United States Agency for International Development have been extremely helpful and have provided essential support. We wish to thank all those who have contributed to the completion of the study.

ES-PARSONS

- 2 -

Submittal of Socio-Economic Report on Proposed Service Areas:

We appreciate the opportunity to serve the General Organization for Greater Cairo Water Supply in this manner.

Very truly yours,

ES-PARSONS

A handwritten signature in black ink, appearing to read "H.J. Karsten", with a long horizontal stroke extending to the right.

H.J. Karsten,  
Consultant's Representative.

## FOREWORD

This report is submitted in partial completion of a contract entered into between the General Organization for Greater Cairo Water Supply and ES-PARSONS, on February 8, 1979, for a Metered Water Service Connection Program.

Dr. Asaad Nadim and his associates, Dr. Nawal Nadim and Mrs. Sohair Mehanna, conducted the research and prepared the report under subcontract with ES-PARSONS.

The project was under the general direction of ES-PARSONS' Principal Social Scientist, Dr. John H. Nixon, who also assisted in the preparation of Chapters 1, 2 and 3. ES-PARSONS staff participated at various technical stages and has reviewed the entire report. ES-PARSONS is responsible for its contents. The findings and conclusions do not necessarily reflect the official views and policies of the General Organization for Greater Cairo Water Supply.

## TABLE OF CONTENTS

	<u>Page</u>
Letter of Transmittal	1
Foreword	iii
Abbreviations and Definitions	viii
<u>Chapter</u>	
1	
PURPOSE, METHODS, SUMMARY	1-1
1.1 GENERAL BACKGROUND OF THE CAIRO WATER PROJECT	1-3
1.2 FINANCING THE PROJECT	1-5
1.3 OBJECTIVES OF THE SOCIO-ECONOMIC STUDY	1-5
1.4 SELECTION OF AREAS	1-8
1.5 PLAN OF THE STUDY	1-10
1.6 CONDUCT OF THE STUDY	1-14
1.7 SUMMARY OF FINDINGS	
2	
DESCRIPTION OF THE STUDY AREAS	2-1
2.1 HISTORY AND DEVELOPMENT OF THE STUDY AREA KISMS	2-4
2.2 POPULATION GROWTH	2-10
2.3 STREET LAYOUTS AND GROUND FLOOR LEVELS	2-13
2.4 BUILDING CONSTRUCTION AND HEIGHT	2-15
2.5 SAMPLE HOUSEHOLDS; OWNERS AND RENTERS	2-21
2.6 HOUSEHOLD UTILITIES	2-23
2.7 PUBLIC SERVICES	2-23
2.7.1 Transportation	2-24
2.7.2 Public Health	2-25
2.7.3 Education	2-25
2.7.4 Commercial Services	2-26
2.3 URBANIZATION OF THE RURBAN FRINGE	
3	
SOCIO-ECONOMIC INDICATORS	3-1
3.1 OCCUPATIONS, INCOME AND RENT	3-2
3.1.1 Occupations	3-4
3.1.2 Income	3-14
3.1.3 Rent	3-16
3.2 PERSONS PER ROOM	3-18
3.3 EDUCATION AS AN INDEX OF SOCIO-ECONOMIC CONDITION	3-22
3.4 ARTICLES OWNED	3-24
3.5 COMBINED INDEX OF SOCIO-ECONOMIC POSITION	
4	
WATER CONSUMPTION PATTERNS	4-1
4.1 BRIEF HISTORICAL DESCRIPTION OF WATER SUPPLY SYSTEM	4-2
4.2 SOURCES OF WATER FOR THOSE WITHOUT PIPED WATER	4-3
4.2.1 Canal Water	4-4
4.2.2 Groundwater Through Pumps	4-5
4.2.3 Tap Water	4-8
4.3 VIOLENCE AND CONTROL AT THE SOURCE OF WATER	4-13
4.4 TYPES OF WATER CONTAINERS	4-14
4.5 WHO GETS THE WATER?	

**TABLE OF CONTENTS (Continued)**

<u>Chapter</u>		<u>Page</u>
	4.6 WATER VENDORS	4-14
	4.7 USAGE AND CONSUMPTION PATTERNS OF WATER	4-16
	4.8 COST OF WATER CONSUMPTION	4-18
5	PATTERNS OF WASTEWATER DISPOSAL	5-1
	5.1 SEWAGE SYSTEM	5-1
	5.1.1 Tanks	5-2
	5.1.2 Pipes	5-3
	5.1.3 Barrel	5-3
	5.1.4 Houses with no Sewage System	5-4
	5.1.5 Toilets	5-7
	5.2 PATTERNS OF WATER AND SEWAGE DISPOSAL	5-9
	5.3 HEALTH AND SEWAGE	
6	COMMUNITY NEEDS AND THE PROPOSED PROGRAM	
	6.1 REASONS FOR CHOOSING TO LIVE IN THESE DEPRIVED AREAS	6-1
	6.2 ADVANTAGES OF LIVING IN THE STUDY AREAS	6-3
	6.3 COMMUNITY NEEDS AND PROBLEMS	6-4
	6.4 SELF-HELP	6-5
	6.5 PROBLEMS OF INSTALLATIONS	6-9
	6.6 PAYMENT FOR WATER CONSUMPTION	6-13
7	CONCLUSIONS AND RECOMMENDATIONS	
	References	R-1
<u>Appendix</u>		
A	QUESTIONNAIRE AND CODING INSTRUCTIONS	
B	QUESTIONNAIRE RESPONSES	
C	CENSUS DATA	
D	MAPS OF STUDY AREAS (Separate Folio)	

## LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1.1	Households Without Water in Study Areas And in Sample	1-11
2.1	Population Increase 1960 Census to 1976 Census, by Kism	2- 6
2.2	Projected Population Increase, 1976 - 1990, by Kism	2- 7
2.3	Percent of Residency in Building, for 10 years and Over	2- 8
2.4	Percent of Buildings 10 years Old and Over	2- 9
2.5	Study Areas With Narrow Streets or Ground Floors Below Street Level	2-12
2.6	Average Number of Stories of Buildings in Greater Cairo, by Kism	2-14
2.7	Number of Stories of Buildings in Study Areas	2-15
2.8	Owners and Renters in Study Sample, By Number of Stories in Building	2-18
2.9	Number of Families Per Building, Total Sample	2-19
2.10	Persons Per Household, Rooms Per Household, Density For Owners and Renters	2-20
2.11	Students Attending School Inside and Outside their Kism	2-26
3.1	Main Occupation of Household Heads	3- 3
3.2	Monthly Income from Main Occupations	3- 5
3.3-1	Income from Main Occupation, Owners Without Water	3- 6
3.3-2	Income from Main Occupation, Renters Without Water and Summary Tabulation	3- 7
3.4	Income from Main Occupation, Owners And Renters	3- 8
3.5	Urban Household Expenditure Distribution, 1979	3-10
3.6	Percentage of Reported Income Under L.E. 75/Month	3-13
3.7	Rent: Average Per Household, Per Room	3-15
3.8	Room Densities in Study Area and Greater Cairo	3-19
3.9	Illiteracy Rate by Sex for Cairo Governorate	3-21
3.10	Rate of Illiteracy for Study Areas	3-22
3.11	Education Index	3-23
3.12	Index of Articles Owned	3-25
3.13	Composite Index	3-26
4.1	Nearest Public Tap	4- 9
4.2	Average Potable Water Consumption in Study Areas, Litres Per Capita Per Day	4-17
4.3	Potable Water Consumption in Liters Per Family Per Day and Cost Per Month, By Kism	4-19

LIST OF TABLES (Continued)

<u>Table No.</u>		<u>Page</u>
5.1	Toilet in Apartment, By Kism	5- 5
5.2	Availability of Toilet, Location of Toilet Used and Number of Families Sharing a Toilet	5- 6
5.3	Mean Number of Families Sharing Toilet By Kism	5- 7

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
1.1	Candidate Kisms for the Metered Water Service Connections Program	1- 9
3.1	Annual Expenditure Level/Household	3-11
3.2	Average Number of Persons Per Room by Kism Lowest to Highest	3-17

## ABBREVIATIONS AND DEFINITIONS

### ORGANIZATIONS

CAPMAS	Central Agency for Public Mobilization and Statistics
GOGCWS	General Organization for Greater Cairo Water Supply ("Organization" is also used to identify the GOGCWS)
GOPP	General Organization for Physical Planning
GOSSD	General Organization for Sewerage and Sanitary Drainage
MOH	Ministry of Housing
USAID	United States Agency for International Development

### TECHNICAL

m	metre	l/c.d	litres per capita per day
km	kilometre	na	not available or not known
sq m	square metre	LE	Egyptian pound (= \$US 1.43)
ha	hectare	mill	milliema (1000 mills = LE 1.000)
sq km	square kilometre	PT	piaster, (100 piasters = LE 1.000)
l	litre		
cu m	cubic metre		

### DEFINITIONS

Governorate	A political subdivision of the nation with responsibility for local governmental services
Markaz	A rural subdivision of a Governorate
Kism	A political subdivision of a city
Shiakha (plural, Shiakhat)	A political subdivision of a kism It is also used as a Census district
Cairo Govern- norate	A combined Governorate and city, on the east bank of the Nile south and east of the Ismailia Canal
Greater Cairo	A metropolitan area which includes the city of Cairo, the city of Giza on the west bank of the Nile, within the Governorate of Giza, and the city of Shoubra El Kheima which is east of the Nile and north of the Ismailia Canal and within the Governorate of Kalyubia.

## CHAPTER 1

### PURPOSE, METHODS, SUMMARY

#### 1.1 GENERAL BACKGROUND OF THE CAIRO WATER PROJECT

The Egyptian Government is engaged in a program to improve and expand the water and wastewater utilities in Cairo. Presently the General Organization for Greater Cairo Water Supply (GOGCWS), established by Presidential decree in 1968, is responsible for supplying water for Greater Cairo's population and industries. GOGCWS is answerable to the Ministry of Housing for financial and technical matters and to the Ministry of Local Government for administrative matters. The Governor of Cairo has the responsibility to approve or disapprove the decisions of the Board of Directors.

The population of Greater Cairo, in the November 1976 census, was 8 million, an increase of 66 percent since the 1960 census. Within Greater Cairo the contiguous urbanized area of the Cairo Governorate and the urban Kisms of Giza and of Shoubra El Kheima in Kalyubia Governorate contained 6,711,000 people and it is the contiguous urban area that is now served by GOGCWS. This same urbanized area had grown from 3,975,000 in 1960, an increase of 69 percent. The population of this contiguous urban area is growing at 3.5 percent a year and is expected to exceed 8,150,000 by 1982 (Waterworks Master Plan, Final Report).

Water production for household, commercial and industrial uses exceeds 300 litres per capita per day (l/c·d), which compares favorably with other developing countries and would be acceptable in many industrialized countries for urban uses. Some of the Cairo treated water is lost in transmission and recorded sales are slightly over 240 l/c·d. Production by 1982 is expected to reach 350 l/c·d and recorded sales 280 l/c·d.

Approximately one-quarter of Greater Cairo's urban population lacks direct access to the city's water supply system, and must carry potable water from public fountains. There are between 500 and 600 public fountains in Greater Cairo and consumption from these public fountains is approximately two percent of the total potable water produced in Cairo.

The GOGCWS has been making an average of 11,000 new service connections a year, since 1975, and is expected to maintain this rate in the near future. The number of people served per new connection is estimated to average slightly over 15 persons. As a rule, only one connection is made per building. For old connections in the densely settled parts of Cairo an average of 25 persons is served per building connection.

If the 11,000 new connections per year rate is maintained from 1977 through 1982, with 15 persons per connection, a total of 990,000 additional people would have a potable water connection in the building (and most would have it in their apartment). The population growth for the contiguous urban area is projected to be 1,432,000. In existing areas where there were only 220,000 connections in 1976 some increase in the number of persons per connection is possible as additional stories are added to existing buildings. This will be partly offset by the demolition of old buildings which have connections. It is possible that the 442,000 people not covered by new connections, plus these losing residences from demolitions would be covered by the expansion of existing buildings with connections. This would be an increase of 2 persons per connection, about 9 percent. Any larger increase from the increase in number of stories of existing buildings seems doubtful, and a smaller increase is possible.

The total of 1,744,000 people with no building connection to potable water in 1976 would not be reduced by the 11,000 per year connection program of GOGCWS. Since the GOGCWS program is probably at capacity, an additional means is sought to provide potable water service to those now deprived of it.

The Metered Water Service Connections Program is designed to supply basic water services and sanitation to much of this deprived portion of the Cairo population. The project will provide metered water connections to 40,000 additional buildings within the GOGCWS service area. This would serve approximately 600,000 people with potable water.

Initiators of this project are aware that the benefits of the existing water system have tended, in the past, to bypass the poorest elements of the society. Accordingly, the present project is chiefly geared to serve residential areas whose inhabitants are in the bottom half of the income scale.

## 1.2 FINANCING THE PROJECT

The GOGCWS covers a large share of the cost of street mains from a capital allocation made as a loan or grant each year by the Ministry of Finance as part of a capital expenditure program. In recent years these allocations have been treated as loans by the Ministry of Finance.

The individual house connections are paid for in advance by the individual owner. The charges vary with the actual cost of connections and the charge covers a share of the cost of the street main. The average revenue received per connection was L.E. 115 in 1977, the latest year for which complete reporting was available. The average charge had risen over the preceding four years reflecting inflation in costs in materials and installation.

A bill for water consumed, as recorded by the meter, is rendered to the building owner every two months by GOGCWS. If the building owner wishes to have the tenants share in paying the bill it is the owner's responsibility to collect from the tenants. Generally there is only one meter per building. GOGCWS has not reported significant difficulty in collecting the metered bill. The financial records of GOGCWS from 1973 to 1977 indicate that collections generally kept pace with the increase in water sold during these years.

The charges per cubic metre of water sold have been fixed at a constant level since the revolution in 1952, like the price of bread. For many years these rates produced a surplus over operating costs and debt service and this surplus was transferred each year to the Ministry of Finance. It was not retained by GOGCWS for capital expenses. The Ministry of Finance allocated capital funds to GOGCWS each year as part of a detailed national budget.

Increases in costs of materials, services, labor, depreciation and debt service eventually pushed unit operating costs and debt service above the fixed price per cubic metre of water. This occurred in 1975. Since then there has been a steadily increasing operating deficit.

The Board of Directors of GOGCWS has the power to propose water tariffs but not to set them. In 1976 the Board proposed a substantial increase in all tariffs, except those for the first 30 cubic metres per flat per month. The recommendations were forwarded to the People's Assembly, the final gov-

ernmental authority responsible for rates, but it has not acted on the recommendation. The Waterworks Master Plan also contained a recommendation for an increase in rates sufficient to cover operating costs and debit service, with present rates maintained for the first 30 cubic metres per flat per billing period.

The sewerage system is constructed and operated by the General Organization of Sewerage and Sanitary Drainage (GOSSD). The costs of constructing street mains is covered by annual appropriations from the Ministry of Finance. The cost of individual building connections is paid in advance by the building owner, with the charge being determined by an estimate of the actual cost. The operation of the sewerage system is covered from the general revenues of the government.

The Metered Water Service Connections Program will provide a water connection and appropriate type of sewerage connection for each building included in the program. An estimate of the cost of connections per building made by ES-PARSONS engineers follows :

Water - Street main to building	L.E. 110
Sewer - Street main to building	<u>90</u>
TOTAL - Street main to building	L.E. 200
Water - Share of street main to source	L.E. 110
Sewer - Share of street main to disposal	<u>430</u>
TOTAL - Share of street mains	L.E. 540
TOTAL - Cost of Water and Sewer	L.E. <u>740</u>

Critical questions with regard to the Metered Water Service Connections Program are whether the owners of the buildings in the areas to be served are willing to pay the full cost for the water and sewer connections, and whether they are able to pay for the connections. A related question is whether the building occupants who will be using the water would be willing and able to pay the metered water bill six times a year.

To secure information on these questions, and on other questions related to the design and execution of the program, this Socio-Economic Study was conducted.

### 1.3 OBJECTIVES OF THE SOCIO-ECONOMIC STUDY

A Socio-Economic Study within each of the candidate areas for the Metered Water Service Connections Program was desired to help select areas in need of the program and to determine the attitudes of residents about the program.

Specific questions for which the Socio-Economic Study is to find answers are listed below :

1. Whether the expected beneficiaries were willing to pay for the water connections to the buildings and whether they were able to pay for such connections?
2. How much the beneficiaries were willing to pay for the regular metered water bill?
3. Who will pay the water bill in a multi-unit (apartment) building and how will that be accomplished?
4. What are the basic cultural, economic and sociological effects related to water and this particular project?
5. What priority the provision of water has for the beneficiary population, in terms of other needs?
6. What are the existing water consumption and use patterns, and what is the present cost of water?
7. How is wastewater disposed of?

The survey is expected to develop a socio-economic profile of the target population in each candidate area in sufficient detail to serve as a basis for determining the need and acceptability of the proposed program.

Other issues will be examined, such as the physical and cultural characteristics of the areas, health impact, water cost analysis, household composition, income and occupation categories, educational levels, leisure time and commercial activities, self help, services and needed improvements.

### 1.4 SELECTION OF AREAS

The general criteria for selection of areas for the Metered Water Service Connections Program include the following :

- a. no direct access to water in the building;
- b. houses or buildings must be legally recognized by the Governorate and approved for water service;
- c. Houses or buildings must be in areas in the bottom half of the income scale;
- d. the areas should have identifiable boundaries;
- e. an adequate water supply for the additional connections must be available through a water distribution network within a reasonable distance of the area;
- f. houses or buildings must have access to an existing sewer system with capacity to handle the additional flow or wastewater seepage pits must be feasible;
- g. there must be a continuous group of dwellings without service connections;
- h. there should be no interference with other community upgrading programs.

While the Socio-Economic Study will provide information on some of the criteria, engineering studies conducted concurrently will provide information on others.

The following steps were used for selection of areas for the Study:

1. Using 1975 Census of Housing data, all Kisms were arrayed by percentage of households without water in the building. Kisms with under 8 percent without water were eliminated, leaving 18 Kisms to choose from.
2. The project Steering Committee, consisting of representatives of GOGCWS, USAID, ES-PARSONS and ECG, reviewed the remaining list on June 5, 1979 and reduced it to 12 areas, eliminating some kisms where GOGCWS had an active program to extend water lines, others where urban renewal program were planned for the poor areas, and still others which did not fit the selection criteria.
3. For each of the 12 areas, the location of public fountains was plotted on a 1:5000 scale map made from aerial photographs taken in April 1977.

4. Maps at a 1:1000 scale of the areas around the public fountains and other areas thought to be without water, were secured from GOGCWS and reproduced.
5. Engineers went into the field to check on the present availability of piped water in all the areas shown on maps to be without water. In some cases water had been brought in since the maps were updated.
6. The Steering Committee, on July 9, 1979, authorized the Socio-Economic Study in areas found to be without water in 9 kisms; the areas examined in the 3 other kisms having not met the selection criteria.
7. On 1:5000 maps for each area a boundary line was drawn around areas apparently without water. Those are the areas surveyed in this Socio-Economic Report.

The Kisms in which areas were selected are as follows :

CAIRO GOVERNORATE

Matareya

Zeitoun

Sayeda Zeinab

Masr El Kadima

Maadi

Helwan and Tabin

GIZA GOVERNORATE

Embaba

Giza

KALYUBIA GOVERNORATE

Shoubra El Kheima

Each Kism is considered an area, although frequently there were several non-contiguous districts within a Kism. The district in southern Helwan to be surveyed was so small that it was included with two districts in Tebin as one area.

After the areas to be studied has been identified by this process, the 1976 Census of Housing by Shiakha was completed for the Greater Cairo area by CAPMAS and a copy made available to ES-PARSONS. The data revealed within the nine kisms several additional shiakhat with a substantial number of households without a water connection in the building. Engineers did a field check of each area to verify the lack of water. In some cases, connections had been made since the 1976 Census. But in others there were no water connections and inadequate detail maps. The latter areas were added to the study area on the 1:5000 maps and were included in the Socio-Economic Study.

Figure 1.1 locates the Kisms with study areas. A detailed map for each Kism is presented in Appendix D (separate folio).

## 1.5 PLAN OF THE STUDY

The study procedure was to prepare a detailed questionnaire covering relevant physical, social, economic and water use data, to interview a sample of households in each area, getting full replies to the questionnaire, and to do in-depth and follow up interviews in each area with local leaders, water vendors, plumbing supply outlets, building owners and others with special knowledge.

The original plan was to interview a two percent representative sample of households in each area, but not over 200 households in each area. Statisticians from the United States Census Bureau, who reviewed the study plan and visited some of the survey areas, advised that it would take at least two months to draw a sample that could be termed "probabilistic" in a statistical sense. The subcontractor conducting the survey recommended that a somewhat smaller sample coupled with heavier emphasis on the in-depth interviews, during and after the questionnaire interviews, would produce a more meaningful result and could be completed within a reasonable time period. In the opinion of the US Census statisticians, the prime contractor and the subcontractor a "probabilistic sample" was not essential for the purpose of this study, and the method using more in-depth interviews was selected.

The questionnaire requested information on the basic characteristics of members of households visited, household income, housing structure and condition, water consumption and disposal patterns as well as securing basic information related to the community structure and services.

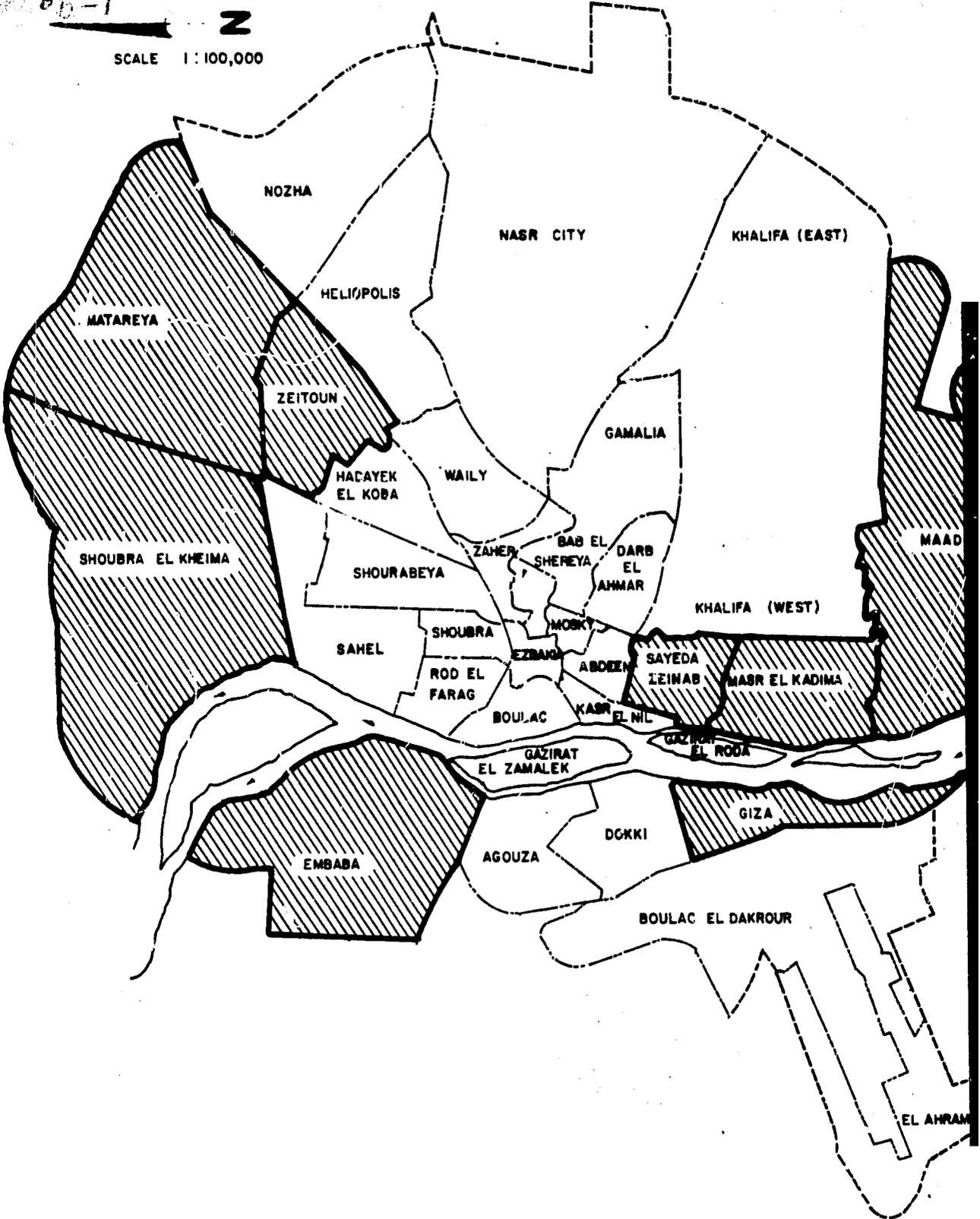
The detailed questionnaire was tested in several areas and reviewed by the Steering Committee and modified as required. An English translation of the questionnaire actually used is in Appendix A.

The sample as a percentage of estimated number of households in each area was varied, using approximately 60 as a minimum number and 200 as a maximum. The percentage of households interviewed ranged from 2.5 percent in Sayeda Zeinab with the smallest area to 0.5 percent in Matareya with the largest area. The estimated number of households in all the study areas was 129,600 and completed questionnaire were secured from 1283 households, 1 percent of the total.

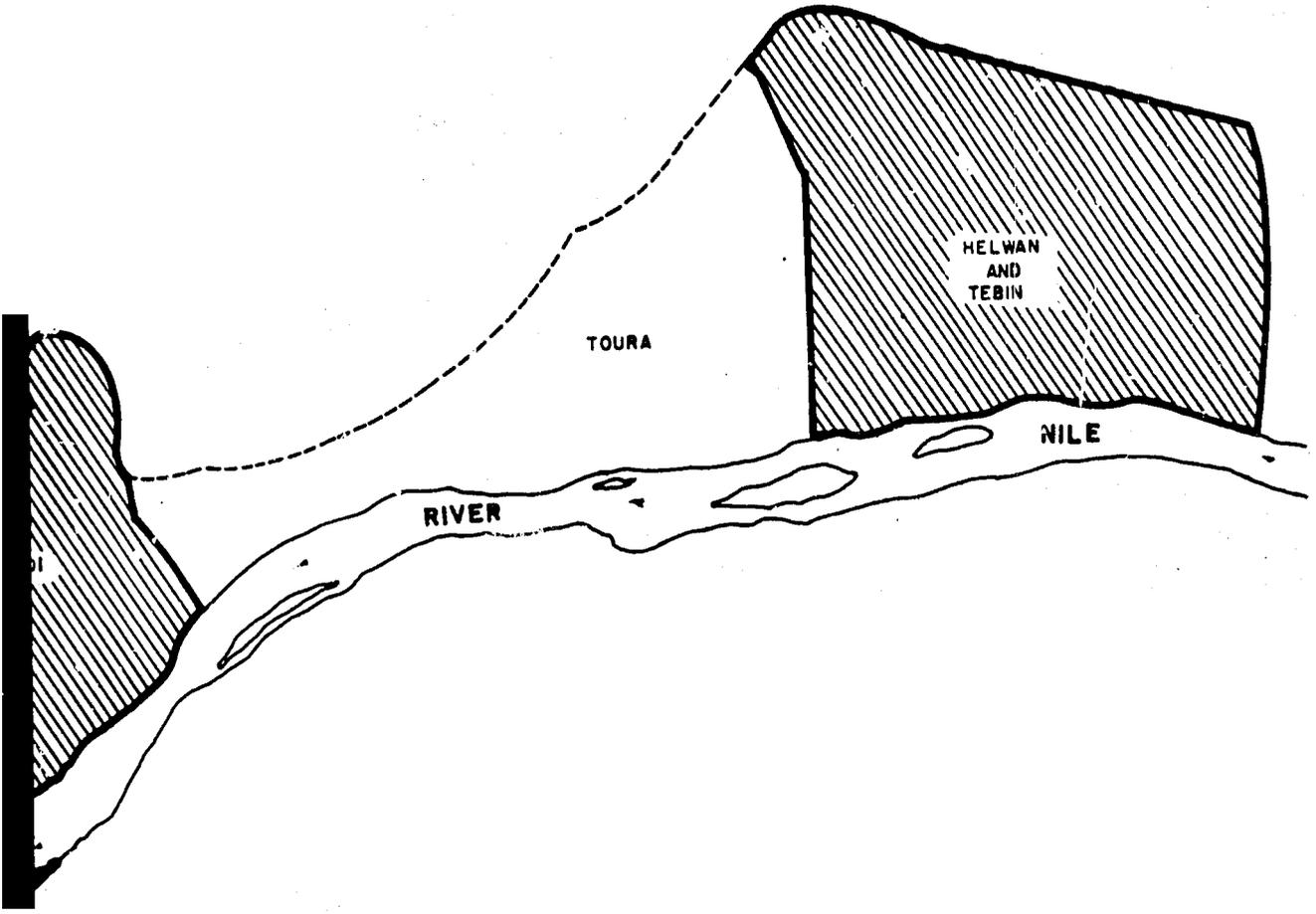
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SCALE 1:100,000



1-9a



 CANDIDATE KISMS FOR THE METERED WATER SERVICE CONNECTIONS PROGRAM

The estimation of number of households in each study areas was made as follows :

- a. on the 1:5000 maps a planimeter was used to measure the number of hectares within each defined area;
- b. the total number of hectares within study areas within one kism was multiplied by the average population density per hectare of residential areas in that kism derived from the 1976 census (Waterworks Master Plan, Final Report);
- c. the total population so derived was divided by 5 to achieve an approximation of the number of households.

The estimated number of households and the size of the sample in each kism is shown in Table 1.1. In the left hand column is shown the number of households living in buildings with no water connections in the whole kism, reported in the 1976 Census. In Masr El Kadima and Maadi the estimated number of households in the study area is considerably below this census report. Several explanations are possible : house demolition since 1976, new house connections since 1976, planned urban renewal for some areas and scattered lack of house connections making a general program infeasible. In Maadi, also, the average residential density in 1976 combined an affluent area with low density with a low-income area with a high density, producing a somewhat low average. To allow for the latter problem the size of the sample in Maadi was increased. In the Helwan-Tebin area most of the areas without water in Helwan are being covered by another project so almost all of the study areas fell within Tebin.

#### 1.6 CONDUCT OF THE STUDY

The actual households chosen from each area were selected on a basis designed to minimize effects of any geographical variations in each kism. Thus, each area on the map which was defined as not having water was divided into five zones corresponding to the four directional quadrants plus the center of any area. The sample quota assigned to each kism was divided among these areas. The field locations were visited and the exact number and location of households to be studied in each area were chosen. On the streets chosen, households for interview were selected at random and not more than two interviews were administered on any one street.

TABLE 1.1  
HOUSEHOLDS WITHOUT WATER IN STUDY AREAS  
AND IN SAMPLE

KISM	1976 Census Households Without Water In Entire Kism	Study Area Estimate					
		Hectares	Residential Population Per Hectare	Total Population	Total Households	Households in Sample	% of Households in Sample
Matareya	46,002	513	452	231,900	46,400	235	0.5
Zeitoun	8,697	84	496	41,700	8,300	136	1.6
Sayeda Zeinab	4,505	13	1008	13,100	2,600	65	2.5
Masr El Kadima	11,053	19	731	13,900	2,800	59	2.1
Maadi	29,214	125	270	33,800	6,800	155	2.3
Helwan + Tebin <sup>a</sup>	2,642	40	325	13,000	2,600	60	2.3
Embaba	33,510	228	542	123,600	24,700	212	0.9
Giza	13,218	55	864	47,500	9,500	159	1.7
Shoubra El Kheima <sup>b</sup>	32,514	218	594	129,500	25,900	202	0.8
<b>TOTAL</b>	<b>181,355</b>	<b>1295</b>	<b>500</b>	<b>648,000</b>	<b>129,600</b>	<b>1223</b>	<b>1.0</b>

a Tebin only, Helwan is largely covered by a different project.

b 1st Kism Shoubra El Kheima.

Thirty students and graduates from the School of Social Work, Helwan University in Cairo, were intensively trained for the field interviewing. This team of male and female interviewers was sent at one time into each area to conduct the interviews. They were accompanied by a public relations officer from the GOGCWS who was very helpful in answering questions related to official clearances and technical problems. They were also supervised by three senior researchers who took the interviewers to the locale and checked the completed interviews in the buses before leaving the area. Whenever information was lacking the interviewers went back for completion.

Since the main purpose of the survey was to identify and describe the conditions in areas without water connections, the great majority of the sample included households without water (1236 households). Forty-seven households having water connections were chosen from the same or adjacent areas for purposes of comparison.

Interviewers were instructed to conduct the interviews with household heads. In the event that the head of the household was not present, any other adult member of the household was interviewed. In 42 percent of the interviews the household head was available, while 40 percent of the responses came from wives of heads of household, and 18 percent from other adult members of the family. In most cases several adults were present when the interview was being conducted. Neighbors, passers-by, friends and relatives were all interested in knowing what was going on. Because it is the pattern in these areas that residents often sit by the doorsteps of their houses, a large number of the interviews were actually conducted in the street.

All information collected from the questionnaire was converted to numerical codes and sent for computer analysis. Complete anonymity of the respondents was preserved in the coded tabulations.

Interviews with key persons in the areas investigated were conducted throughout all the phases of the study. These interviews involved the following :

- a. Owners of buildings with water, to learn the procedures and problems they encountered in getting the water to their houses and the problems they are facing as a consequence of having water;

- b. owners of buildings without water to find out the efforts, if any that they were making to get water and what problems they anticipate having after water is installed;
- c. community leaders, to find out patterns and modes of self help in the community and general problems related to services and improvements in the area;
- d. individuals playing specific roles related to water usage, and sewage, such as water vendors, tap guards, and sewage drainers.

During the field operation a professional photographer accompanied the team. He recorded the major characteristics of each area and photographed scenes pertaining to the water and sewage conditions.

In addition to the questionnaires and interview programs, information was supplied by the CAPMAS and the GOGCWS and was developed from other literature and research sources.

Interviewers were received by the residents of the areas in a cautious manner until they introduced themselves as representatives of the water organization coming to investigate the problems of water installation and wastewater disposal. Respondents welcomed them heartily and were very cooperative in answering their questions. People crowded around and discussed the problems of water-deficiency, hardships of getting water and the diseases caused by the lack of disposal areas or regular sewerage facilities.

There was a general feeling on the part of all the residents of the various areas that the government had at last come to their rescue. As one woman put it : "We had thought that we were forgotten but it is the baraka (blessing) of Ramadan that brought you to us during these blessed days. May God give you long life", (An old woman from Matareys).

The interviews were conducted in late July and in August, 1979.

After computer tabulation, the most significant results were placed in tables incorporated in the text, Chapters 2-5. All other results are reported in a series of tables in Appendix B. Some related data from the 1976 Census is presented in Appendix C.

## 1.7 SUMMARY OF FINDINGS

The contiguous urbanized area of Greater Cairo increased by 2,736,000 people between 1960 and 1976 and over half of this growth occurred in six peripheral kisms which contain the study areas examined here. These kisms - Matareya, Zeitoun, Maadi, Helwan-Tebin, Embaba, and Shoubra El Kheima are rapidly converting from primarily agricultural to primarily urban industrial areas. The rapid growth recorded since 1960 is projected to continue without slackening to 1990.

Growth in these areas has been called "informal" in that it has not involved government construction of housing or water or sewer lines, and frequently the street patterns have been determined by private builders. The development has utilized available land, much of it formerly agricultural, a widely understood technology--reinforced concrete framing and floors and red brick walls, and materials available from both domestic and foreign sources. The development has taken place in response to the insistent demand of a rapidly growing working population of craftsmen and laborers. Many have been able to purchase homes from savings earned abroad, or from sale of family owned farm land in the same area. Population growth in these kisms and in the study areas has ranged from 6 to 9 percent a year, about double the growth rate for Greater Cairo.

People are moving into the areas because of the acute shortage of housing in the more central kisms. Almost one-third of the present heads of households were, or are the descendents of, rural or village inhabitants of these areas before the rapid urbanization began. The process of adding stories to the structures of reinforced concrete frame and red brick walls appears to be continuous. Most streets are narrow, between 3 and 7 metres in width, unpaved, uneven for vehicular traffic because of high sewage holding tanks in front of buildings, and full of sewage overflows, animal dung and refuse. The streets are a principal playground for many children.

A significant share of the inhabitants own their own buildings, which may house one, two or three families. In the sample, 64 percent were owners, but the percentage for the whole area is closer to 28 percent. The owners tend to have large families with many young children. The average number of persons in an owner's family is 6.4. They occupy an average of 3.2 rooms for

an average density per room of 2.0 persons. The monthly cash income of owners is approximately L.E. 50. A considerable number of owners are the only occupants of their building.

Renters have somewhat smaller families, 4.9 persons on average, and occupy an average of 2.5 rooms per family; again a density of 2.0 persons per room. Many more renters than owners live in buildings with over three families per building. Renters cash income per month is approximately 10 percent lower than owners. Monthly rent averages L.E. 2.50 per room, or L.E. 5.50 per flat.

The public facilities in these areas are meager. Public transportation only reaches the outskirts. Ambulances and fire trucks generally will not serve them because of the narrowness and unevenness of the streets. Only primary schools are available. There are no hospitals and doctors must operate clinics without piped water.

The income level and the educational level of the inhabitants fall easily in the bottom half for Greater Cairo, and mostly in the bottom quarter.

Water is provided by the adult females with some assistance from female children. Most water is secured from a public tap, but a considerable share is secured from a neighbor. Women frequently spend three to four hours a day carrying water. Per capita consumption, in the warm months when the study was conducted, ranged from 21 litres per day to 36 l/c.d. Areas with only distant public taps or with a substantial climb from the tap to the dwelling tended to have relatively lower average consumption.

Only 20 percent of the buildings were connected to a public sewer. Most buildings had a sewage holding tank in the street in front of the building which received toilet wastes and had to be cleaned periodically for a fee. Most households reported throwing general wastewater into the street or a vacant lot.

The concensus in every area was that getting purified water piped into the building had the highest priority for neighborhood improvement. A reasonably close second priority was the provision of public sewers to which

individual buildings could be connected. Many were in agreement that water should not be introduced unless accompanied by sewers. Overflow into the street from sewage holding tanks is a common occurrence and several householders commented that children contracted fatal illness from contact with the sewage. More water without sewers would mean much larger overflow problems.

Despite the strong desire for individual connections and public sewers the resources of the areas have been inadequate to secure them. In a number of neighborhoods there have been community efforts to collect funds from owners to cover the government's charges for installing water pipes and public sewers, but the funds have been inadequate. In a few cases funds were only adequate to lay a private sewer pipe on top of the ground, while sanitation practice requires that it be lower than any possible water source.

It was apparent from the study that one reason these areas have been bypassed in the provision of water and sewer is that many people are too poor to afford the regular government installation fees. A second reason is that local decrees have prohibited connections to houses built without a permit from the Governorate planning office. Builders have built without permits to save up to two years time required to secure permission and have an official decree published, and to avoid requirements for adequate street width and patterns which the planning department would require. The severe shortage of housing has made workers with relatively low incomes willing to buy or rent in such areas despite the absence of piped water and public sewers.

The Metered Water Service Connections Program would provide a water connection and a public sewer connection for each building in an area presently dependant on public taps or without any potable water. The study of the areas strongly supports the opinion of the inhabitants that no water connections should be made without sewer connections, lest the present very bad sanitary situation be made much worse.

To make connections to a building, the owner's consent must be secured. Almost three-quarters of the cost of the project will be accounted for by the street mains connecting to the nearest source of water and connecting to the

final outlet for sewage. It is important to have almost universal participation of the people in order to divide the cost of street mains by the maximum possible number of buildings to keep the per unit cost down. If only one-half of the buildings in an area sign up, then the net cost for each is double what it would be with 100 percent participation. If the project were financed in the regular way, with building owners paying the full cost of both water and sewer connections in advance, plus a share of the street main cost, it would take many years, possibly decades, to service the area. Meanwhile, population growth would continue rapidly in very unsanitary urban conditions.

To secure preponderant participation by building owners in the area the up-front cost must be within their means. With an average monthly family income of L.E. 50, the authors of the study believe, about one-half of one month's income, or L.E. 25, could be saved or borrowed to pay an initial fee. If 10 percent of income is saved such an amount could be saved in five months. The full cost of house connections alone would be L.E. 200, and to pay this would require ten percent saving over 40 months. This could not be done in advance and move the project expeditiously.

Could the owners borrow L.E. 200 or more? The traditional Egyptian lending institution, the Gamiya, involves neighbors loaning to each other. But for this project all the owners on a street would need to put up the same amount at the same time. If they borrowed from tenants there are only two or three tenants per average owner and the total amounts would be inadequate.

Could the owners ask the tenants to share the installation cost? A rent increase for such a purpose is prohibited by law. On a voluntary basis most tenants would be very reluctant since if they were to move, all the benefits would accrue to the owner.

Could the owner pay for the installation by a series of installment payments over several years? In Egypt, installment payments work for articles that can be repossessed if payments are stopped, such as a stove or T.V. They have not been very successful for articles that cannot be repossessed. A sewer connection is permanent and cannot be repossessed or shut off. A water connection is also permanent and shutting it off for non-payment of installment could create serious political difficulties.

The GOGCWS does not report difficulty in collecting a water bill six times a year, and the respondents in the study areas generally indicated a willingness and ability to pay whatever the meter said.

Only government can carry out a project to connect almost every building in an area to potable water and to a public sewer. The effect of the Metered Water Service Connections Program would be to provide a real improvement in the standard of living of over 600,000 people (an average of three families per connection for 40,000 buildings connected). Women would save three to four hours a day by having water in the building. The improvement in the quality and quantity of water for drinking, cooking, washing and household cleanliness would contribute to a general improvement in health. The elimination of stagnant pools of sewage and overflow wastewater from the streets would reduce the incidence of infection for children. The replacement of holding tanks with an underground sewage system would make possible the levelling of streets and greatly improve passage. This project would accomplish something which the individual families are unable to do for themselves.

The process of this study has alerted many of the inhabitants to the possibility of such an improvement, and they are eager for it.

The primary funds for the project cannot be raised from the present inhabitants by GOGCWS.

## CHAPTER 2

### DESCRIPTION OF THE STUDY AREAS

The nine study areas each have unique qualities which require a separate description of each kism area. Most of them, however, have many characteristics in common or prevailing over the great bulk of the area. These aspects are discussed in general terms, with statistical tables here and in Appendix B showing the detailed differences.

Attention is given to the physical structure of the areas, the street patterns, building height, number of household units per building and available household utilities. The inhabitants are considered in terms of size of household, density of persons per room and differences between owners occupying their own houses and renters. The public services available in the areas are described briefly.

Finally, some perspective is added to the history and physical and social conditions by comparisons with earlier periods and by discussion of some problems of rapid urban development under conditions of relative poverty.

#### 2.1 HISTORY AND DEVELOPMENT OF THE STUDY AREA KISMS

With the exception of Sayeda Zeinab and parts of Masr El Kadima, all the study areas were rural districts until the beginning of the twentieth century when they began to be engulfed by the expansion of the city. Each of the kisms has its own historical and administrative identity.

Matareya is the most ancient site of these areas. It was the seat of an ancient pharaonic shrine city. Remnants of this city are still in existence, and are often visited by tourists and students of ancient history. During the 19th century, Matareya was still reckoned as a village. By the beginning of the 20th century, it started to be part of the city. According to the census of 1947, it was part of Masr El Gadida Kism. In 1960, Matareya was designated a kism by itself. It is now the largest kism in the city in terms of both area and population.

Kism El Zeitoun, as an administrative unit, is relatively new. It was formed in 1960. Most of its shiakhat, i.e., East, West and South Zeitoun, were part of Kism El Waily until 1927, then transferred to Masr El Gadida until 1960. With the addition of Zeitoun Baharia to the three preceding shiakhat, the kism was formed. Masaken El Ameria was included after 1968. In 1971 this shiakha was divided into Masaken El Ameria El Shamalia and Masaken El Ameria El Gharbia. In spite of the newness of the Kism of Zeitoun, the region is very old, and has its religious relics as well as its historical remains.

An important factor in making this region a residential area was the introduction of the tramway in the 1960's. With this, the railway company provided its workers with houses in the area. Construction was rapid, and with it laborers from Upper Egypt came to live in the area. Also, rich people who sought more serene areas moved to this peripheral zone. Several pharmaceutical plants were erected there.

Administratively, Kism Zeitoun is divided into six shiakhat. The one which is of concern here is Shiakha Masaken El Ameria El Shamalia, which was previously part of Kism El Matareya.

Sayeda Zeinab, the third kism in the study, is one of the old districts of the city. It was the heart of Cairo for many centuries, hosting the seat of government for many rulers of Egypt. This kism acquired its name from the granddaughter of the Prophet Mohammed, the honorable Sayeda Zeinab, who was buried there and where her mosque was built and still stands.

Administratively, Kism El Sayeda Zeinab is composed of 14 shiakhat. The two of interest to the study are Shiakha El Aini and Shiakha Zenhom. The two shiakhat are adjacent to one another, and fall in the southern part of the kism.

Until 1937, Sayeda Zeinab had been a popular residential area, with space for expansion and with people moving to reside there in order to be near the governmental offices and the various ministries which were located in the vicinity. But, with the newly created quarters in Cairo and the expansion of factories to the south and north of Cairo, people began to move to the outskirts of the city.

The Zenhom Hills of Sayeda Zeinab were the hiding place of criminals and outlaws, and served as a garbage dumping area. Thus, when the government wanted to construct a housing project for low income groups, it chose Zenhom Hills as the location, so as to demolish the criminal enclaves in the area.

In many respects Masr El Kadima is similar to Sayeda Zeinab. It is one of the oldest quarters of the city. In medieval times, it was a suburb of the Fatimid city. Prior to that it had a long history of sheltering the Coptic community, and the infant Jesus. The area is now famous for its ancient churches. It also contains one of the oldest synagogues in Egypt. Presently, the kism has a substantial number of Coptic residents.

Administratively, Masr El Kadima had ten shiakhat in the 1960 census. In the 1976 census it added one more shiakha. The shiakhat of this kism are far from being homogeneous. Parts of this kism, such as Rhoda and Maniel, are residential areas of the upper middle class groups, while others, such as the ones studied here, contain some of the poorest people in the city.

Maadi and Helwan are presently the two suburbs of Cairo extending to the south. During the second world war, these two districts became residential areas. The British camps were situated in these areas, which encouraged migration of laborers. In Helwan, a substantial number of factories were constructed, which again attracted laborers to live there. In contrast to Helwan, part of Maadi is now an upper middle class suburb.

Both kisma were created in 1960. Maadi included five shiakhat and seven subdivisions. In 1979 the kism included two new shiakhat of Toura and Dar El Salam, the latter in turn being divided into two sub-units (El Essawia and Dar El Salam).

Helwan, on the other hand, was treated in the 1947 census as a separate district. In 1960 it was added to Cairo Governorate. Administratively, it was composed of eight shiakhat. In 1969, Tebin was transferred from Giza Governorate to be included with Helwan Kism, and in 1971 became an independent kism. In 1979, two new shiakhat were added, El Masaken El Ektissadia (new economic houses) and Menshiat Nasser.

In the Governorate and City of Giza, to the west of the Nile, the study areas included are parts of Embaba and Giza Kisms. These two kisms passed through similar stages of development. Their existence as villages preceded the arrival of the Moslem ruler Amr Ibn El A'as during the 7th century. Their incorporation into Greater Cairo went hand-in-hand with the construction of the bridges linking the shore of the river. Ismail Pasha in 1868 was interested in making the pyramids accessible to his foreign visitors. Kasr El Nil bridge was constructed in 1872, followed by Zamalek and Galaa bridges in the early 20th century. Expansion in that direction was further encouraged by the development of the tramway line connecting Zamalek and Embaba in 1913.

To the north, in the Governorate of Kalyubia, the district of Shoubra El Kheima, originally a rural district, started to be accessible to the city center in 1907 when the tram company opened a line which extended northward along Sharia Shoubra to the outlying village of Shoubra El Kheima (Abu-Lughod 1971, p. 135). But the area attracted residents after the second world war, and again after the 1952 revolution, when a substantial number of factories were constructed in it.

While administratively the City of Shoubra El Kheima is part of the Kalyubia Governorate, the "Urban Planning Organization" considers the city to be part of Greater Cairo, as it does the Kisms of Giza and Embaba. Shoubra El Kheima is divided into two kisms. However, all the study areas of the Socio-Economic Survey fall into the first Kism, Shoubra El Kheima.

## 2.2 POPULATION GROWTH

With the exception of those in Masr El Kadima and Sayeda Zeinab, all of the areas fall into the peripheral kisms of Cairo. Shoubra El Kheima, Zeitoun and Matareya are on the northern fringe of the metropolis. The areas studied in Maadi are located on the southeastern end, along the Mokattam hills. The Helwan-Tebin districts are on the southeastern end of the city. To the west are the areas of Embaba and Giza. In other words, the kisms in which the study was undertaken form a circular belt around the metropolis (see Figure 1.1).

Prior to the second world war, none of those peripheral areas, except Giza, existed as part of the city. They emerged as a response to the population increase and expansion of the city, expanding at a rapid pace, with their popu-

lations increasing more than those in any interior kisms of the metropolis. Table 2.1 shows the rate of population increase in these kisms of Greater Cairo between 1960 and 1976.

The continued rapid growth of this circular belt is forecast in the Waterworks Master Plan (1979). Table 2.2 projects the 1976 census data forward to 1990. Three kisms with very high growth rates, Nasr City, El Ahrām and Boulac El Dakrour, are also in this outer expansion ring but they have piped water and their populations tend to come from a higher income level than the residents of the study areas.

In both the 1960-1976 period and the 1976-1990 period, the kisms of central Cairo show a decline in population. In part, this reflects the replacement of old residential areas with office buildings, commercial establishments and luxury hotels. It also is the result of a conscious effort by the government to replace old, unsafe and badly overcrowded housing of low income population with more modern and less dense housing for the same population. Study area kism Sayeda Zeinab is an example.

The expanding kisms on the periphery of Greater Cairo are absorbing much of the population growth of Greater Cairo which proceeds at approximately 3.5 percent a year. About two-thirds of the growth is due to Cairo's rate of natural increase and one-third to immigration from rural areas and smaller urban areas of Egypt. The peripheral kisms are also absorbing the outmigration from central Cairo as some of the population is pushed outward by the reduction of residency capacity.

Households interviewed in the study areas were asked how long they had lived in the building (Table B 7). Since rent control in Greater Cairo prevents a landlord from raising rents for the renter of an unfurnished apartment, once established, and since moving generally requires paying "key money" for a new apartment to an outgoing tenant or a new landlord, people in Cairo seldom move. The percentage of the sample who have lived in a building over 20 years, or over ten years, is an indication of the relative age of an area. The results by kism areas arrayed from the smallest percentage residing 20 years and more to the largest percentage is shown in Table 2.3.

**TABLE 2.1**  
**POPULATION INCREASE 1960 CENSUS TO 1976 CENSUS**  
**(BY KISM)**  
 (population in thousands)

Kism	1960 Census	1976 Census	Difference	Percent Change
El Ahram	12	130	18	938
Dokki, Agouza, Boulac El Dakroul <sup>a</sup>	105	571	466	444
* Tebin	7	34	27	386
* Shoubra El Kheima <sup>b</sup>	101	394	293	290
* Matareya	161	535	374	232
* Maadi	83	267	184	222
* Helwan	94	283	189	201
* Zeitoun	100	268	167	167
Shourabeya <sup>c</sup>	171	444	273	160
* Embaba	136	323	187	138
Hadayek El Koba	144	315	171	119
Nozha	48	102	54	113
Heliopolis	77	127	50	65
Mousky	36	58	22	61
Sahel	304	439	135	44
* Giza	145	209	64	44
* Masr El Kadima	212	274	62	29
Gamalia	142	167	25	18
Khalifa	162	189	27	17
El Zaher	100	104	4	4
Shoubra	125	129	4	3
Rod El Farag	265	272	7	3
* Sayeda Zeinab	254	252	-2	-(0.8)
Darb El Ahmar	149	146	-3	-(2.0)
Abdeen	95	88	-7	-(7.4)
Kasr El Nil	43	39	-4	-(9.3)
Ezbakia	64	60	-4	-(6.3)
Boulac	202	178	-24	-(11.9)
Waily	163	142	-21	-(12.9)
Bab El Shareya	153	110	-43	-(28.1)
Nasr City	d	65	-	-

\* Study Areas

a Three 1976 kisms were basically one in 1960.

b Includes the area that in 1976 was the city of Shoubra El Kheima.

c Change in kism borders has occurred. This includes Nozha, Waily, Hadayek El Koba, Shoubra and Shourabeya. The increase in Shourabeya is not a true reflection of population growth, as it received a large increase through lateration of its borders with Waily.

d Nasr City did not exist in 1960.

**TABLE 2.2**  
**PROJECTED POPULATION INCREASE 1976-1990**  
**BY KISM**  
(Population in thousands)

Kism	1976 Census	1990	Difference	Percent Change
Nasr City	65	295	230	354
* Helwan	283	743	460	163
* Shoubra El Kheima	394	810	416	106
* Tebin	33	67	34	103
* Zeitoun	268	515	247	92
El Ahras	130	247	117	90
Boulac El Dakrou	322	608	286	89
* Matareya	535	998	463	87
Khalifa	187	342	155	83
* Embaba	323	581	258	80
* Maadi	267	470	203	76
Sahel	439	755	316	72
Nozha	102	175	73	72
Agouza	147	250	103	70
Heliopolis	127	170	43	34
Shourebeys	444	591	147	33
Dokki	102	129	27	26
Hadayek El Koba	315	394	79	25
* Giza	209	255	46	22
Waily	142	165	23	16
* Masr El Kadima	274	318	44	16
Gamalia	167	185	18	10.8
Darb El Ahmar	146	150	4	2.7
Rod El Farag	272	277	5	1.8
Zaher	104	98	- 6	-(5.8)
Ezbakis	60	54	- 6	-(10.0)
Shoubra	129	116	-13	-(10.1)
Kasr El Nil	39	35	- 4	-(10.3)
Bab El Shareya	110	97	-13	-(11.8)
Mousky	58	51	- 7	-(12.1)
Boulac	178	141	-37	-(21)
Abdeen	88	68	-20	-(23)
Sayedā Zeinab	252	180	-72	-(29)

Study areas

Source: Waterworks Master Plan, 1979

**TABLE 2.3**  
**PERCENT OF RESIDENCY IN BUILDING,**  
**FOR 10 YEARS AND OVER**

<u>Study Area</u>	<u>Percent of Sample Residing in Building</u>	
	20 Years and Over	10 Years and Over
<u>Kism</u>		
Embaba	-	19
Madi	2	25
Matareya	3	31
Zeitoun	6	42
Shoubra El Kheima	14	35
Giza	14	49
Helwan-Tebin	23	30
Sayeda Zeinab	36	64
Maar El Kadima	39	73
<u>Sub-Areas</u>		
Shoubra El Kheima		
No. 6 Shoubra El Balad	83	83

Source : Table B 7

A second question on the age of the building (Table B 8) did not get a complete response, with over ten percent unable to answer in the older kisms. Of positive responses, the percent showing buildings ten or 15 years old and older is shown in Table 2.4.

Both tables confirm the pattern indicated from the general Census Statistics in Table 2.1. The newer peripheral kisms are the ones with the largest percentage of newer population and new construction.

Survey questions regarding length of residence in the area produced data comparing on the above pattern : six percent of the respondents were newcomers who had been living in their present areas for less than a year; 33 percent had

**TABLE 2.4**  
**PERCENT OF BUILDINGS 10 YEARS OLD AND OVER**

<u>Study Area</u> <u>K'm</u>	<u>Percent of Sample <sup>a</sup></u>		<u>Number in</u> <u>Sample</u>
	<u>15 years</u> <u>and Over</u>	<u>10 years</u> <u>and Over</u>	
Embaba	14	35	212
Helwan-Tebin	16	31	60
Maadi	16	41	155
Matareya	16	45	235
Shoubra El Kheima	29	50	202
Zeitoun	37	61	136
Giza	46	67	159
Sayeda Zeinab	66	81	65
Maer El Kadima	73	85	59
			1283
<u>Sub Areas</u>			
<u>Matareya</u>			
Ezbet El Nahel	63	75	8
Arab El Hassan	56	56	12
Ein Shams			
El Sharkiya	50	63	9
<u>Giza</u>			
No. 2	68	87	65
<u>Shoubra El Kheima</u>			
No. 6 Shoubra El Balad	100	100	30

<sup>a</sup> Excluding "Unknown" which ranged from 3.3 percent in Embaba to 18.5 percent in Sayeda Zeinab.

Source: Table B 8.

been living there for more than one, but less than five years; 25 percent had been living in their present areas for more than five years, and 36 percent had been there more than ten years.

### 2.3 STREET LAYOUTS AND GROUND FLOOR LEVELS

The dominant street pattern in the newer areas is a grid pattern of oblong city blocks with relatively narrow streets. Periodically there are broad streets up to 25 metres wide planned to be main traffic arteries. All of the streets and avenues are unpaved, having only a dirt surface.

In the older areas, however, both in central Cairo and in old agricultural villages which have been surrounded by new urban construction, streets are often narrow and winding. Many residential streets end in cul-de-sacs reminiscent of medieval Cairo city design. In some of these old and narrow streets the ground level has built up with debris over the decades until it is one third of a metre or more above the ground floor of the adjacent residences.

Both the narrowness and the street elevation above ground floors present engineering problems in providing water connections to individual buildings. The project Steering Committee, on July 9, 1979, pointed out that laying pipe in narrow streets would be difficult because of obstructions from sewage holding pits, and suggested no planning for connections in streets under three metres wide. In an early test of the draft questionnaire in an old area of Masr El Kadima where the ground floor was below street level, one woman resident expressed the opinion that if water pipes were installed a water main break would flood out every household.

Accordingly, the interviewers paced off the width of the street, and checked whether the ground level of the building was below, even with, or above street level before commencing each household interview (Tables B 1 and B 2).

Streets surveyed among the various areas showed that 17 percent were between three and four metres wide, 42 percent of them were between four and six metres wide, and 35 percent were six to seven metres wide. Among all the areas, only six percent of the houses are on streets which are less than three metres wide.

In Masr El Kadima and Sayeda Zeinab, and in the older subareas of other kisma, over ten percent of the sample were on streets under three metres in width or had the ground floor of the house below street level, or both, as presented in Table 2.5.

Though in every study area there are streets which are less than three metres wide, these streets are localized in particular areas. In Shoubra El Kheima, region number six called Shoubra El Balada has one main street which is wide, and it is used as a market place where peddlers and sales people spread their merchandise in its passage. The majority of the other streets are circular and very narrow and less than three metres wide. In the study areas of Masr El Kadima as a whole, the streets are narrow. Streets which are less than three metres wide compose 37 percent of the streets of the survey in Masr El Kadima. This street pattern is also very common in the Zenhom area of Sayeda Zeinab. One of the alleys in Zenhom is called "the scorpion crack", i.e., it is as small as a hiding place of a scorpion. Also, Tebin has a few streets which are less than three metres wide. Older sections of Giza and one newer area of Shoubra El Kheima have narrow streets.

There is a close correlation between the level of the ground floor in relation to the street and the width of the street. More than half of the ground floors are of the same level as the street, while 32 percent of the houses are above the level of the street. Only seven percent of the houses have a ground floor below the street level. This seven percent are found in the same areas where the width of streets is less than three metres wide. The condition can be attributed to two main reasons. One, these streets are found in old districts or villages and with the accumulation of street debris over the years, the level of the street has risen above the ground floor. Second, in areas with hilly regions, not all houses are on the same level. One may have to climb 15 steps to go from one level to another. It is worth noting that in these hilly areas, the energy and effort required to obtain daily water supplies is beyond description. In Masr El Kadima and Sayeda Zeinab, women and children carry tins of water for a long distance up steep hills about 20 metres high.

Among the houses visited, two percent of them were situated such that the interviewer could not record the level of the house relative to that of the street due to the hilliness of the area or because of the heaps of garbage thrown into the road.

TABLE 2.5  
STUDY AREAS WITH NARROW STREETS OR  
GROUND FLOORS BELOW STREET LEVEL

Kism Areas Or Sub-Area	Percentage of Sample					Number in Sample
	Residency 20 Years and up	Building 15 Years old and up	Street Widths		Ground Floor Below Street	
			Under 3 Metres	3-4 Metres		
Masr El Kadima	39	73	37	34	27	59
Sayeda Zeinab	36	66	18	20	26	65
Shoubra El Kheima						
- # 6 Shoubra El Balad	83	100	40	20	30	30
Helwan - Tebin						
Tebin	28	20	14	8	14	50
Giza						
- # 2 Sub-area	23	68	6	45	11	65
Embaba						
- # 6 Sub-area	-	14	12	39	2	52

Source: Tables B 1, E 2, B 7, B 8.

These areas present engineering problems in execution of the project. The potential danger of street or house flooding also may influence local attitudes towards the project.

#### 2.4 BUILDING CONSTRUCTION AND HEIGHT

The dominant form of building construction in Cairo is reinforced concrete frame, floors and roof, and red brick walls. Finished buildings have a mortar outercoat which is painted. It is common practice to add additional floors to buildings which initially have only one, two or three floors.

In the study areas, 89 percent of the buildings were of concrete frame and red brick walls. Many buildings are inhabited without a mortar outer coating on the brick walls. There were a few variations from this primary pattern. In Sayeda Zeinab study areas, 35 percent of the buildings were of limestone and mortar and 25 percent, in Zenhom shiakha, were of wood. In Masr El Kadima in the Mokattam hills area, one-third were of limestone. In Tebin, 25 percent of the houses were of mud brick, a typical village construction method.

Greater Cairo is primarily a city of multi-story buildings. Average building heights in the various kisms range from 5.1 in Kasr El Nil to 1.3 in El Ahrām, but 28 out of 34 kisms had an average of two or more stories in the 1976 Census of Buildings (Table 2.6).

In the study areas the average height was two stories, but one-third were single story houses (Table B 5). In five rapidly growing kisms, Embaba, Giza, Shoubra El Kheima, Maadi and Matareya, the average was two stories or greater (Table 2.7). In Zeitoun, Sayeda Zainab and Masr El Kadima it fell below. In the latter kisms, the study areas were poor areas surrounded by more affluent neighbors in taller buildings and with water service to the buildings. In Helwan-Tabin, the study area is in a village fringe of a new industrial area.

The population growth forecast for the rapidly growing kisms (Table 2.2) is predicated on two types of expansion of living space. Land now in agricultural or other open use will be converted to residential use, and additional stories will be added onto existing buildings. The reinforced concrete construction makes possible the addition of stories up to five, six or more.

**TABLE 2.6**  
**AVERAGE NUMBER OF STORIES OF BUILDINGS IN GREATER CAIRO,**  
**BY KISM**

<u>Kism</u>	<u>Average</u>	<u>Kism</u>	<u>Average</u>
Kasr El Nil	5.1	Agouza	2.8
Abdeen	4.5	Darb El Ahmar	2.7
Zaher	4.5	* Masr El Kadima	2.6
Ezbakia	4.4	Shourabeya	2.6
Mousky	3.9	* Giza	2.5
Bab El Shareya	3.4	* Embaba	2.4
Rod El Farag	3.4	Gamalia	2.3
Shoubra	3.4	Khalifa	2.2
Heliopolis	3.4	* Zeitoun	2.2
Nasr City	3.4	Boulac El Dakrour	2.0
Nozha	3.3	* 1st Kism Shoubra	
Sahel	3.1	El Kheima	2.1
* Sayeda Zeinab	3.1	* Tebin	1.8
Dokki	3.0	* Maadi	1.7
Waily	3.0	* Helwan	1.7
Boulac	2.9	* Matareya	1.6
Hadayek El Koba	2.9	2nd Kism Shoubra	
		El Kheima	1.5
		Al Ahram	1.3

\* Study area Kisms.

Source: CAPMAS, Census of Housing, 1976.

TABLE 2.7

## NUMBER OF STORIES OF BUILDINGS IN STUDY AREAS

Kism Areas	Mean Average of Sample	Percent of Sample 3 Stories and Up	Maximum Number of Stories in Sample
Embaba	2.4	38	6
Giza	2.2	33	4
Shoubra El Kheima	2.1	28	5
Maadi	2.0	28	5
Matareya	2.0	25	5
Zeitoun	1.8	32	4
Sayeda Zeinab	1.6	12	4
Masr El Kadima	1.6	9	3
Helwan-Tehin	1.3	-	2

Source : Table B 5

## 2.5 SAMPLE HOUSEHOLDS; OWNERS AND RENTERS

In the streets chosen for the sample, as described in Section 1.6, one or two households were chosen at random to be interviewed, with not more than one household per building and not more than two per street. If no adult was available to answer the questions, another household was chosen. The questionnaire asked which households were owners of their residence and which were renters, as well as number in the household, number of rooms, number of families in the building and, for renters, location of the landlord.

Of the 1,283 households interviewed, 47 were connected to water and they supplied useful information on practices in connection with payment of water bills. Full analysis was given to the 1,236 households that were not connected. Of these, 785 or 64 percent were owners of the building inhabited by the household. Renters were 451 or 36 percent. The high percentage of owners was not expected and there appear to be two reasons for the large share.

First, there is a very old tradition in Egyptian villages and rural areas of the head of a family owning his own home. The situation in the growing kisms reflects the continuation of this tradition. Many of the households had immigrants. The area closest to rural village conditions, Tebin, had the highest share of ownership in the sample, 85 percent. The older inner city area of Sayeda Zeinab, on the other hand, had the lowest share, 21 percent. The large percentage of ownership reflects the strong desire of an Egyptian head of family of very modest income to own his own shelter.

A second reason for the large percentage of ownership, however, is that the sample inadvertently overrepresented the owners. It is believed that, because the word spread that the study was related to water, owners, either on their own or due to urging by tenants, were more available at the time of the interviewing.

An analysis of the data reveals that in the 1,283 buildings there lived probably over 3,710 families. The mean number of households per building was 2.9. Counting one resident owner per building there could be 1,283 possible owners, but the replies to inquiries as to residence of owner indicated that only 80 percent of building owners lived in the building, 5 percent lived elsewhere in the neighborhood and 15 percent lived out of the area (Table B4). The probable number of possible owners of the 1,283 buildings would be 1,025. Since 785 owners without water and 23 owners with water were interviewed a very high percentage of owners were interviewed. The estimated number of owners living in the area, 1,025, was 28 percent of the total number of households in the area.

The large sample of owners will be extremely useful in drawing conclusions about ability to pay for and willingness to pay for house connections.

There were 451 renters without water and 24 renters with water among the interviewees, a total of 475. This was 18 percent of the probable 2,585 renters in the building covered.

The number of renters without water in the sample is sufficiently large that reasonable conclusions can be drawn from the sample with regard to all the significant aspects of the study. Separate analyses for owners

and for renters will provide profiles of two distinct groups, but the two groups have many similar characteristics.

The sample statistics indicate that a much larger share of owners than of renters live in one or two story building, 81 percent for owners compared with 59 percent for renters (Table 2.8). This pattern was particularly pronounced in the newer, peripheral kisms. A corollary to this is that households in buildings containing only one or two families had a much larger share of the sample than their proportionate share of the households in the area. Of all the families estimated to be living in all buildings where a family was interviewed, 26 percent lived in buildings containing only one or two families, but 54 percent of the sample was drawn from such buildings (Table 2.9). In buildings containing more than three families lived 56 percent of the families, but such buildings accounted for only 29 percent of the sample. In the buildings containing several families, most will be renters.

The owners in every kism had larger average households than the renters. Owners' families ranged in average from 6.0 persons in Matareya to 6.8 in Masr El Kadima, while the kism study average for renters ranged from 3.4 in Helwan-Tebin to 5.3 in Sayeda Zainab. The averages for all kisms were : owners, 6.4; renters, 4.9; total sample, 5.85 (Table 2.10). If owners are over represented, then the area average for all households is probably below the sample average. If the relative share of owners and renters were based on 28 percent owners and 72 percent renters, the overall average would be approximately 5.3 persons per household. The average size of household in the Cairo Governorate in the 1976 Census was 4.8 persons.

The owners also had more rooms in their dwellings than did tenants. The average for owners was 3.2 rooms, while for tenants it was 2.5 rooms. The detail by kism study area is in Table 2.10. The overall average for the sample was 2.9 rooms per household but a weighted average would be 2.7 rooms per household.

TABLE 2.8

OWNERS AND RENTERS IN STUDY SAMPLE, BY NUMBER OF STORIES IN BUILDING

Kiam Area		Sample TOTAL	Number of Households in Each Size Bldg. Number of Stories					Percent of Households in Each Size Bldg. Number of Stories				
			1	2	3	4	5	1	2	3	4	5
Matareya	Owner	153	64	61	16	10	2	42	40	10	7	1
	Renter	70	19	24	19	8	0	27	34	27	11	0
Zeitoun	Owner	78	27	30	15	6	-	35	38	19	8	-
	Renter	52	11	21	16	4	-	21	40	31	8	-
Sayeda Zeinab	Owner	12	8	3	1	-	-	67	25	8	-	-
	Renter	45	23	19	3	-	-	51	42	7	-	-
Masr El Kadima	Owner	38	18	18	2	-	-	47	47	5	-	-
	Renter	20	11	6	3	-	-	55	30	15	-	-
Maadi	Owner	89	37	36	14	0	2	42	40	16	2	-
	Renter	66	14	25	19	8	0	23	38	27	12	-
Helwan-Tabin	Owner	51	38	13	-	-	-	75	25	-	-	-
	Renter	8	5	3	-	-	-	63	37	-	-	-
Bababa	Owner	126	42	54	24	6	0	33	43	19	5	0
	Renter	79	8	24	19	23	5	10	30	24	29	6
Giza	Owner	100	28	47	20	5	-	28	47	20	5	-
	Renter	51	10	17	17	7	-	20	33	33	14	-
Shoubra El Khayma	Owner	138	45	71	17	5	0	33	51	12	4	0
	Renter	60	8	20	21	10	1	13	33	35	17	2
All Kiams	Owner	735	307	333	109	32	4	39	42	14	4	1
	Renter	451	109	159	117	60	6	24	35	26	13	1
Grand Total		1236	416	492	226	92	10	34	40	18	7	1

TABLE 2.9  
NUMBER OF FAMILIES PER BUILDING  
TOTAL SAMPLE

Number of Families In Building	Number of Buildings in Sample	Percent of Households in Sample	Total Number of Households In Sample Bldgs.	Percent of Total Households In Sample Bldgs.
1	408	31.8%	408	11.0%
2	279	21.8	558	15.0
3	219	17.1	657	17.7
4	157	12.2	628	16.9
5	59	4.6	295	7.9
6	73	5.7	438	11.8
7	23	1.8	161	4.3
8	31	2.4	248	6.7
9	11	0.9	99	2.7
10-18 <sup>a</sup>	20	1.6	220	5.9
Not applicable	2	0.1	-	-
<b>TOTAL</b>	<b>1282</b>	<b>100.0</b>	<b>3712</b>	<b>99.9</b>

Mean average number of households per building = 2.9.

<sup>a</sup> Assume nominal average of 11 households per building.

Source: Table B 9.

TABLE 2.10  
PERSONS PER HOUSEHOLD, ROOMS PER HOUSEHOLD, DENSITY FOR OWNERS AND RENTERS

Kism Area	Mean Average Number of Persons per Household		Mean Average Number of Rooms per Household		Mean Average Density Per Room		Number of Households In Sample	
	Owners	Renters	Owners	Renters	Owners	Renters	Owners	Renters
Matareya	6.0	5.0	3.3	2.6	1.8	1.9	153	70
Zeitoun	6.4	5.1	3.3	2.6	1.9	1.9	78	52
Sayeda Zeinab	6.7	5.3	1.9	1.6	3.5	3.3	12	45
Maar El Kadima	6.8	4.7	2.6	1.8	2.6	2.6	38	20
Maadi	6.5	4.4	3.2	2.7	2.0	1.6	89	64
Helwan-Tabin	6.1	3.4	3.1	1.5	1.9	2.3	51	8
Embaba	6.2	5.0	3.4	2.9	1.8	1.7	126	79
Giza	6.4	5.1	2.8	2.2	2.3	2.3	100	51
Shoubra El Khaima	6.7	4.9	3.3	1.2	2.0	4.1	138	60
<b>TOTAL</b>	<b>6.4</b>	<b>4.9</b>	<b>3.2</b>	<b>2.5</b>	<b>2.0</b>	<b>2.0</b>	<b>785</b>	<b>451</b>
<b>All Owners and Renters</b>	<b>5.85</b>		<b>2.94</b>		<b>2.0</b>		<b>1236</b>	
<b>Weighted Average</b>	<b>Owners 28%</b> <b>Renters 72%</b>	<b>5.32</b>	<b>2.70</b>		<b>2.0</b>			

When the average number of persons per household is divided by the average number of rooms per household, the results for the entire sample are identical for both owners and renters, a mean density of 2.0 persons per room. There are significant differences among the sample kism areas, however. In Shoubra El Kheima, for example, renters have a mean average density of 4.1 per room because their flats average only 1.2 rooms per household. In Maadi, on the other hand, the renters had a mean average of 1.6 persons per room compared with 2.0 for owners because renters' households have only two-thirds as many persons as those of owners. In comparison with a mean density per room of 2.0 persons, for owners and renters, in the sample, the 1976 Census reported that the Cairo Governorate mean average was 1.9, Giza Governorate was 1.8, and Kalyubia Governorate (mostly rural) was 1.8.

## 2.6 HOUSEHOLD UTILITIES

Provision of water, disposal of wastewater and toilet waste, light, heat for cooking, and the operation of household appliances are requirements for every household. The study explored each utility.

In the villages, supplying the household with water is the woman's responsibility, and the same pattern holds in all the study areas. Also, as in the villages, one frequently sees women of the peripheral areas washing laundry and kitchen utensils at the canal or at the public tap. Similarly, some men and children bathe in these canals.

The fact that residents of these areas lack potable water in their homes leads to a particular style of life, and colors many aspects of daily living including household activities, time budgets, distribution of responsibilities, and sanitation and cleaning patterns. These patterns will be discussed in detail in Chapter 4.

The areas studied are deprived of potable water and public sewers. They depend on public taps, individually installed pumps, canal or river water, or getting water from neighbors or religious institutions that have connections. Each of these systems presents problems and disadvantages which will be discussed in Chapter 4.

The problems with sewage are more serious than those caused by lack of potable water. Individuals try to solve their own problems through building underground holding tanks, but these are costly to construct, inadequate in capacity, and expensive to drain. Often they overflow. Residents try not to overload them, disposing of used water in the streets and on vacant lots.

The majority of the apartments used tanks for sewage disposal (72 percent). These tanks are dug into the ground in front of the houses. They are usually made of a rectangular hole, three metres long by two metres wide, built of red brick and plastered with cement. They have an opening of 60 cm x 60 cm, and are covered with a round or rectangular metal top. Only 21 percent of the houses are connected to the public sewage system. Other forms of sewage disposal reported included barrels--mainly tin cylinders connected to the toilets (one percent), and pipes which run between the house and a nearby drainage canal (two percent). Households that had no formal systems of sewage disposal constituted five percent of the sample.

The difference between sewage systems in individual apartments and the building as a whole is not significant. But, in general, facilities available for owners of buildings are slightly better than those available for renters.

Despite these conditions, 94 percent of the households reported that they had private toilets of some kind. The six percent who lacked a toilet altogether either used a public toilet (in the mosque), used a neighbor's toilet, or simply used the street. Though the percentage of those who do not have a toilet is very small, more renters than owners lacked toilets. Chapter 5 discusses sewage and wastewater disposal in more detail.

Electricity was available in 84 percent of the households in the sample. The lowest availability was in Masr El Kadima, 66 percent, and the highest in Shoubra El Kheima, 91 percent (Table B 17). Electricity supplies light, and it operates household appliances such as radio, television, washing machines and refrigerators. The most important appliance not operated by electricity is a butagas stove. The respondents were asked what appliances they owned. A large majority of the sample group had radios. Radios are cheap to obtain. One can purchase a battery radio in Egypt for four Egyptian

Pounds. Giza and Sayeda Zeinab are the lowest in terms of possessing a radio. Of all of the households, 22 percent in Giza and in Sayeda Zeinab lacked radios (Table B 31). Television comes next in terms of acquisition. Maadi ranks highest, 75 percent own television sets. The lowest was Giza, where only 37 percent have sets. In terms of priorities, the stove comes next to the television, but there is a marked inter-kism variation in terms of stove ownership. Matareys, Maadi, Embaba and Shoubra El Kheima are similar. About 42 percent of the households in these kisms have stoves. Less than half of this percentage in Sayeda Zeinab, Masr El Kadima and Helwan own stoves.

In spite of the lack of potable water in these areas, it was interesting that a substantial number of households do own washing machines. About 30 percent of the households in Shoubra El Kheima have washing machines, but in Helwan-Tebin only eight percent have them.

The refrigerator comes last of the articles owned, and it is also the most expensive. In Maadi, 24 percent have refrigerators, while in Helwan only three percent have them. During the ethnographic study, respondents commented that refrigerators are not sought in the houses because of the problems they raise with the neighbors. Neighbors who lack refrigerators ask those who do for cold water, and this is difficult to deny. One resident commented, "Why should I get a refrigerator? There is no extra food to put in it".

In Maadi and Shoubra El Kheima, more than 14 percent of the respondents own all of the above articles, while in Helwan there is no one respondent who owns all of the items.

## 2.7 PUBLIC SERVICES

### 2.7.1 Transportation

It is difficult to make a general statement which will characterize the layout of streets in these areas. Each area and subarea has its own pattern. Some areas have wide, straight streets which are arranged on a block basis. In others, the streets are crooked and extremely narrow. However, it is fair to say that almost all of the streets are full of

obstructions which make passage of vehicles very difficult. Sewage holding tanks are frequently built to rise above the street level to prevent vehicles from passing over them. Streets are full of garbage, damp with sewage and disposed water. As a consequence, they are characterized by smells resulting from their poor and unsanitary conditions.

Transportation to and from the areas is also important. One of the main difficulties of conducting the research was reaching the study areas. The initial plan was to pay interviewers by the interview, and to ask them to arrange their own transportation. This proved to be impossible. Buses to the areas are infrequent, and even where they do exist, they go only to the outskirts of the areas. Private mini-buses were hired to carry the interviewers. During the course of the study it was necessary to change bus companies several times, as they constantly refused to transport the interviewers once they experienced the condition of the streets in these areas. One driver commented that it would be easier to travel by boat or helicopter. Ambulances and fire trucks often refuse to enter such areas.

#### 2.7.2 Public Health

With the exception of Sayeda Zeinab and Masr El Kadima, these areas are deficient in health services. There are no public hospitals. Only the people who work in the industrial plants at Shoubra El Kheima and Helwan-Tebin have access to medical care through their jobs. Others must leave their areas to seek care. Private doctors have in some cases opened clinics in the areas, but they are working under extremely difficult conditions, the least of their problems being that they have no access to potable water in their clinics.

Residents of the areas are aware of the correlation between poor sewage disposal and disease. One resident stopped an interviewer, saying "Come and see the sewage condition in the street--I lost three of my children because of that"! Diseases associated with the deteriorating conditions of these areas indicated by the study are : typhoid, bilharzia, malaria, kidney trouble, eye trouble, and high fever and delirium.

Bilharzia (Schistosomiasis) was reported by ten percent of the households, the largest percentage for any reported disease. It is contracted from parasites (cercaria) which penetrate the skin and which are prevalent in Nile water, in canals and irrigation ditches. The parasite is eliminated in the treatment process of water treatment plants and is not present in well water. A large porportion of rural inhabitants of Egypt have contracted it. Some inhabitants of the study areas may have brought it with them in migrating from rural conditions. However, those residents of the study areas who wash dishes or clothes or bathe or wade in the canals and irrigation ditches are subject to exposure.

### 2.7.3 Education

Primary schools are almost always the only educational facilities available. Residents generally must go outside the district for preparatory and secondary education.

Table 2.11 shows the percentage of students in the kisms as a whole who go to schools out of their districts (CAPMAS 1976 figures are available only for the Governorate of Cairo).

### 2.7.4 Commercial Services

According to data from 1960, commercial enterprises were scanty in these areas, confined to providing a narrow range of commodities. Today, a wider range of goods is available, but the organization of commerce is still of village style. Various areas have certain streets which serve as markets. Vendors sell their merchandise, particularly vegetables and fruits, while sitting on the ground with their produce spread out in front of them. Specialized shops provide residents with a wide range of items and include butchers, carpenters, barbers, plumbers, and others. However, the standards of these stores and the quality of merchandise they offer are not superior to those of village stores. A substantial number of the respondents in the sample survey were engaged in such commercial activities (Table B 38).

TABLE 2.11

## STUDENTS ATTENDING SCHOOL INSIDE AND OUTSIDE THEIR KISM

Kism	Number of Students	Place of School	
		Inside Kism	Outside Kism
Matareya	129,443	79%	21%
Zeitoun	75,806	78	22
Sayeda Zeinab	68,517	82	18
Masr El Kadima	68,679	80	20
Maadi	55,707	83	17
Helwan	65,968	94	6
Tebin	6,734	89	11

## 2.8 URBANIZATION OF THE RURBAN FRINGE

The conditions in the large peripheral areas are those of rapid population growth and rapid urbanization under conditions of poverty.

These peripheral zones were basically agricultural land and often identified by the term "rurban fringe". This term does not refer solely to the fact that the expansion extended into agricultural land, but also indicates the rural lifestyle which characterizes these areas. Thus, as the city expanded, it "ate up" nearby villages, including the land and the inhabitants. The areas of Shoubra El Balad in Shoubra El Kheima, Kafr El Elow in Helwan, Ezbat El Matar and Warak El Hadar in Embaba are still vivid examples of this situation. Here one finds modern urban houses inhabited by laborers in industrial concerns next to mud houses inhabited by farmers who are still cultivating the land. All the same, urban lifestyles and housing types are spreading rapidly.

On the basis of 1960 census data, Abu-Lughod (1971) describes the peripheral areas of the metropolis as being "more rural than urban in appearance". It is true that one still finds mud brick or crudely fired brick dwellings gathered into small village-like clusters, but next to such structures one finds three and four story concrete frame buildings. It is important to note that urban expansion onto agricultural land created a pattern of land use dis-

similar to that characterizing other parts of the city. A substantial number of the inhabitants of the area are the original owners of the land. As the area became residential, the value of the land increased to the point that farming became uneconomical. Individual owners began to sell parts of their holdings, retaining lots for their own residences. While the lots which they kept for their own use were sometimes the places where they were living in village-style houses, very often they invested part of the proceeds from selling their land in urban houses of bricks and concrete. Further, people from other parts of Cairo who have saved some money (particularly workers who have worked in the oil producing countries) find that land prices in these outlying areas are not prohibitive. Ten years ago the price of one metre of land in Shoubra El Kheima was four Egyptian Pounds. This year it has reached thirty to forty Egyptian Pounds. Thus, it is not surprising to find that many of the residents of these peripheral areas are owners of their own houses.

Survey questions regarding length of residence in the area indicated that 36 percent of the persons interviewed had been there more than 10 years. Many of these people were born and raised in the area.

The 1960 data described women's clothing in these areas as basically consisting of long black gowns and black shawls. This is no longer the case. Today the women tend to dress in the casual style of the residents of the central parts of the city. These days one sees women and female children wearing casual housedresses, going to and fro in the streets carrying water containers on their heads, a common scene in any village.

The study areas are considered to be parts of the metropolitan area of Cairo, yet they are not profiting very greatly from services which one expects to find in the city. They benefit least of all from city water and sewage facilities. They are living under conditions similar to those of many parts of rural Egypt, without the advantage of village life such as communal aid and open air field situations, and are exposed to urban insecurities and transportation hazards. Thus, unlike rural migrants to the city at large, the residents of the peripheral areas not only live in a peasant style, they are also living under physical conditions which are characteristic of many villages of rural Egypt. Furthermore, "title to the land, regularized planning, utilities and/or conventional 'standard' building materials and techniques may be lacking". (Abu-Lughod, 1978, p. 3).

Modern urban planning necessitates that city expansion into an area be accompanied by various procedures. First, there must be legal rights to land usage. These involve ownership rights and rights to use the land for authorized purposes. For example, certain areas are zoned for agricultural, industrial or residential purposes, and must be utilized thusly. Second, the area must be mapped and streets laid out so as to provide for proper communication and organization. Third, main connections of public utilities such as water, sewer, and electricity need to be supplied. Fourth, public transportation should be made available. Fifth, social services such as schools, health facilities, postal service, police, and garbage collection should be established. The conditions existing in the study areas are far from abiding by the rules of proper city planning. They provide, in fact, a good example of the problems which arise from unplanned city expansion.

One of the major problems of these areas is that the government still considers some of this land to be agricultural land, and has refused to give permits for construction. Residents know, however, that once a building is erected it is difficult to get it demolished. They also realize the disadvantages of such a situation. They are not entitled to apply for water and sewer connections, as these applications require presentation of the original building permit. Since the area does not have access to water main pipes, this was not originally seen as much of a loss. However, today when the word is spreading in the area that the government intends to install main connections, landlords, particularly when they are residents of the area, show every readiness for cooperation.

The peripheral areas suffer from illegality of land use. Nevertheless, construction is spreading rapidly, without conforming to existing laws. While it is true that the land is privately owned, the owners do not have the right to build on it. This has led to deficiencies in public services, since one cannot arrange to have one's house connected to public utilities if the house was built without a government permit.

In the study areas of the inner city--Sayeda Zeinab and Masr El Kadima--there is illegal use of land of another type. In these areas inhabitants move onto government land, build houses, and consider themselves to be the owners. This tradition stems from the Islamic property law, which treats ownership of

buildings separately from ownership of the land on which they are built, and even recognizes separate ownership of individual stories or sections of a single floor. This has facilitated the firm conviction on the part of squatters that they are the lawful owners of the houses in which they live, despite their lack of title to the land (Abu-Lughod, 1978, p. 18).

Under both conditions--illegal residential use of land zoned exclusively for agriculture, and appropriation of government land--the construction of buildings is illegal. Abusers of the law are therefore anxious to complete their buildings as quickly as possible, so that legal authorities will not learn of the construction until it is a fait accompli. This hastiness of construction leads to poor structures, gives the entire area a shabby appearance, and in some cases results in quick deterioration.

The conditions found in the study areas are not necessarily unique to these areas. They may be found in some other parts of Greater Cairo. The following chapter uses a few indicators to compare these study areas with each other and with Cairo as a whole.

## CHAPTER 3

### SOCIO-ECONOMIC INDICATORS

One requirement for areas in which the Metered Water Service Connections Program will be carried out is that they be in the poorer half of the income scale of Greater Cairo. Since there is no precise census data on income by Kism or by Shiakha, several indicators of relative income positions are utilized.

The relative conditions of poverty among the study areas are also of interest in considering whether to give some areas priority over others in executing the Metered Water Program.

Four indicators of socio-economic conditions are used as a basis for comparison : income and expenditure levels, average density per room, educational attainment, and ownership of household utility articles.

Where a measure for each Kism in Greater Cairo is available the study areas have been compared with that. Where only an average for urban Egypt has been available, that was used as a basis for comparison, inasmuch as Greater Cairo represents 48 percent of the urban population of Egypt and income levels and other conditions in Cairo are probably not below the urban average for the country. Where detailed data on the Kisms of the Cairo Governorate were the only comparative data available, they were used. In the absence of any more universal data, the study area Kisms were compared among themselves, using the Kism area with the most prosperous or most advanced rating as a standard for comparison with all the others.

#### 3.1 OCCUPATIONS, INCOME AND RENT

The occupations of heads of households among respondents provide a qualitative view of the people living in the study areas. The distribution among occupations is also a background for the income data gathered. Fortunately, some comparative data for urban household expenditures in Egypt can put the data gathered here in a broader perspective. Rent is an important cost for renters and the relation of rent to income indicates the burden of housing costs. For owners, the imputed rental value of the housing they occupy can be considered an addition to gross income. The average rent per room paid by renters provides a basis for estimating the imputed rental income of owners.

The income and rental data, when compared with distribution of urban expenditure levels in Egypt, indicate where the study areas fall in the range of income conditions in Greater Cairo.

### 3.1.1 Occupations

The largest group of heads of households are production workers as craftsmen, skilled and semi-skilled workers and unskilled laborers. Many of the study areas contain major public and private industrial plants. Helwan-Tebin has iron and steel, cement and textile plants. Zeitoun has several pharmaceutical plants. Shoubra El Kheima has a number of industries, of which the best known is textiles. Many of the peripheral zones of the city have industrial plants, and it is to be expected that many workers in these plants live in the same Kism. Over forty percent of household heads fall in these production worker categories. Another 12 percent are service workers, while 10 percent are clerical workers.

Sales workers are 6 percent and proprietors of retail establishments are another 6 percent. Many of their retail establishments are small stores in the study areas.

The highest paid categories tend to be the professional and technical occupations and administrative and managerial positions. These comprise about 5 percent of the occupations reported.

Agricultural workers, fishermen and miners are two percent of the total. In over four percent of the cases, the head of the household was a housewife. Only eight household heads were reported unemployed, 0.6 percent of the total, an indication of the availability of employment opportunities.

A summary tabulation for the study is in Table 3.1. The detail by Kism is in the Appendix, Table B 38.

Only 5 percent of the household heads stated that they had secondary occupations. The majority of these occupations again fall into the categories of craftsmen, industrial laborers and workers.

TABLE 3.1

MAIN OCCUPATION OF HOUSEHOLD HEADS

Occupation	Number	Percent
Professional, technical and related occupations	26	2.02
Administrative, executive and managerial positions	34	2.65
Clerical workers	125	9.74
Proprietors of commercial and contractual organizations	9	0.70
Proprietors of retail establishments	80	6.23
Sales workers	79	6.15
Farmers and agricultural workers	26	2.00
Fishermen	2	0.15
Transportation and communication workers	82	6.39
Industrial laborers, craftsmen and production workers	523	40.70
Service workers	156	12.15
Housewives	56	4.36
Retired	57	4.44
Students	1	0.07
Disabled	3	0.23
Unemployed	8	0.62
Drafted	5	0.31
Unspecified	11	0.85
<b>TOTAL</b>	<b>1283</b>	

### 3.1.2 Income

Income is the most direct index of economic status of population. However, it is also one of the most difficult items to collect information about from a field survey. Respondents in Egypt are reluctant to give information about their incomes. There is always the fear of taxation, envy, or prevention of possible gains if the real income is revealed. Here the bias in information is definitely in terms of under-estimating rather than over-estimating. In many cases the figures mentioned for the income include only the cash money that the respondent receives as a salary or wages. If he owns his house, the imputed rent is not calculated in the income. If he has a farm, the revenue from it is not reported. Overtime and income from secondary occupations are often not mentioned. Furthermore, fringe benefits and "in kind" incomes are not included. (That is also a possible defect in other quick income surveys).

Each household interviewed was asked the primary and secondary occupations of the head of the household and also of every other member of the household who worked (Questionnaire A-22). Monthly incomes earned by each person in each occupation were also gathered. In tabulation, the total income from all primary occupations in the household was derived. A separate total was derived for incomes from secondary occupations. The total incomes per household from primary occupations were tabulated by income groups in Table B 39. Income from secondary occupations was entered in brackets in the same table.

Ninety percent of the respondents did provide an estimate of their monthly income. The income reported was tabulated in income brackets and a summary for study areas is presented in Table 3.2.

The mean average monthly income per household is approximately L.E. 48. Secondary income with a mean average of L.E. 30 was reported by 3.4 percent of the respondents. This amount spread over all respondents would increase the mean average per household by L.E. 1.0 per month.

A detailed analysis, by kism, for owners and renters without water, and for all owners and renters with water, is presented in Table 3.3. The mean averages of income from main occupations for owners and renters in each kism are presented in Table 3.4. The income from secondary occupations would add approximately L.E. 1 per month to these averages.

TABLE 3.2

MONTHLY INCOME FROM MAIN OCCUPATIONS<sup>a</sup>

Income Bracket L.E.	Primary Occupation			Number with Secondary Occupation		
	Number	%	Cumulative %	Number	%	Cumulative %
Under 10	21	1.6	1.6	5	11.4	11.4
10 - 20	108	8.4	10.1	18	40.9	52.3
20 - 30	268	20.9	30.9	10	22.7	75.0
30 - 50	414	32.3	63.2	6	13.6	88.6
50 - 75	210	16.4	79.6	2	4.6	93.2
75 - 100	66	5.1	84.7	2	4.5	97.7
100 - 200	59	4.6	89.3	1	2.3	100.0
200 T	9	0.7	90.0	0	-	-
Unknown	128	10.0	100.0	-	-	-
Total	1283 <sup>b</sup>			44 <sup>c</sup>		

a Covers total household income from all workers.

b For these reporting income the mean average monthly income was approximately L.E. 48,000.

c Only 3.4 percent reported income from a secondary occupation. The mean average monthly income from secondary occupations was hardly L.E. 30. For all respondents this would increase the mean average by L.E. 1,000 per month.

Source : Table B 39

TABLE 3.3-1  
INCOME FROM MAIN OCCUPATION  
OWNERS WITHOUT WATER

KISM /(Bracket Mid- point) <sup>a</sup>	Under 10 LE (8)	L.E./MONTH REPORTED							NUMBER IN SAMPLE			MEAN KNOWN L.E.
		10-20 (15)	20-30 (25)	30-50 (40)	50-75 (62.5)	75-100 (87.5)	100-200 (150)	200 +Over (220)	KNOWN	UNKNOWN	TOTAL	
Matareya	2	13	27	54	30	2	8	1	137	16	153	47.56
Zeitoun	4	7	20	25	8	5	3	0	72	6	78	42.01
Sayeda Zeinab	0	0	2	5	3	0	0	0	10	2	12	43.75
Masr El Kadima	1	2	14	11	7	0	1	1	37	1	38	44.20
Maadi	1	6	12	41	15	3	4	0	82	7	89	46.80
Helwan-Tebin	1	5	16	12	9	3	2	0	48	3	51	43.50
Embaba	1	12	23	31	20	8	9	0	104	22	126	50.99
Giza	1	11	15	28	15	11	3	2	86	14	100	51.84
Shoubra El Kheima	3	6	30	42	24	9	13	0	127	11	138	53.40
TOTAL	14	62	159	249	131	41	43	4	703	82	785	48.48

<sup>a</sup> For computing a mean L.E. 8 is assumed average of under L.E. 10 and L.E. 220 is assumed average of L.E. 200 and over; otherwise bracket mid-point used in computing mean.

TABLE 3.3-2  
INCOME FROM MAIN OCCUPATION  
RENTERS WITHOUT WATER AND SUMMARY TABULATION

KISM /(Bracket Mid- point) <sup>a</sup>	Under 10 LE (8)	L.E./MONTH REPORTED							NUMBER IN SAMPLE			MEAN KNOWN L.E.
		10-20 (15)	20-30 (25)	30-50 (40)	50-75 (62.5)	75-100 (87.5)	100-200 (150)	200 +Over (220)	KNOWN	UNKNOWN	TOTAL	
Matareya	1	6	14	24	14	3	1	0	63	7	70	42.79
Zeitoun	2	3	15	17	6	3	2	1	49	3	52	46.40
Sayeda Zeinab	1	6	6	14	6	3	3	1	40	5	45	52.89
Masr El Kadima	0	5	6	3	1	1	0	1	17	3	20	42.06
Maadi	0	5	15	19	15	5	1	0	60	6	66	45.58
Helwan-Tebin	0	1	5	1	1	0	0	0	8	0	8	30.31
Embaba	0	7	14	31	18	3	1	1	75	4	79	46.03
Giza	0	7	11	17	6	2	1	0	44	7	51	40.00
Shoubra El Kheima	2	4	13	26	5	2	0	0	52	8	60	37.09
<b>TOTAL</b>	6	44	99	152	72	22	9	4	408	43	451	43.92
<b>Plus Owners TOTAL</b>	14	62	159	249	131	41	43	4	703	82	785	48.48
<b>GRAND TOTAL W/O WATER</b>	20	106	258	401	203	63	52	8	1111	125	1236	46.80
Owders with water	1	1	4	4	2	2	5	1	20	3	23	77.65
Renters with water	0	1	6	9	5	1	2	0	24	0	24	51.04
<b>Total with water</b>	1	2	10	13	7	3	7	1	44	3	47	63.14
<b>TOTAL SAMPLE</b>	21	108	268	414	210	66	59	9	1155	128	1283	47.43

<sup>a</sup> See 3.3-1

TABLE 3.4  
 INCOME FROM MAIN OCCUPATION  
 OWNERS AND RENTERS  
 SUMMARY BY KISM

KISM	Mean Averages L.E./Month			Known Responses in sample <sup>a</sup>		
	OWNERS	RENTERS	TOTAL	OWNERS	RENTERS	TOTAL
Matareya	47.56	42.79	46.06	137	63	200
Zeitoun	42.01	46.40	43.79	72	49	121
Sayeda Zeinab	43.75	52.89	51.06	10	40	50
Masr El Kadima	44.20	42.06	43.53	37	17	54
Maadi	46.80	45.58	46.28	82	60	142
Helwan-Tebin	43.50	30.31	41.62	48	8	56
Embaba	50.99	46.03	48.91	104	75	179
Giza	51.84	40.00	47.83	86	44	130
Shoubra El Kheima	53.40	37.09	48.66	127	52	179
TOTAL	48.48	43.92	46.80	703	408	1111

<sup>a</sup> Households reporting income "unknown" were: owners, 82; renters, 43.

The income of the head of household from the main occupation was compared with the total family income from main occupations and it was such a large part that a separate tabulation was not warranted. Two recent studies of workers and residents in various parts of Helwan tabulated the income of head of household separately from total family income and found that the head of household accounted for 80 to 84 percent of the total family income (NCSCR, 1978 and 1979).

No recent income survey for Greater Cairo is available for comparison. The U.S.A.I.D. recently updated the 1974-75 Urban Household Expenditure Survey prepared by CAPMAS, bringing it to 1979 levels by an escalation to allow for inflation and assuming continuation of the same income distribution pattern. For the poorer parts of the population expenditures are very close to total incomes. The World Bank analysis of the household expenditure survey assumes for lower income population no direct taxation and a savings level of close to 10 percent of income (World Bank, 1978). Greater Cairo is 48 percent of urban Egypt and the Cairo income level reasonably can be assumed to be as high as that for all of urban Egypt.

The results of this survey are shown in Table 3.5. The data were read from a graph with fifty entries (Figure 3.1), each equaling an income range of L.E. 100 a year, so the entries must be considered approximate, but for rough comparative purposes they are adequate.

With data of this degree of approximation a comparison of income distribution is more meaningful than a comparison of mean averages. A comparison of the quartile levels of the national urban survey with similar brackets of the 9 area study follows :

<u>Urban Survey</u>		<u>9 Area Study</u>	
Under L.E. 57	- 25 percent	Under L.E. 50	- 63 percent
L.E. 57 - L.E. 84	- 25 percent	L.E. 50 - L.E. 75	- 16 percent
L.E. 84 - L.E. 122	- 25 percent	L.E. 75 - L.E. 100	- 5.1 percent
L.E. 122 - top	- 25 percent	L.E. 100 and over	- 5.3 percent

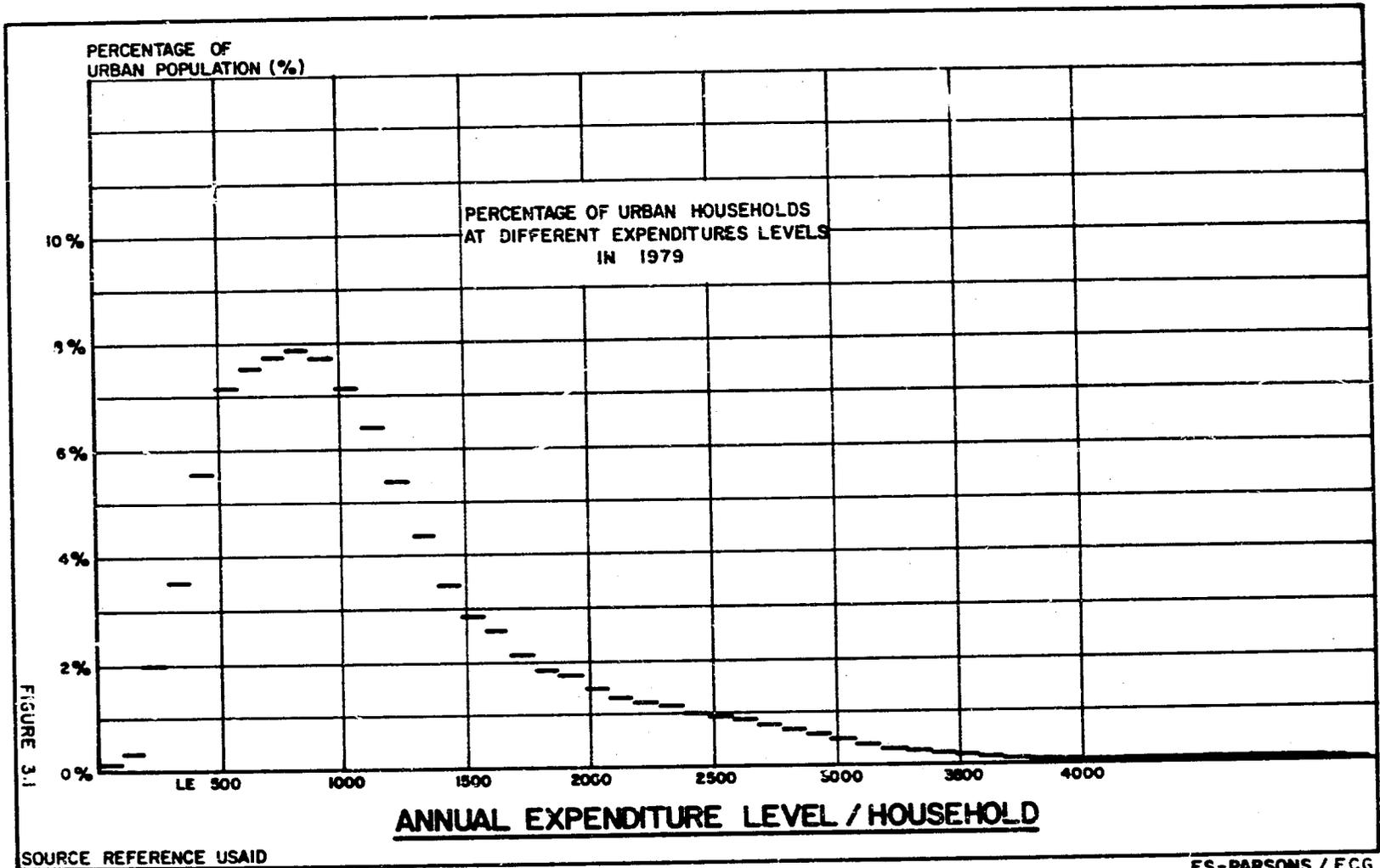
TABLE 3.5

## URBAN HOUSEHOLD EXPENDITURE DISTRIBUTION , 1979

Expenditure Bracket L.E./Year	Percent of Households		Expenditure Bracket L.E./Year	Percent of Households	
	Bracket	Cumulative		Bracket	Cumulative
0-99	0.1%	0.1%	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	4000-4999	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			
<p>Lowest quartile L.E. 0 - 683 = L.E. 57/Month  Midpoint 1004 = L.E. 84/Month  3rd quartile 1459 = L.E.122/Month</p>					

Source: USAID Memorandum, based on CAPMAS 1974-75 urban household expenditure survey adjusted for inflation. Household defined as a nuclear family.

3-11



With 63 percent of the 9 area study respondents reporting income under L.E. 50 per month, when the lowest quartile of the national survey rises to L.E. 57 per month, there can be no question that the study areas collectively fall in the bottom half of the income distribution of Greater Cairo.

The 9 area kism where reported income is significantly above the group average is Sayeda Zeinab where seven of the sixty-five respondents reported an income of L.E. 100 per month or over. Yet 54 percent of Sayeda Zeinab respondents reported incomes under L.E. 50 per month. The mean average for Sayeda Zeinab is approximately L.E. 59 per month. However, this is considerably below the L.E. 84 midpoint of the national urban average. The income level for the study area section of Sayeda Zeinab is still in the bottom half of the Cairo scale.

A ranking of the nine study areas from highest to lowest income is best done by comparing the percentage of study area incomes under the national midpoint of L.E. 84 per month. To allow for second incomes, imputed rent and unreported income the study bracket level of L.E. 75/month can be assumed comparable to the national median. In Table 3.6 the percentage of households reporting income under L.E. 75 are shown in Column 1. This number is divided into 50 percent, the national percentage under the medium income, and multiplied by 100 to get the index number in Column 2. The highest index number represents the smallest percentage under L.E. 75, and the highest percentage over L.E. 75. A ranking of the 9 kisms from highest (1) to lowest (9) is in Column 3.

TABLE 3.6

## PERCENTAGE OF REPORTED INCOME UNDER L.E. 75/MONTH

Kism	(1) % of Housholds Reporting Under L.E. 75/Month	(2) Index 50% ÷ Col (1) x 100	(3) Rank Order
Matareya	82	61	5
Zeitoun	82	61	5
Sayeda Zeinab	72	69	1
Masr El Kadima	86	58	9
Maadi	83	60	7
Helwan-Tebin	85	59	8
Embaba	77	65	3
Giza	74	68	2
Shoubra El Kheima	78	64	4

Source Table B 39

### 3.1.3 Rent

The number of households in the sample paying rent was 457, but an additional 18 households were living rent free in a building owned by a relative. Of the total of 475 non-owners, 24 were connected to water and 451 were not. The average renter had 4.9 persons in the household and occupied 2.5 rooms. (See Table 2.4). Monthly rent was reported in brackets (e.g. L.E. 3-5) and averages have been computed by using the mid-point to represent the bracket, (e.g. L.E. 4). The average rent paid was approximately L.E. 5.50, which was between 12 and 14 percent of average income. As a share of income, this level is generally considered acceptable in household expenditure surveys.

Since "key money" is often a requirement for securing an apartment the reported rent may not represent the true cost of housing. The study did not attempt to find out what key money may have been paid to secure an apartment.

The averages by Kism are shown in Table 3.7. The lowest rents reported are in Sayeda Zeinab where length of residency is comparatively long (36 percent at 20 years and over, Table 2.3), and the advantages of rent control would be the greatest. The highest rents are in Shoubra El Kheima and Embaba which have large sections of very new areas.

The average rent per room in Shoubra El Kheima is L.E. 5.65, which is twice as high as any other Kism, which may explain why that Kism averages only 1.2 rooms per household, which is the lowest number for all Kisms.

The average rent per room for all Kisms is L.E. 2.55. An estimate of the value of imputed rent for owners can be made by multiplying this times the average of 3.2 rooms per owner (from Table 2.11), which gives a total of L.E. 8.20. From this gross imputed rent the owner must cover repairs and maintenance and any interest on outstanding loans related to the dwelling.

The average reported income of owners was about ten percent above that of the renters, or around L.E. 48 per month. The addition of gross imputed rent, would place this at L.E. 56 per month or L.E. 675 per annum. This is just barely at the top of the lowest quartile for urban household expenditures, as shown in Table 3.5. The owners in the study area clearly fall in the lower half of Greater Cairo income distribution.

TABLE 3.7

RENT: AVERAGE PER HOUSEHOLD, PER ROOM

BY KISM

	(1)	(2)	(3)	(4)
Kism	Number of Renters <sup>a</sup>	Monthly average Rent L.E.	Average Number of Rooms	Average Rent Per Room L.E.
Matareya	69	5.80	2.6	2.20
Zeitoun	56	5.60	2.6	2.15
Sayeda Zeinab	51	2.30	1.6	1.45
Masr El Kadima	21	3.40	1.8	1.90
Maadi	64	5.90	2.7	2.20
Helwan-Tebin	8	4.00	1.5	2.65
Emhaha	80	6.70	2.9	2.30
Giza	49	4.50	2.2	2.05
Shoubra El Kheima	59	6.80	2.2	5.65
<b>TOTAL</b>	<b>457</b>	<b>5.40</b>	<b>2.3</b>	<b>2.55</b>

a. Includes 11 households actually paying rent (18 households live rent free as relative of owner).

### 3.2 PERSONS PER ROOM

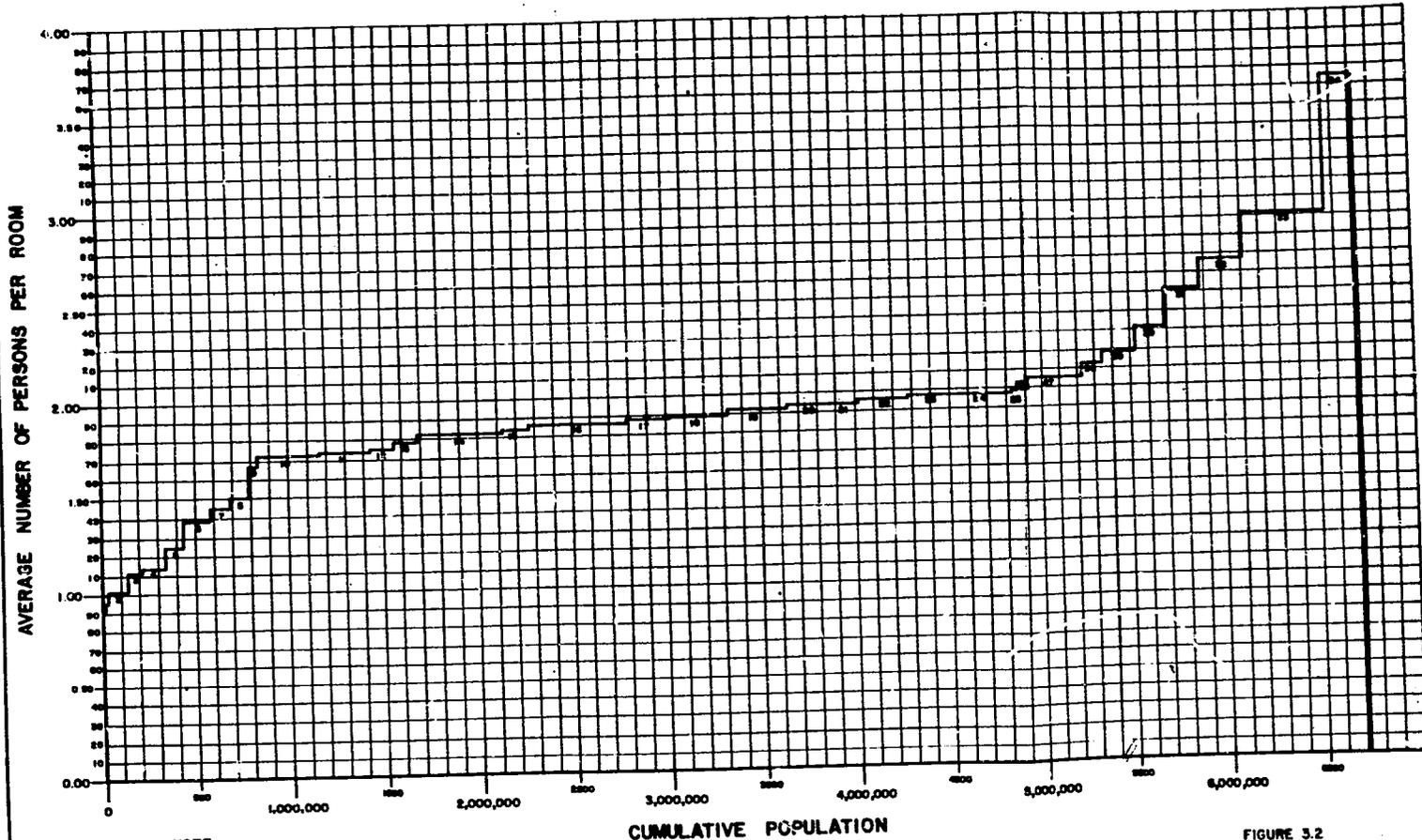
Crowded housing conditions prevail in a large part of Cairo. Among 34 Kisms the mean density per room is 1.9 persons. Such crowded conditions are an aspect of poverty. The study areas in general fall in the more crowded half of the population.

Many studies of crowding and human behavior suggest that increased crowding leads to various forms of psychological and social disorganization. Schorr (1970) maintains that over-crowding affects self-perception, and leads to pessimism and passivity, and an increase in the incidence of illness and death. Chombarde de Lauve (1959) argues that habitable space per person in a dwelling unit has a strong effect on levels of tension among the members of the family in the dwelling unit. Galle *et al.* revealed a positive correlation between crowding and fertility. Crowding is associated with an increase in fertility. They also see such pathological effects of high density as increase in mortality rate, ineffectual parental care, development of delinquent behavior, and psychiatric disorders (1972:28). Loring (1956, 1964 and 1967) suggests that the only housing and neighborhood feature that is constantly associated with social disorganization is high density. Similarly, Gruenbar (1954) found a correlation between high density and hospital admissions for psychoses.

Definitely the crowded housing conditions in the sample study affect the patterns of social relations and individual responses to these patterns. For example, in such crowded conditions children in the study areas are given greater freedom to leave the home, and this response may tend to weaken the surveillance that parents have over children. In the sample study, it was found that the most common place for children to play is in the streets. In Sayeda Zeinab, Maer El Kadima and Giza, with the highest densities in the sample group, there was found to be the highest incidence of children playing in the streets. In these areas, about 93 percent of the respondents said that their children play in the streets.

Data on persons per room by Kism are arrayed from the lowest density, Maer El Nil (0.95) to highest density in the second Kism Shoubra El Kheima (3.65), shown in Figure 3.2. (Detailed data from the 1976 Census are in Appendix Table C 1). Density data for each shiakha containing part of a study area appears in detail in Appendix Table C 2. The sample study detailed report on persons and rooms per household appears in Appendix Table B 42. The

# AVERAGE NUMBER OF PERSONS PER ROOM BY KISM - LOWEST TO HIGHEST



**NOTE:**  
THE SMALL NUMBERS IDENTIFY INDIVIDUAL  
KISMS LISTED IN TABLE C I.

FIGURE 3.2

3-17

relevant data for the nine Kism study areas are brought together here in Table 3.8.

The quartile limits for the Kism data for all of Greater Cairo are as follows :

	<u>Persons Per Room</u>
Top Quartile	0.95 to 1.78
Median	1.90
Third Quartile Limit	2.05
Bottom	3.65

Using the median of 1.90 as 100, an index has been constructed for the study areas by dividing the study area average into 1.90. The lower the study area density, the higher the index value.

Earlier, it was determined that average density for both owners and renters without water for the whole sample was the same, 2.0 persons per room (Table 2.11).

When the study areas are given a rank order from lowest density or highest index value as 1, the lowest index and poorest rank order falls to the Sayeda Zainab study area, which ranked first in the income index (Table 3.6). The new peripheral Kisms offer the opportunity for more space to low-income working population. The shortcoming of the measure is obviously that the quality of living space within one room can vary greatly from an elegant dining room in Kasr El Nil to a mud-brick hovel on the bank of a drainage canal. But it adds some perspective to the measures of poverty in the study areas.

### 3.3 EDUCATION AS AN INDEX OF SOCIO-ECONOMIC CONDITION

Studies on developing countries have projected the utility of education as an index to socio-economic status. Abu Lughod (1971) believes that the single best index to way of life, values, degree of modernity, and social class position of sub-groups in Egypt is the female literacy rate. It is associated with higher income in addition to other cultural variables. Male education was also found to represent the real differential power in the labor market (p. 245). Furthermore, those who send their children to school should have enough financial resources to do so. It is true that Egypt has a system of free public schooling. However, many costs are involved, such as those of school uniforms,

**TABLE 3.8**  
**ROOM DENSITIES IN STUDY AREA AND GREATER CAIRO**

Kism	Persons per Room			(4) Index for Sample 1.90 $\pm$ Col(3) x 100	(5) Study Area Rank Order
	(1) Whole Kism	(2) Shiakhah Including Study Area	(3) Study Area Sample		
Matareya	1.86	1.92	1.76	108	1
Zeitoun	1.96	2.39	1.97	96	5
Sayeda Zeinab	1.87	2.26	3.22	59	9
Masr El Kadima	1.89	2.28	2.66	71	8
Maadi	1.74	1.98	1.89	101	4
Helwan-Tebin	1.97	2.33	2.02	94	6
Embaba	1.93	- <sup>a</sup>	1.79	106	2
Giza	1.96	2.22	2.27	84	7
1 <sup>st</sup> Shoubra El Kheima	2.66	2.66	1.82	104	3

<u>Greater Cairo Quartile limits</u>	
Top	0.95 to 1.78
Median	1.90
3 <sup>rd</sup> quartile lower limit	2.05
Bottom	to 3.65

<sup>a</sup> Shiakhah boundaries not available.

Sources: Kism and Shiakhah data, Tables C 1 and C 2; study area data, Table B 42.

books and stationery. Parents who send their children to school should also be able to spare their labor. Child labor is not uncommon in Egypt.

In comparison to all Kisms in Cairo, the study areas have a relatively low educational level. Table 3.9 shows the ranking of the illiteracy rate by Kism for the Cairo Governorate, (figures for Greater Cairo are not yet available).

The quartile limits for illiteracy in Cairo are as follows :

	<u>Males</u>	<u>Females</u>	<u>Total</u>
Top	36.7 %	47.7 %	51.0 %
First Quartile	28.4	54.7	40.3
Median	<u>24.0</u>	<u>46.8</u>	<u>36.8</u>
Third Quartile	17.8	41.1	29.0
Lowest	6.5	17.6	12.2

For the Kisms as a whole, Sayeda Zeinab and Zeitoun show the lowest illiteracy. Masr El Kadima and Mataraya are close to the median, and the others show higher illiteracy.

When the restricted study areas are compared, however, the rate of illiteracy rises appreciably. The average illiteracy rate for all the study areas is 46 percent and for females only it is 56.6 percent. Both of these fall in the highest quartile of illiteracy in the Cairo Governorate. Summary data for the total sample is as follows :

<u>Total Population (6 years +)</u>		<u>Illiterates</u>	<u>%</u>
Males (6+)	3 283	1196	36.4
Females (6+)	<u>2 947</u>	1669	<u>56.6</u>
TOTALS	6 230		46.0

The average illiteracy for the urban population of Egypt reported by the 1976 Census was 36.0 percent. This is taken as a base for comparing the level of illiteracy in the study area with a national average. (See Table 3.10). The higher index numbers reflect higher rates of literacy.

TABLE 3.9

Illiteracy Rate by Sex for  
Cairo Governorate %

<u>Males</u>		<u>Females</u>		<u>Total</u>	
Kism	%	Kism	%	Kism	%
1. <u>Tebin</u>	36.7	<u>Tebin</u>	67.5	<u>Tebin</u>	51.0
2. <u>Gamalia</u>	35.6	Boulak	60.3	Boulak	46.1
3. Boulak	32.8	Shourabeya	59.2	Shourabeya	43.4
4. Khalifa	29.1	<u>Helwan</u>	55.0	Khalifa	41.4
5. Shourabeya	28.9	<u>Matareya</u>	54.5	<u>Maadi</u>	40.7
6. Darb El Ahmar	28.4	<u>Maadi</u>	54.3	Gamalia	40.3
7. Bab El Shareya	28.4	Khalifa	53.8	Bab El Shareya	39.8
8. <u>Maadi</u>	28.1	Bab El Shareya	51.6	<u>Helwan</u>	39.4
9. Mousky	26.0	Mousky	50.7	Darb El Ahmar	38.8
10. <u>Helwan</u>	25.4	Darb El Ahmar	49.6	<u>Matareya</u>	38.6
11. <u>Masr El Kadima</u>	35.0	Hadayek El Koba	46.9	Mousky	37.8
12. <u>Matareya</u>	23.7	<u>Masr El Kadima</u>	46.6	<u>Masr El Kadima</u>	35.7
13. Ezbakia	20.0	Gamalia	45.4	Hadyek El Koba	32.8
14. Hadayek El Koba	19.6	Rod El Farag	42.1	Rod El Farag	30.6
15. Rod El Farag	19.5	<u>Zeitoun</u>	41.6	<u>Sayeda Zeinab</u>	29.8
16. <u>Sayeda Zeinab</u>	18.8	<u>Sayeda Zeinab</u>	41.1	Ezbakia	29.0
17. Shoubra	18.4	Sahel	40.4	<u>Zeitoun</u>	29.0
18. <u>Zeitoun</u>	16.9	Ezbakia	39.8	Shoubra	28.8
19. Wayly	16.8	Shoubra	39.4	Sahel	28.2
20. Sahel	16.4	Wayly	38.0	Wayly	26.8
21. Abdeen	15.5	Abdeen	36.1	Abdeen	25.6
22. Nasr City	12.9	Zaher	28.2	Nasr City	19.4
23. zaher	10.3	Nasr City	25.8	Zaher	19.2
24. Kasr El Nil	7.8	Hiliopolis	22.0	Heliopolis	14.8
25. Heliopolis	7.7	Kasr El Nil	20.5	Kasr El Nil	14.1
26. Nozha	6.5	Nozha	17.6	Nozha	12.2
1st quartile	28.4		54.7		40.3
median	<u>24.0</u>		<u>46.8</u>		<u>36.8</u>
3rd quartile	17.8		41.1		29.0

TABLE 3.10  
RATE OF ILLITERACY FOR STUDY AREAS

Kism Area	(1) Illiterate %	(2) Index 36% ÷ Col. 1 <sup>a</sup> x 100	(3) Rank
Matareya	41.7	86	2
Zeitoun	44.6	81	4
Sayeda Zeinab	56.2	65	8
Maar El Kadima	64.3	56	9
Maadi	38.1	94	1
Helwan-Tebin	51.8	69	6
Embaba	50.6	71	5
Giza	52.8	68	7
Shoubra El Kheima	41.7	86	2

<sup>a</sup> Index based on 36% illiteracy rate for urban population of Egypt, 1976 Census; 36% is divided by the study area illiteracy rate to give higher index values to lower rates.

The more complete data on educational attainment gathered in the study areas (see Table B 40), are converted into an index in Table 3.11. The rank order from this more comprehensive analysis varies moderately from that in Table 3.10.

The level of illiteracy in all the study areas places them in the poorer half of the population of Cairo.

#### 3.4 ARTICLES OWNED

A final indication of relative degree of affluency or poverty are the household articles owned, which are capital expenditures a bit beyond the level of absolute necessities. Respondents were asked about ownership of vehicles - bicycles, motorcycles, and automobiles (see Table B 31); and about ownership of specific household articles - radio, television, refrigerators, stoves and washing machines (see Table B 30).

TABLE 3.11

## EDUCATION INDEX

Number of Years Spent in Education Taken as Weight

	Years	Weight
Not complete primary	4	0.05
Complete primary	6	0.07
Not complete preparatory	8	0.10
Complete preparatory	9	0.11
Not complete secondary	11	0.14
Complete secondary	12	0.15
Not complete University	14	0.18
Complete University	16	0.20

<u>Multiply % level of education by wts.</u>			
	(1)	(2)	(3)
	Results	Index <sup>a</sup>	Rank
Matareya	4.848	33	3
Zeitcun	3.770	72	6
Sayeda Zeinab	3.104	59	8
Masr El Kadima	2.178	42	9
Maadi	4.889	93	2
Helwan-Tebin	3.123	60	7
Embaba	3.964	76	5
Giza	4.524	86	4
Shoubra El Kheima	5.240	100	1

<sup>a</sup> Uses the highest kism as 100.

Source: Table B 40.

The results can be readily compared with the preliminary results of the national survey of urban conditions performed by the National Center for Social and Criminological Research for U.S.A.I.D.

	<u>National Urban</u>	<u>Study Area</u>
	% Ownership	% Ownership
Butagas Heater	10.5	not queried
Automobile	12	2
Telephone	22	none
Refrigerator	35	14
Butagas Stove	72	36
Electricity	84	84

An area by area comparison reveals considerable variations. Maadi leads with respondents owning the largest percentage of each of the household articles. In Helwan-Tabin, Giza and Masr El Kadima, ownership was at the low end of the scale. Radios are owned by a very large majority of households, television sets were next in popularity, being owned by over half the households in six areas. Entertainment and a sense of communication with the outside world are provided by both items.

An index of ownership of these household articles has been constructed, using average prices as relative weights (see Table 3.10). The index has been converted to a national base by comparing the top area, Maadi, with the national urban average for refrigerators and stoves shown earlier.

Again, all areas fall below the national urban median.

### 3.5 COMBINED INDEX OF SOCIO-ECONOMIC POSITION

The four measures of income, persons per room, degree of illiteracy and articles owned can be combined into a single index by using weights for each measure. The selection of the proportionate share of influence to allocate to each measure is clearly a matter of judgement. The goal is to determine the relative level of poverty or affluence of each area in relation to an average for Greater Cairo. Judgement involves the relative significance of the data and their probable reliability.

TABLE 3.12

## INDEX OF ARTICLES OWNED

<u>Article</u>	<u>Price</u>	<u>Wtz x 100</u>
Radio	10 pounds	0.02
TV	160 "	0.32
Ref.	180 "	0.36
Stove	70 "	0.14
Washing machine	80 "	0.16
		1.00

<u>Kism</u>	<u>Study area Index</u>	<u>Index with national Base<sup>a</sup></u>	<u>Rank</u>
Matareya	38.8	54	3
Zeitoun	30.6	43	6
Sayedza Zeinab	31.4	44	5
Maar El Kadima	25.6	36	7
Maadi	46.0	64	1
Helwan-Tebin	18.0	26	9
Embaba	39.0	54	4
Giza	24.2	34	8
Shoubra El Kheima	40.0	56	2

<sup>a</sup> Maadi had the highest percentage of ownership. For refrigerators and stoves, ownership in Maadi was 64 percent of the national urban average. The other index numbers are converted to a national base by dividing by the Maadi area index of 46 and multiplying by 64.

The weights assigned here are

income	40%
density	15%
education	30%
articles owned	15%

The index numbers for each measure are repeated in Table 3.13. From the data any reader can apply other weights and examine the change in result.

TABLE 3.13  
COMPOSITE INDEX

	Income	Density	Literacy	Articles Owned	Composite Index
Matareya	61	108	86	54	74.5
Zeitoun	61	96	81	43	69.6
Sayeda Zeinab	69	59	65	44	62.6
Masr El Kadima	58	71	56	36	56.1
Maadi	60	101	94	64	77.0
Helwan-Tebin	59	94	69	26	62.3
Embaba	65	106	71	54	71.3
Giza	68	84	68	34	65.3
Shoubra El Kheima	64	104	86	56	75.4

The highest Kism is Maadi with an index of 77 while the lowest is Masr El Kadima with an index of 56. The rank order for the Kism's follows :

Maadi	1
Shoubra El Kheima	2
Matareya	3
Embaba	4
Zeitoun	5
Giza	6
Sayeda Zeinab	7
Helwan-Tebin	8
Masr El Kadima	9

All Kiems are substantially below an urban average for Egypt, or Greater Cairo, which would be approximately 100. There is no question that all are in the lower half of the income scale. The top ~~one~~ are part of the rapidly growing urban fringe of Cairo, where continued population growth is expected because of the availability of space. Sayeda Zeinab and Masr El Kadiya study areas are pockets of poverty in the central city. Helwan-Tebin is a distant outer fringe of a rapidly growing industrial center.

## CHAPTER 4

### WATER CONSUMPTION PATTERNS

#### 4.1 BRIEF HISTORICAL DESCRIPTION OF THE WATER SUPPLY SYSTEM

Medieval Cairo depended for its water supply on two main sources, Nile water and well water. Water from the Nile was considered to be remarkably good, but that of wells was slightly brackish. At that time Cairo had no public water system and water was provided by numerous sakkas or water vendors who carried water in goat skins called Kirbah. Many of these sakkas also supplied passengers on the streets of the metropolis with water (Lane, 319).

The only public water service in the old city was supplied by two main religious institutions: the mosque and the sabil. All mosques are provided with washing facilities to fulfill the function of ablution. There is a tank in every mosque which is a raised reservoir with spouts around it, from which water falls. This service is basically directed to the male population which use the mosque for prayers.

The sabil is also a religious building which is used to fulfill the charitable function of supplying passers-by with fresh drinking water. It is an elaborately decorated building having numerous water containers. Nowadays various people in different sections of Cairo place water jars called sirs in the streets for passers-by to drink from. This is also called sabil. (The whole concept of giving water as charity will be discussed in a later section, as it has a great bearing on water distribution system).

It was in 1865 that a French company was awarded the franchise for providing public water supplies to the city (Greater Cairo Wastewater Master Plan). The expansion of the system of purified water had gradually decreased, thus increasing dependence on the brackish often polluted shallow wells within the city.

In 1903 the intake source of the city water was switched from the Nile to deep wells in the Rod El Farag section. As this water proved unsatisfactory because of its mineral taste, construction was started in 1906 on a rapid sand filter plant for treatment of Nile River water (Abd Lughod, 125; Waterwork Master Plan, Final Report). Today, about three-quarters of the potable water comes from the Nile through 11 water treatment plants, and one-quarter from 10 well fields, five of which are associated with treatment plants.

#### 4.2 SOURCES OF WATER FOR THOSE WITHOUT PIPED WATER

As previously noted, twenty-five percent of the population of the contiguous urban area of Greater Cairo live in buildings not connected to the potable water supply.

Lack of potable water has contributed to the existence of a particular way of life which is shared by the different study areas irrespective of their location. The residents of these areas have similar general orientations to their daily problems which are manifested in similar methods of utilizing the available water resources. They have established distinctive patterns of interaction which revolve around the acquisition and disposal of water. These kinds of relationships do not exist among groups which have access to potable water in their homes. Such distinctive modes of behaviour and interaction are recognizable on the level of the family, as well as among neighbors and other residents of the area.

On the level of the family, the daily routine of its members is affected by meeting the family's need for water. There develops a distinctive division of labor among the members of the family with respect to supplying the house with its water.

Similarly, in these areas, neighbors have to share common water sources and personnel. This necessitates certain organizational structures. Pumps from shallow wells and public water taps are a common feature of these areas. The roles of the water vendor and the tap guard are also unique to areas which have no water.

This chapter will address itself to the familial and communal patterns of water usage and consumption.

Residents of the study areas have access to three major sources of water :

- a. canal or river water;
- b. groundwater through pumps from shallow wells;
- c. potable water through general taps.

Certain areas are known to utilize one source more than the others depending on the availability of each source. This study does not attempt to analyze the quality of each type, but rather it presents the residents' perceptions, patterns of usage, and preferences for each type.

#### 4.2.1 Canal Water

Many of the study areas were originally rural and still maintain some of their rural residents. The usage of canal water is a continuation of the traditional pattern of water acquisition in Egyptian villages.

In rural Egypt every village has access to the river or some sort of irrigation canal. Villagers are accustomed to accomplishing a great deal of their domestic activities by the bank of the river or canal. Washing the laundry and the kitchen utensils is mostly done alongside the water source. This pattern saves a substantial amount of time and energy involved in the delivery system of water from the source to the house location. It also solves the problem of disposal of used water.

When washing by the bank, there is no effort exerted to economize on the amount of water used, for free and continuously running water is available. It is believed that one gets a cleaner laundry if it is washed in the canal. Similarly, kitchen utensils are rubbed with mud and rinsed more thoroughly if they are cleaned by the river bank. In the absence of sinks and drainage systems, if laundry and kitchen utensils are washed in the home, it makes a mess. Besides the practical reasons for preference of undertaking domestic activities by the bank of the river or canal, there is also the social aspect which involves women getting together and socializing while performing their domestic chores.

In the study areas this rural pattern of daily living is still in existence wherever a canal is close at hand. However, there are some variations. In some villages, this source of water is used for both drinking and other domestic activities. There is even a traditional preference for drinking river water because of its taste. In the study areas, there is very little or no usage of the canal and river water for drinking purposes. Residents are aware of the disadvantages of drinking this water. In Helwan-Tabin, for example, residents complain that the nearby industrial firms throw their waste chemicals into the river. While the residents feel disgusted at the idea of drinking such

water, it appears that they do not realize the dangers involved in using it for washing laundry and kitchen utensils.

Among the sample there were only two percent reported that they do their laundry by the canal, and five percent reported that they wash their kitchen utensils in the canal (Tables B 19 and 20). These figures probably are underestimated. Observations in the field do not substantiate them. Many women still do their domestic activities along the canals, especially if there is a canal close to their homes. Furthermore, men and male children bathe and wash themselves in these canals.

Through the ethnographic study, it became clear that urbanites who have come to live in these peripheral zones look down on the residents who use the canal for domestic activities. They consider them to be low-status villagers. Such acts involve exposing one's laundry and one's body to passers-by. They also entail walking in the streets in wet clothing as a consequence of the method of washing.

#### 4.2.2 Groundwater through Pumps

In most of the areas pump water is used as a substitute and an additional source rather than as the main source of water. The use of a pump is more popular in areas which lack a public tap, or whenever a public tap is far away. Very few areas depend entirely on pump water. It was observed that in Matareya, in the area known as Arab Abu Tawila, there are no public taps, and everyone in the sample depends entirely on pump water. In this area landlords install pumps in the entrance of the house for the use of all the residents. There are many communal pumps in the streets. In Matareya there is a shop which specializes in selling and installing pumps. It was learned from this plumber that it costs about seventy Egyptian Pounds to have a pump put in the house, and that he usually digs a shallow well 13 metres deep for the pump.

In many of the study areas when a landlord starts to build his house, he installs a pump for use during construction, and later he leaves it for communal use. Otherwise, most pumps are installed by individuals for use by the residents of the house.

In Shoubra El Balad in Shoubra El Kheima, a pump was built expressly for communal use and to relieve the pressure on the one public tap available in the area. This pump was dug 20 metres deep and people use it for all purposes.

Residents are also aware that pumps are not dug deep enough, which exposes the water to the underground seepage of sewage tanks. A man in Warak El Hadar (Embaba) commented that the residents have rashes because they drink pump water which is close to sewage tanks.

In areas which have access to other sources of water besides pumps, the residents are very specific about the purposes for which they use pump water. The following are their specifications :

- a. pump water could be used for washing kitchen utensils, floors, and vegetables;
- b. with laundry, pump water is used only for rinsing. It should not be used with soap for this "kills the suds";
- c. when bathing, it is to be used only for washing the body, but not the hair, as it causes the hair to be coarse and dry;
- d. pump water should not be used for cooking--it gives the food an unfavorable taste and color. It also spoils the taste of tea.

#### 4.2.3 Tap Water

Tap water is the most highly valued and used type of water. There are many sources and types of access to this water :

- a. public tap constructed by the government;
- b. tap of a mosque;
- c. public tap constructed by members of the community;
- d. tap of an establishment;
- e. tap of a neighbor.

Each of these sources gives the same quality of water, but each has its own means of existence, code of use, and system of payment.

The Governorate is responsible for constructing public taps in areas lacking water. These taps take different forms. The most traditional is a stand having one huge tap. Next to this tap is a small shack for the tap guard, who is appointed by the Governorate for the purpose of opening and closing the tap as well as organizing the distribution of water. This most traditional kind is still existing in Masr El Kadima and Sayada Zeinab. Another kind of government tap is the stand having multiple taps. There are usually three or four taps on such a stand. A tap guard is also assigned to this kind of tap, and he too is a public official. A third form of government tap is the fire tap. This is also a government source of water, but residents take the liberty of using it. It is usually left unattended. ,

Government taps, with the exception of the fire tap, are usually located beside a canal or a drainage ditch.

More than any other institution, mosques are a major source of water for community use. Whenever a mosque is constructed in an area, it is given priority in connecting it with water. The existence of a mosque in a locality is often the activator for installing main connections to the area. It is often cited with great astonishment and pessimism that a mosque has been constructed for some years and no water has been connected to it. The area which has such a situation is one in which residents feel that there is very little hope of their getting water.

Men and male children often use the mosque's water facilities for ablutions. In order to keep the women out of the mosque, responsible people of the mosque extend a tap to the side of the mosque for public use. Sometimes a pipe from the mosque is extended to form a general public tap in the street. Under these circumstances, the mosque guard becomes the tap guard, and residents of the locality pay him for maintenance and organization. The amount he gets varies from one area to another. In Matareya, for example, he is paid 25 P.T. per family, but in Giza he is paid only 10 P.T. In all areas the money that goes to the mosque guard never exceeds 25 P.T. per family per month.

A substantial number of the public taps in the study areas were built by members of the community through community self-help. This procedure is often implemented through the formal local council. This mode was very much

active during the election time. During the political campaigns residents would request a public tap, and candidates collected donations from rich residents and supporters for this purpose. Three public taps were installed in Sayeda Zeinab during the last (1979) elections. Another form of pooling people together for constructing public taps is through the mosque. In Bygam in Shoubra El Khelma, the area is served by only one government tap and suffers a great deal from lack of water. One day a cattle merchant announced that he was ready to pay half of the expenses of constructing a general tap if the people of the community would pay the other half. On that same day, he was able to collect from those praying the amount needed. The expense of constructing the tap was 120 Egyptian Pounds.

In cases where there is a public tap constructed through community co-operation, the residents of the area assign the job of tap guard to a poor resident in the neighborhood, such as a widow or a woman with a sick husband.

Establishments in the study areas often allow nearby residents to use their water. In Giza, for example, a gas station often allows residents to get water, but with some difficulty, as the laborers there, though wanting to help, are always afraid of their employer, who does not consent. In Helwan-Tebin also a firm has extended a pipe and a tap in the street for the local consumption of the residents.

Getting water from a neighbor is another important but intricate source of water. Some neighbors refuse to do this service altogether. Few do it on a friendship basis. Some others give water as a charity, and a number of them have an organized system of selling water.

Residents who deny water to their neighbors are often accused of being greedy. For their part, these residents feel that exposing their house to the neighbors causes them great trouble in terms of cleaning the place and the spilled water, in addition to the cost of water.

Some residents give water as a charity--sawab (giving water for free) is considered to be a highly valued deed for which the donor is rewarded when he dies. In such a case the owner extends a pipe out of his building, and neighbors help themselves to water. This situation involves no tap guard, as

the owner controls the water flow from inside his home. Those who sell water usually do so either by the container or through a particular arrangement with a neighbor such as connecting a hose and in this case the payment is by the month.

Among the sample the residents used all the above sources and figures below show the various sources that they use for drinking and other water.

<u>Source</u>	<u>Drinking</u>	<u>Non-Drinking</u>
Neighbors in the same building	.3%	.3%
General tap for all residents of the building	.3	.3
General pump for all residents of the house	4.0	9.0
Neighbor in another house	25.6	23.0
From canal or Nile	.3	1.0
Public tap	54.0	50.0
Mosque	4.3	4.3
Pump in neighbor's house	2.0	5.0
Combination of sources	10.2	7.4

The length of time it takes to walk to the nearest public tap in each study area is shown in Table 4.1. In five areas 25 percent of respondents reported 15 minutes or more. Respondents reporting no public tap were 60 percent in Giza and over 30 percent in Zeitoun and Embaba.

#### 4.3 VIOLENCE AND CONTROL AT THE SOURCE OF WATER

In the village setting going to the source of water is a chance for social gathering where women exchange news, jokes, and accomplish work in the open air. In the study areas it is no fun going to the source of water. There is hardly a day which passes without a fight which involves the women at the water tap. Often these fights get heated and extend to involve the men of the area who come to the rescue of their female relatives. These fights occur because there are usually more women waiting than the number of taps available. It sometimes takes a woman an hour to have access to a tap.

TABLE 4.1  
Nearest Public Tap (minutes)  
(percent of total)

Kism	Not know	5 m walk	10 m walk	15 m walk	not walking distance	No Public Tap	15-30 Mn walk	30+ Mn.	Not app
Matareya	.4	24.3	38.7	26.0	1.3	6.8	.9	.9	.9
Zeitoun	.7	18.4	8.1	30.1	5.1	34.6	-	2.9	-
Sayeda Zeinab	-	49.2	27.7	15.4	1.5	1.5	-	1.5	3.1
Masr El Kadima	-	44.1	20.3	20.3	3.4	6.8	1.7	3.4	-
Maadi	.6	29.7	29.0	20.0	7.1	9.7	1.3	2.6	-
Helwan-Tebin	-	45.0	46.7	3.3	-	3.3	-	1.7	-
Embaba	-	16.5	22.6	24.1	2.4	31.1	1.4	1.9	-
Giza	.6	6.3	10.7	17.0	2.5	60.4	.6	1.3	.6
Shoubra El Kheima	.5	41.1	33.7	21.3	-	2.0	1.0	.5	-

In the process of getting water, women are exposed to pushing, stepping over each other's feet, spilling water on each other, and receiving insults from the tap guard. Several women reported that they lost their pregnancies as a consequence of being pushed by other women at the tap. Two women showed bruises all over their bodies caused by being pushed against the water containers of other women. One woman had a deep cut in her arm because of the crowd. A man said that he went to prison because he killed the water guard in a fight over water.

Television programs affect the rush hours on the water tap. Whenever there is an Arabic film, residents make every effort to get their water supply before it starts. As the time for the film approaches, and if there is still a crowd by the tap, extra pressure is exerted to accomplish their task in time for the film. It is then that fights are apt to occur. It is important to note that though not every family has a television set, nearly every family has access to a set through the neighbors or relatives who invite them to see popular programs. Elderly women and those not interested in such programs take advantage of such a situation and get their water then.

The crowd and violence at the water tap forces some of the residents to get their water supply after midnight. A resident of Upper Egyptian origin commented, "I cannot expose my wife to the risks and disrespectful atmosphere at the water tap. I accompany her at 1:00 a.m., wait for her by the tap until she finishes all the rounds she needs for the household consumption, then we return together".

The tap guard is the person in charge of the tap and is responsible for exerting control over the residents. He is responsible for maintenance of the tap, setting a time for opening and closing it, in addition to organizing the crowd coming for water. The performance of those responsibilities differs from one area to another, depending on the personality of the guard and the kind of tap he is guarding.

Guards of government taps consider themselves to be public officials having working hours from 8:00 a.m. till 2:00 p.m. One of their official responsibilities is to take care that the water is not constantly running. They have a lock to the tap and are responsible for opening it for the residents'

use and closing it whenever it is not being used. In practice, the guard opens the tap at 8:00 a.m., leaves it running all the time, and then locks it at 2:00 p.m. without necessarily being around all the time. Closing the tap at 2:00 p.m. causes great annoyance to the residents. For example, at Shoubra El Kheima a woman was observed crossing the railway line and the Cairo-Alexandria road to get water from the canal across the highway because she said she had missed getting water before the guard closed the tap.

In one of the areas the tap guard has full control over the tap. He has a list of all the people who use this tap. Each household should pay him 10 P.T. monthly. Also, every now and then he asks for money for repairing the tap or the wall of the stand. Thus, he gets 25 P.T. from renters and 50 P.T. from owners for such repairs. He also had developed a system for women who are well-to-do and don't want to be delayed. These women pay him a pound each month, and in return he gives them priority in the queue. Landowners who are starting a new construction, appeal to him for water and he allows them to connect a hose to the tap for the entire day, and in return they pay him a pound daily. Such a guard is continuously present around the tap to see that his system is enforced.

In one of the areas at Shoubra El Kheima, the tap guard is an old man who spends all his time, day and night, by the tap. He complains of the quarrels and fights of women, and tries his best to prevent them during the day. At night he leaves the tap open because there are "decent women" who from necessity have to get water, and they come for it at night.

In one area of Dar El Salam, the residents depend entirely on water vendors because the tap guard opens the tap very early in the morning (4:00 a.m.) and closes it at 6:00 a.m. Only the water vendors are ready to get up at such odd hours. The tap guard charges these water vendors two pounds a month.

In another area in Dar El Salam, the tap guard, who is a public official, takes no money from the residents. This was confirmed by the residents themselves. The tap guard commented that if he took any money from these people he would not be able to control them. Taking money from them would give them power over him. The only money he gets for the tap is that needed for repair. It is then that he collects five piasters from each woman in order to buy a new tap or repair the old one.

Taps which have guards, whether governmental, community of mosque taps, are supposed to be free taps. The money paid is not considered to be the price of water, but for maintenance and supporting the person responsible for it. There is a system of zoning involved in the use of a particular tap which is also organized by the tap guard. Each tap is supposed to serve a particular locality. Women who come from other areas are denied water by the tap guard.

The major disadvantage of the public taps is the fights among the women. The one main control mechanism over these fights is for the tap guard to lock the tap until the fight is over.

Because of these disadvantages, some residents resort to other sources of water. In Helwan-Tehin, for example, when it is not possible to get water from the general tap, women go to the Helwan Silk Firm and get free water from its tap. Sometimes this entails walking for more than a kilometre.

At Sayeda Zeinab when water is not available from the public tap, residents go to the mosque for water. Not all mosque guards appreciate this act. One woman said, "We are insulted by the mosque guard, but we get the water in spite of his insults. What else can we do?"

Another alternative for avoiding the abuses of the general tap system is to get water for money from a neighbor. Though many of the sample resort to this means of getting water, as Tables B 23 and 24 show, yet there are certain restrictions to this system. Residents know that it is forbidden by law for individuals to sell water to others. Also, those who give water free are often afraid that they'll be accused of selling water. A lady in Dar El Salam told the following story :

We know it is forbidden to give water, but I kept on giving water because the people needed it. I was threatened by the water department representative that he would cut off my water and make me pay an indemnity of 50 pounds. So, I closed my door and would not give water. The neighbors revolted and went to the police and made a complaint. The police officer came to me and said, "Give water, and if anyone objects, let me handle it".

#### 4.4 TYPES OF WATER CONTAINERS

Traditionally, Egyptian villagers used pottery containers for carrying and storing water. This pattern to some extent still persists in the villages. In the study areas, using pottery containers for carrying water no longer exists, but residents still use pottery containers for storing water. Another traditional water container is the kerba, which is a goatskin. This kind of container is presently used only by professional male water vendors called sakka. Three of these professionals were interviewed in Ssyeda Zeinab.

The most common type of water container in the study area is the cylindrical tin with two handles at the top. In Ssyeda Zeinab it is given the name "zinka", because originally these containers were made of zinc, but now they are made of cheap tin. These bastillas come in different sizes. The ones which are of manageable size for an adult to carry, hold 20 to 25 litres of water. Larger ones which take up to 100 litres are also available, but they are used for storing water. About 98 percent of the women in the study areas use the bastilla for getting water, carrying it on their heads.

There are many shops in the study areas which sell these containers. The 20 litre container could cost 150 piasters, and the price increases with the size. There are also several people selling pottery jars in these districts.

Clean water for drinking and cooking is most often stored in an oval shaped water jar known as the zir. These zirs are big and heavy, and are not cleaned very often. A copper cup or pan is used to get water from them. Smaller pottery jars called kola are filled from the zir and put in an airy place for drinking.

Different bastillas are used for different purposes. Certain containers are assigned to getting water, and they are not used for other purposes. Another bastilla is used to get water from the pump. If it were to be used for other purposes, the taste of the water would be spoiled. A third container is needed for the used water until it can be disposed of. Another container could be assigned to boiling the laundry.

#### 4.5 WHO GETS THE WATER?

Supplying the house with water is a female responsibility. The mother and her female children divide this job among them. As the girls of the family grow up, they assume total responsibility for this activity. About 90 percent of the water is delivered by females (Table B 22). Men never do this job except under extreme circumstances, such as a widower with no female children. In such cases the man never fills his container when there are women around the tap. He usually does it at night, so as to avoid the embarrassment of being among the women. While conducting an interview with a male resident who gets his own water, there were other men standing with us. They commented that they are trying to convince the widower to remarry so as to have someone to fetch water for his house.

A dressmaker who moved to live in Embaba said that it took her a whole year to learn how to carry the bastilla on her head.

Girls who go to school usually supply the house with water after finishing their school day. A father in Giza said that his own daughter failed in school last year because of getting water, which left her hardly any time for studying.

Families who can afford to pay, hire a water vendor for the job. About 10 percent of the families utilize a paid person for getting them some or all of their water.

#### 4.6 WATER VENDORS

The water vendor is a traditional role which was on its way to extinction, but it has been revived in these peripheral areas of the city. In this section are discussed the condition and job hazards of a sakka (male water vendor) and a malaya (female water vendor).

Shehata Mohamed Sakka

My job is as a sakka. I inherited it from my father. I've been working as a sakka for the last fifty years. I was born in 1901. I start my day at 8:00 a.m. and return home at 2:30 p.m. after delivering 20 to 25 kerbas of water. When I get into my house, I fall on the floor from exhaustion, and stay like that for an hour not knowing what is going on around me.

I never use the public tap. I cannot compete with the pushing of the impolite and rough women there. I buy the water from a resident who has water. I pay 1 P.T. for each kerba, and I sell it for 5 P.T. ... The kerba holds at least 60 litres of water ... it is made of goatskin. The goat's skin is taken to the tannery after the goat is killed, where it is cleaned and the hair removed. I take very good care of my kerba. If a hole opens in it, I patch it with a piece of rubber. The kerba and my health are my capital. I take good care of my kerba, but I can do nothing about my health.

Mohamed was then asked about his development in this profession, and he continued :

I was born in Abu Teg (Upper Egypt). We used to get the water from the Nile in four kerbas, put them on a donkey's back, and distribute them to customers. During those days we were not paid in cash. In the maize season we were paid in maize, in the wheat season in wheat, and so forth. Public officials in the village were the only ones who paid us in cash. When the taps were first introduced in Upper Egypt, we used to get water from them, but the soldiers would run after us, as these taps were meant to be fire caps.

I came to Cairo in 1942, but didn't find what I dreamt of. Instead of the donkey carrying the kerba, I carry it on my back... .

In the past, each public tap had a guard sitting in a shack next to it, and a lock that controlled it. We never found water running like that in the street. In those days there were also no malayas. Women then were strong, and each one got her own water, and sakkas served only the well-to-do families. Now women are lazy and they hire other women to do the job. Malayas are usually poor women who cannot find a house to serve. They try to make a living out of delivering water.

He was asked about his relations with his customers, and with great satisfaction he continued :

My customers know me, and I have known them for years. I take the water to the house and they pay whenever they feel ready. I know that they will pay one day. There are no restrictions on my getting into the house at any time ... the men of these families trust me.

When he was asked about his reaction to the installation of potable water, he sighed, "I won't die of hunger--God will provide".

The role of the malaya is a relatively new role which is emerging to meet the demand of the recent lack of water in the city. In all of the study areas we found that no one would take the job of malaya except the very needy women who are unqualified for any other work. The following is an account of the experiences of a typical malaya :

When my husband fell sick and started losing his sight, our income decreased and I decided to go to work. A neighbor talked me into that profession. She said "It is better than doing something bad".

I go out for work at 7:00 a.m. and return at 2:00 p.m. I am responsible for supplying my customers with fresh water as well as helping them get rid of used water. I usually accomplish twenty turns of clean water and ten turns of dirty water per day.

I charge my customers per month. It varies from one customer to another depending on the floor they live on. Those on the third floor I charge 25 P.T. per container per month. Those who live on the second floor I charge 20 P.T. per container and those on the first floor I charge only 15 P.T.

I get the water from the public tap. The guard there forms two queues. One for the ordinary residents and one for the malayas. He is considerate ... and realizes that we make a living out of this profession.

I am getting very tired of this job, she continued. She pointed at her eyes and said : "Look, my eyes are bulging out from carrying the bastilla ... I'm losing my sight". Then she uncovered her head and pointed at its top : "I have lost all my hair in the middle". The skin of her head was extremely dry and looked exactly as the heel of the foot.

#### 4.7 USAGE AND CONSUMPTION PATTERNS OF WATER

Water usage and consumption in the study area differs from one day to the other depending on daily needs. On washing day they consume three times as much as on ordinary days. The pattern in these areas is that they wash their laundry at least twice a week. Washing day is also the day for bathing for members of the family so they would change their underwear and clothes to be washed. Table B 20 shows where the laundry usually takes place. Among the sample more people do their laundry in their rooms or hall than in any other

place. Renters more than owners follow this pattern, most probably they don't have a special place for washing and cooking.

During field trips, the study team observed several instances where a woman had brought her laundry, washing pan, container and a Primus stove and washed her laundry by the general tap. The figures in the sample show that such a pattern occurs. This is especially true when residents want to wash a rug or a bedspread. Variation in the amount of water used exists from one area to the other. Distance to the source of water is a contribution factor. In Masr El Kadima, for example, where residents have to go up the hill carrying their containers of water, the water consumption is definitely affected.

Per capita consumption per day is shown in Table 4.2. It ranged from 36 litres per capita per day in Shoubra El Kheima to 21 l/c.d in Embaba. In the later kism large areas have no public tap and taps for other areas are very far from residential areas (Table 4.1).

TABLE 4.2  
AVERAGE POTABLE WATER CONSUMPTION IN STUDY AREAS  
LITRES PER CAPITA PER DAY

Matareya	31
Zeitoun	26
Sayeda Zeinab	29
Masr El Kadima	28
Maadi	25
Helwan-Tebin	26
Embaba	21
Giza	24
Shoubra El Kheima	36

Water consumption also varies according to the season of the year. In summer there is a greater consumption of water than in winter. The study was made during the hottest months of the year and it reflected the maximum water usage. It should be noted that the per capita consumption per day does not include the amount of water that residents get from pumps which are installed in their homes. The water consumption here pertains only to the water that they carry. Water pumps are more common in Embaba and in some areas in Matareya and Shoubra El Kheima.

#### 4.8 COST OF WATER CONSUMPTION

Paying for water in these areas could be very costly if one does not get his own supply or if the area of residence does not have access to a free source of water. Those who get water from neighbors for money and those who hire a water vendor pay the most. It costs these people sometimes more than three Egyptian Pounds a month to pay for water. The cost for those who pay money ranges between 1 P.T. per container to 10 P.T. In Masr El Kadima, it costs about 10 P.T. for one container. (See Table 4.3). The cost of getting water from a neighbor is often underreported. It is illegal for individuals to sell water thus respondents often denied that they pay their neighbor.

Besides the money that one pays, there is the energy cost involved. Residents of these areas carry an average of seven bastillas each day. Each one contains 20 litres, i.e., 140 litres per day. In addition, residents must carry this same weight to throw away. They usually walk with this load for a long distance. About 23 percent walk with this load for ten minutes and 24 percent walk a distance of fifteen minutes. Few even walk for half an hour. (See Table 4.1). The walking distance is more problematic if one lives in a hilly area.

Another important issue when considering the cost is the amount of time needed daily for getting water. If one person is responsible for getting seven containers of water daily and she lives within ten minutes walk from the tap, this means that it would take her twenty minutes to make one round trip. Thus, she needs 140 minutes or two hours and twenty minutes to get her daily supply of water. If a woman has to wait ten minutes for her turn seven trips would require three and one-half hours. If she lives further away, it takes even longer. Some residents said that it takes them four hours daily to get their water supply.

TABLE 4.3

POTABLE WATER CONSUMPTION IN LITERS PER FAMILY PER DAY AND COST PER MONTH, BY KISM

MATAREYA

Monthly Cost in pt.	Water from neighbor		Water from tap		Water from mosque		Average Consumption per household per day	
	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households
Not pay	166	43	174	115	35	1	171	159
Under 25	-	-	173	25	-	-	173	25
25-	75	4	280	1	-	-	116	5
50-	78	5	156	2	126	13	117	20
100-	117	5	158	4	126	6	131	15
150-	-	-	112	5	290	2	163	7
200-	102	1	184	6	230	2	185	9
300+	-	-	198	8	175	1	195	9
<u>ZEITOUN</u>								
Not pay	127	6	190	37	302	2	187	45
Under 25	-	-	455	1	-	-	455	1
25-	98	23	-	-	-	-	98	23
50-	106	31	121	4	-	-	108	35
100-	184	12	103	4	-	-	164	16
150-	224	7	150	2	-	-	208	9
200-	133	2	79	3	-	-	101	5
300-	352	2	160	2	-	-	256	4

TABLE 4.3 (Cont.)

POTABLE WATER CONSUMPTION IN LITERS PER FAMILY PER DAY AND COST PER MONTH, BY KISH

SAYEDA ZEINAB

Monthly Cost in pt.	Water from neighbor		Water from tap		Water from mosque		Average consumption per household per day	
	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households
Not pay	144	1	159	50	-	-	158	51
Under 25	-	-	-	-	-	-	44	1
25-	44	1	-	-	-	-	108	1
50-	108	1	-	-	-	-	-	-
100-	-	-	-	-	-	-	132	1
150-	-	-	132	1	-	-	72	2
200-	108	1	36	1	-	-	260	3
300+	-	-	260	3	-	-	-	-
			<u>MASR EL KADIMA</u>					
Not pay	88	1	176	46	-	-	174	47
Under 25	-	-	-	-	-	-	106	6
25-	106	6	-	-	-	-	171	6
50-	189	5	84	1	-	-	170	2
100-	170	2	-	-	-	-	44	1
150-	-	-	44	1	-	-	-	-
200-	-	-	-	-	-	-	-	-
300+	-	-	-	-	-	-	-	-

TABLE 4.3 (Cont.)  
 POTABLE WATER CONSUMPTION IN LITERS PER FAMILY PER DAY AND COST PER MONTH, BY RISM

MAADI

monthly Cost in pt.	Water from neighbor		Water from tap		Water from mosque		Average Consumption per household per day	
	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households
Not pay	102	13	130	75	137	2	126	90
Under 25	-	-	124	2	-	-	124	2
25-	72	4	214	6	-	-	157	10
50-	120	21	101	4	175	1	119	26
100-	164	13	169	2	-	-	165	15
150-	188	8	95	2	-	-	165	10
200-	106	2	230	6	-	-	199	8
300+	109	2	128	6	-	-	123	8
<u>HELWAN-YEBIN</u>								
Not pay	88	1	151	48	155	4	150	53
Under 25	-	-	40	1	-	-	40	1
25-	-	-	-	-	-	-	-	-
50-	-	-	88	1	-	-	88	1
100-	-	-	88	2	-	-	88	2
150-	-	-	220	1	-	-	220	1
200-	-	-	-	-	-	-	-	-
300+	-	-	276	1	-	-	276	1

TABLE 4.3 (Cont.)

POTABLE WATER CONSUMPTION IN LITERS PER FAMILY PER DAY AND COST PER MONTH, BY KISM

EMBABA

Monthly Cost in pt.	Water from neighbor		Water from tap		Water from mosque		Average Consumption per household per day	
	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households
Not pay	92	79	110	85	115	10	102	174
Under 25	88	1	100	4	60	1	91	6
25-	76	11	49	3	65	1	69	15
50-	99	19	44	1	-	-	96	20
100-	145	12	-	-	-	-	145	12
150-	118	5	102	4	-	-	111	9
200-	119	10	155	3	-	-	189	13
300+	158	4	141	5	-	-	148	9
<u>GIZA</u>								
Not pay	126	15	156	29	106	25	130	69
Under 25	22	2	-	-	-	-	22	2
25-	99	12	-	-	132	1	161	13
50-	122	39	110	2	64	1	120	42
100-	213	15	-	-	44	4	177	19
150-	164	9	-	-	-	-	164	9
200-	244	1	-	-	-	-	244	1
300+	270	6	132	1	100	2	216	9

TABLE 4.3 (Concl.)

POTABLE WATER CONSUMPTION IN LITERS PER FAMILY PER DAY AND COST PER MONTH, BY KISM

SHOUBKA EL KHEIMA

Monthly Cost in pt.	Water from neighbor		Water from tap		Water from mosque		Average Consumption per household per day	
	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households	Liters	No. of Households
Not pay	215	30	201	61	-	-	206	91
Under 25	-	-	204	49	153	6	199	55
25-	199	4	163	16	153	15	163	35
50-	302	3	173	3	-	-	238	6
100-	448	1	240	1	-	-	344	2
150-	264	1	160	5	-	-	177	6
200-	-	-	26	6	-	-	26	6
300+	88	1	948	1	-	-	518	2

## CHAPTER 5

### PATTERNS OF WASTEWATER DISPOSAL

"Getting us water? Great! What about sewage"? This and other similar comments were addressed to the interviewers in nearly all of the study areas. Residents were happy to get water, but they were also aware of the sanitation problems which would result if water were to be introduced without an adequate sewage system.

Going through the study areas, one has to be careful where he is stepping. One might stumble into an open sewage ditch. If he avoids that, he is apt to step into a sewage puddle. Very often, stepping stones are placed in the street to facilitate passage. Passers-by have always to be on the alert to what might be thrown from a balcony or from the entrance of a house. A bucket of used water could be splashed in the street at any minute. Why does such a condition exist? What are the choices available to the residents regarding disposal of wastewater?

#### 5.1 SEWAGE SYSTEM

The public sewage system for the city at large is overloaded and residents of the metropolis constantly complain of recurrent sewage seepage into the streets. The situation is far worse in the study areas. Most of the study areas lack access to public sewage facilities. Less than 20 percent of the sample group depend on the public sewage system. The rest resort to private means. There are various forms of private sewage systems. Some are more common in a particular area than others, depending on the location of the houses, the type of soil, and the financial condition of the residents.

In the study areas, three types of private sewage systems were identified : tanks, pipes and barrels.

##### 5.1.1 Tanks

Tanks are the most common sewage system in the study areas; 72 percent of the study sample depend on this system for sewage disposal. Two types of tanks are known and utilized in these areas. One is called khazan and the other biara.

The khazan involves forming a rectangular ditch in front of the house. The standard ditch is three metres long by two metres wide and two metres deep. The bottom is covered by a cement base, but the sides are built with red brick and plastered with cement. The top is covered either with a vault of red brick or a flat concrete cover. An opening of 60 cm x 60 cm is allowed for drainage purposes, and this is covered with a cast iron top.

The biara is constructed similarly, but without the cement base. It is dug very deep until sand or water are reached. It does not have a cement base, so as to allow for absorption of the wastewater into the sand. The seepage of the water into the underground soil reduces the cleaning requirement. In Masr El Kadima, for example, the soil allows for the absorption of excess water. Residents there prefer to use the biara, but they don't usually dig very deep, and instead of using red brick and cement for building it, they use limestone to allow for more absorption. This, however, has two disadvantages. In areas which depend on pump water and if the wells are not dug deep enough, there is the danger that pump water will be contaminated by seepage from the biara. Also, if the houses are old, this seepage may also affect the construction.

There are certain communal rules for constructing a tank. The tank should be built in front of one's house. It should not exceed in length the owner's building. The owner of the house is responsible for building and paying the expenses of the tank. They are usually constructed at the time of construction of the building. The average cost for establishing a tank of either kind is about 150 Egyptian Pounds. During the field survey, it was noticed that in many areas such as Matareya, Shoubra El Kheima, Zeitoun and Embaba, the sewage tanks were a lot higher than the street. This is usually done for two reasons. First, to reduce the seepage into the street. Second, to hinder the passage of cars and carts over the tanks, in order to protect them from destruction. This pattern creates a great deal of obstruction in the streets and gives the area a particular physical characteristic.

#### 5.1.2 Pipes

Residents who live by a drainage canal, especially those of Matareya, take the liberty of connecting sewage pipes from their houses to the canal. As these canals are often used for other purposes, many residents object to this system.

Another form of piping out sewage is performed through individual or community efforts. A resident in Sayeda Zeinab said that he connected a pipe from his house to the main sewer line. In this area, the main sewer lines are called "magary 'aiha", i.e., "straying sewers". In Zeitoun another form of pipes has been formed. These pipes have been established by the residents. They connect the sewage tanks of the various houses by pipes, and these were connected at the end to the main sewer lines. In order to perform this process, the pipes were placed on the level of the ground and covered by cement. Thus, passing through the streets of this area, one notices an elevated pipe which follows the curves of the streets and alleys. This process was very costly, and members of the community voted money for it.

### 5.1.3 Barrel

A few residents use a toilet pit which is connected to a barrel. The barrel is emptied whenever it is full.

### 5.1.4 Houses with No Sewage System

About five percent of the sample households have no access to any system of sewage disposal. This situation is mostly found in Masr El Kadima and Sayeda Zeinab, where the streets are very narrow and do not allow for the construction of tanks. Also, the buildings in these areas are old, and were not connected to the public sewage system.

The difference between sewage systems in individual apartments and the building as a whole is not significant. In general, facilities available for owners of buildings are slightly better than those available for renters. The following tables compare the sewage conditions in houses and apartments.

HOUSE SEWAGE SYSTEMS %

<u>Category</u>	<u>Public</u>	<u>Tanks</u>	<u>None</u>	<u>Pipe/ Canal</u>	<u>Barrel</u>	<u>Total</u>
Owners	20.7	72.2	4.0	2.2	1.0	785
Renters	19.1	72.7	6.2	1.8	0.2	451

### APARTMENT SEWAGE SYSTEMS %

<u>Category</u>	<u>Public</u>	<u>Tanks</u>	<u>None</u>	<u>Pipe/ Canal</u>	<u>Barrel</u>	<u>Total</u>
Owners	20.2	72.1	4.5	2.2	1.0	785
Renters	18.6	72.3	7.3	1.6	0.2	451

#### 5.1.5 Toilets

Despite these conditions, 94 percent of the households reported that they had toilets. More renters than owners lack toilets. Masr El Kadima and Sayeda Zeinab lack this facility more than any other kism, as indicated by the table that follows :

#### TOILET IN APARTMENT, BY OWNERS AND RENTERS %

<u>Category</u>	<u>Yes</u>	<u>No</u>	<u>No Response</u>	<u>Total</u>
Owners	95.9	4.1	0.0	785
Renters	90.2	9.5	0.3	451

As shown in Table 5.1, a number of those who have access to toilets share them with other families. About 17 percent of the residents share a toilet with others (Table 5.2). The mean number of those sharing a toilet shows that there is a significant difference between owners and renters in this respect. More renters than owners share a toilet. (Table 5.3).

However, the kinds of toilets varied, including the western type of seat toilet, a large floor tile with a hole in the middle, pits in the ground with wooden covers, tin barrels with wooden chairs fitted to them, and plastic or tin pans in the ground. The six percent who lacked a toilet altogether either used a public toilet (in the mosque), used a neighbor's toilet, or simply used the street.

TABLE 5.1  
TOILET IN APARTMENT BY KISM

Kism		Yes	No	Total number
		(percent)		
Matareya	1	98.0	2.0	153
	2	95.7	2.9	70
Zeitoun	1	94.9	5.1	78
	2	96.2	3.8	52
Sayeda Zeinab	1	75.0	25.0	12
	2	71.1	28.9	45
Maar El Kadima	1	94.7	5.3	38
	2	65.0	35.0	20
Embaba	1	96.0	4.0	126
	2	97.5	2.5	79
Giza	1	95.0	5.0	100
	2	84.3	15.7	51
Helwan	1	94.1	5.9	51
	2	87.5	12.5	8
Maadi	1	97.8	2.2	89
	2	93.9	6.1	66
Shoubra	1	96.4	3.6	138
	2	<u>93.3</u>	<u>6.7</u>	<u>60</u>
TOTAL	1	95.9	4.1	785
	2	90.2	9.5	451

1 - owners

2 - renters

Table 5.2

Availability of Toilet, Location of Toilet Used and Number of Families Sharing a Toilet  
(percent)

Kism	Have Toilet	Have No Toilet				No. of Families Sharing a Toilet								
		Public	Neigh.	Street	Other	None	One	Two	Three	Four	Five	Six	Seven	Eight
Matareya	97.0	2.1	-	-	1.3	87.7	3.8	2.1	1.7	2.1	0.4	0.4	0.4	0.9
Zaitoun	95.6	-	0.7	-	2.2	87.5	4.4	2.9	5.1	-	-	-	-	-
Sayeda Zeinab	75.4	18.5	1.5	1.5	4.6	50.8	7.7	5.2	9.2	3.1	3.1	3.1	-	13.8
Maar El Kadima	84.7	2.5	1.7	-	5.1	50.8	6.8	17.0	13.6	3.4	3.4	-	-	3.4
Maadi	96.1	1.9	1.3	-	0.6	89.7	5.2	1.9	1.3	1.3	-	-	-	0.6
Helwan - Tebin	93.3	5.0	1.7	-	17.0	75.0	5.0	8.3	3.3	5.0	-	3.3	-	-
Embaba	96.7	0.9	0.1	-	0.5	90.6	4.2	2.8	1.9	-	-	-	-	-
Giza	91.8	5.0	1.3	-	1.3	77.4	5.0	8.2	5.0	3.1	0.6	0.6	-	-
Shoubra El Kheima	95.5	-	1.5	-	2.5	87.6	4.5	3.0	3.0	1.5	0.5	-	-	0.5

**TABLE 5.3**  
**MEAN NUMBER OF FAMILIES SHARING TOILET BY KISM**

<u>Kism</u>	<u>Owners</u>	<u>Renters</u>	<u>Total</u>	
			<u>Owners</u>	<u>Renters</u>
Matareya	2.0	4.0	153	70
Zeitoun	2.1	2.0	78	52
Sayeda Zeinab	5.7	4.0	12	45
Masr El Kadima	2.4	3.7	38	20
Maadi	1.0	3.0	89	66
Helwan-Tebin	2.3	2.5	31	8
Embaba	1.4	2.3	126	79
Giza	2.2	2.6	100	51
Shoubra El Kheima	<u>2.6</u>	<u>2.3</u>	<u>138</u>	<u>60</u>
<b>TOTAL</b>	<u>2.2</u>	<u>3.2</u>	<u>785</u>	<u>451</u>

## 5.2 PATTERNS OF WATER AND SEWAGE DISPOSAL

While the residents of other parts of Cairo have access to public sewage, they don't pay anything for the service. Owners of houses pay only the installation fees, which are about 120 Egyptian Pounds to connect the building to the street main pipe. This is less than the cost of a sewage tank. Residents of the deprived areas who found individual solutions to their sewage problem are also responsible for paying regularly for the drainage of their tanks, an operation which is quite costly and annoying.

Draining of a sewage tank costs about 5 piasters per tin. The cheapest way to do the drainage is to get a cart from the city council called bouklesh cart. It is a cart pulled by donkeys and having a container. It costs 250 piasters to utilize this cart. However, it involves a lot of bureaucratic procedures and waiting for one's turn. Very often the tank would flood before they arrived. There are other private agencies and individuals who perform this service. These are more expensive and also scarce and difficult to locate. A poor man might be willing to do the job, but as soon as he could find an alternative job, he would give up this one. Private agencies were once numerous, since this was the main system, but now very few are working in this profession.

Realizing all these problems and the costs involved, residents are very much conscious of reducing the amount of wastewater that they throw in their tanks.

Though the construction of the tank is the owner's responsibility, drainage of the tank concerns all the residents. Owners and renters contribute equally to the cost of draining. But, the owner of the house is responsible for contacting the agency for performing the job. He usually pays the agency and then collects from the residents.

In all of the study areas, the tanks are limited to the toilet waste. Any other waste has to find some other place. In some areas such as Sayeda Zeinab, where the public tap drains into the public sewer, residents often use this drain for their used water. But in almost all of the other areas, whenever the house is not connected to the public sewer or to a piped line, the used water finds its way to the streets or to an empty space close by. The difference between owners and renters regarding this pattern of throwing water is not significant. The following figures show the percentage of households which reported that they throw water in the street or in an empty space.

Matareya	1	41.3
	2	48.5
Zeitoun	1	14.1
	2	26.9
Sayeda Zeinab	1	75.0
	2	71.1
Masr El Kadima	1	26.4
	2	55.0
Maadi	1	48.1
	2	48.5
Helwan-Tebin	1	54.9
	2	63.0
Embaba	1	56.4
	2	55.2
Giza	1	45.0
	2	51.1
Shoubra El Kheima	1	29.6
	2	25.1
1 - owners		
2 - renters		

In areas which are close to a canal or drainage canal, residents throw the used water into the canal. In areas of Matareya, Maadi, Helwan-Tebin, Embaba and Shoubra El Kheima this pattern is found. It is most common in Helwan-Tebin where 39 percent of owners and 50 percent of renters in the sample use the canal for throwing water. The canals and the drainage are used not only by individuals to dispose of used water, but also draining agencies empty their carts in these canals.

The pattern of throwing the water into the street is more common during summer. Such water dries quickly in addition to cooling the streets and settling the dust. In winter, residents try to avoid that as much as possible. They make an effort to carry it to an empty space close by, or to the fields or the canal.

### 5.3 HEALTH AND SEWAGE

Diseases related to poor sanitation are known to be among important causes of morbidity and mortality. "A safe and adequate water supply with proper disposal of human waste is fundamental not only to improvement of sanitation but also to raising the quality of life of people and their environment". (EDI Seminar paper, p. 110).

In all of the study areas, the favorite place for the children to play is in the street. About 80 percent of the respondents in our sample indicated that their children play in the street. These streets are also the main place where the residents throw their used water. Similarly, many children and adults were observed washing and utilizing the canals and the drainage for a variety of purposes, among them cleaning of the pots and pans. These canals are definitely contaminated with a variety of microbes, for in these canals sewage, garbage, and chemical waste from industries are thrown. Not all public taps are connected to a drainage system. Since these taps are continuously running, they create swamps in these areas.

Several times during the field work, residents pointed out these seepage conditions and commented that they have lost a child or two because of them. A grocer was furious because, as he explained, he usually displays his Ramadan merchandise in the street but due to the sewer seepage in the street, the health inspector fined him this year and is preventing him from displaying his products.

Residents are aware of the fact that insects and flies are abundant, that they cause diseases and that the sewage and the still water in the area are major causes for it.

## CHAPTER 6

### COMMUNITY NEEDS AND THE PROPOSED PROGRAM

To a large extent, attitudes toward the proposed program are closely related to people's perception of the needs of their communities and households. The study areas, especially the peripheral ones, are newly developed areas which are attracting an increasing number of people. However, all of the areas are among the most deprived districts in terms of urban services and facilities. Why then do people choose to live in these neighborhoods?

#### 6.1 REASONS FOR CHOOSING TO LIVE IN THESE DEPRIVED AREAS

Some residents did not come to live in these areas out of choice, but were born there. Of the sample of respondents, 28 percent mentioned that they were born in the same districts in which they are now living. These individuals have not experienced another form of residence, and one would expect that they, more than any other group, would be content with their homes. With the exception of Sayeda Zeinab and parts of Masr El Kadima, it is highly possible that those who were born in the peripheral new areas are the original rural residents of these areas. The following figures show the percentage of respondents who mentioned that they were born in the study areas :

Matareya	33.4	Helwan-Tebin	18.5
Zeitoun	15.5	Embaba	23.2
Sayeda Zeinab	27.1	Giza	35.3
Masr El Kadima	61.1	Shoubra El Kheima	25.3
Maadi	16.8		

As all of the respondents were adults, the above figures indicate that these percentages pertain to people who have been residing in the same districts for at least twenty years. Many of those who were born in the areas own their homes, which is a further indication of their continuing to live in the area. It is among this group that we find great attachment to the neighborhood. An elderly lady in Giza expressed her love of her home as follows :

All of my children are university graduates. I've been living here all my life. I'm tolerating the hazards and inconveniences of lack of water and sewage because I was born in this very house. After my children graduated, they married and are living in more elegant districts. They feel embarrassed that I am living under these conditions. They have asked me several times to move from this district, but I will never leave my own house for a rented one.

These peripheral areas are the major outlets for absorbing the increasing population of the city. About 60 percent of the respondents mentioned that one of the determining factors which made them choose these neighborhoods for residence was that they found no other place in the city (see Table B 32). A respondent in Maadi said :

I was engaged for four years. My fiancée and I searched everywhere for an apartment, but in vain. Finally we were able to find this apartment in Maadi. We paid 1000 Egyptian Pounds as key money for it. This amount was all we could save during our four years of engagement.

Another resident commented that she had to live with her mother-in-law when she married because of the housing shortage. Then she added:

My mother-in-law is very difficult to live with. I was about to lose my marriage. One day my husband said : "Do you mind living in a place without potable water?" I agreed, for this was the only place we could afford.

Closely related to the factor that residents chose to live in a particular area because it was the only place they found, is the presence of acquaintances in a particular neighborhood. Relatives and friends are still the main source for communicating information about the availability of a vacant apartment in a particular locality. About 21 percent mentioned that they chose their present residences because they have friends or relatives living there (See Table B 32). In other words, it is not only that acquaintances prefer to live close to each other, but they inform each other of places to rent.

People used to living in congested areas of the "Inner City" find the study areas "quiet and relaxing". Of the respondents, 38 percent mentioned that these areas appealed to them because of these two characteristics.

In spite of the fact that more of the peripheral areas have developed first as industrial centers, only 16 percent of our group said that they chose living in such districts because of their closeness to work.

Though respondents gave the above reasons for deciding to live in the study areas, once they started living in them they developed certain likes and dislikes for their neighborhoods, which are sometimes different from the reasons for which they chose them.

## 6.2 ADVANTAGES OF LIVING IN THE STUDY AREAS

Respondents were asked to give accounts of the positive attributes of their neighborhoods. The response provided a realistic picture of the condition of the study areas. Although positive responses were sought, the one category of response which received the highest frequency is that "We don't like this neighborhood". (See Table B.33). In Sayeda Zeinab, for example, there is the highest resentment. About 46 percent of the respondents object to their residences. More often is heard the comment that "We are buried alive". Embaba also has a high frequency (41 percent) of respondents who are dissatisfied with their residences. Such feeling might be a great barrier to problems of community participation. It is essential to have a minimum of convenience in the place of residence in order to develop attachment and a sense of belonging to the community.

A significant percentage in Helwan-Tebin (61 percent) mentioned that one of the advantages of their residence in this neighborhood is that it is close to work. It is interesting to note that the privilege of living close to work develops with time. It was discovered that it was not a significant variable in one's decision to live in a particular area. With the exception of Sayeda Zeinab and Masr El Kadima, which are in the "Inner City", 20 percent or more of the respondents mentioned that closeness of their work to their places of residence is a great advantage (see Table B 33).

It is evident from the responses in Table B 33 that human relationships continue to play an important role in the residents' enduring the physical shortcomings of their communities. A substantial number of the respondents mentioned that friends and relatives are two factors which make them enjoy living in these neighborhoods.

### 6.3 COMMUNITY NEEDS AND PROBLEMS

Community needs are relative, depending on the degree of deprivation and awareness. For example, in Masr El Kadima on the hills all that the people aspire to is a public tap to relieve them from carrying water uphill. Similarly, in some areas of Embaba the hope is to get more public taps, because some residents walk for half an hour to the source of water. In general, water is considered to be the most important need in the community (see Table B 34). Not only do these areas need piped connections, but there are immediate problems needing solutions. For example, in some areas the residents reported that the Government has removed the public taps prior to supplying them with a substitute. One resident said that "We believe that we will be getting potable water soon, but what about today?"

Residents are faced with inconsistencies in the system which they cannot explain. Why is it that one street gets a connection and the other not? Why is it that one house could get the connection and the next could not? Definitely the Water Department has answers to these questions. Answers to such problems are also needed quickly, and they cannot wait for the installation of connections.

Another problem related to water which is also an immediate one, and about which the residents are concerned, is the wastewater of the public taps. It creates a great deal of sewage problems. Some of these taps are continuously open, without necessarily being connected to a drainage system.

Sewage received the second priority in terms of community needs for improvement (see Table B 34). It is the impression of the research team that in the people's perception both water and sewage receive equal weight in terms of needed improvements in the community. But, since the interviewers were introduced as researchers for a water project, water received focal attention from the residents.

Residents complained of the cost of drainage, their children's exposure to disease as a consequence of playing in the streets, and the sewage seepage. They also complained of factories throwing their chemical waste into the canals. In Helwan-Tebin, respondents complained that many of the houses lack toilet facilities, and say that one of their basic needs is for a public toilet. In Sayeda Zeinab, residents said that they had to give the public toilet to a family whose house had collapsed to use as a home, and thus the area now lacks

a public toilet.

Transportation and communication come next in terms of community needs. Public buses reach only the outskirts of the areas, but do not dare venture into the inner sections. It is physically impossible to move inside because of the various forms of obstructions in the streets. Also in some areas the width of the street is an obstacle. Some residents of Mataraya and Shoubra El Kheima commented that since the bus routes cannot extend into the areas, if the roads were paved at least it would be possible to get taxis in. The condition of the streets isolates these areas. Fire trucks and ambulances refuse to come to the rescue in these areas. This is also aggravated by the fact that there are no telephones at all in some of these areas. None of the respondents possesses a telephone.

Schools, especially preparatory and secondary schools, were also requested. Some parents have decided not to send their children to school beyond the primary grades because there are no schools available in the neighborhood. In Tebin, even primary school children have to walk for three kilometres to reach the school.

In addition to these generally needed improvement, each area has its own specific needs. For example, in Mataraya, in one of the districts there is a granary. This is responsible for attracting insects to the area, which irritate the residents and cause itching of the skin. In Embaba and parts of Mataraya, there is the feeling that the areas need police security. Many criminal activities such as thefts and fights take place, and the police are not present in the area. In Shoubra El Kheima and Embaba, there is the need to relieve the district of the drainage canals, which are thought to be contaminated with microbes. In Sayeda Zeinab there was a general feeling that the one improvement needed is to erase the area all together and build new houses. Many of the residents of Sayeda Zeinab objected to the installation of water and sewage connections, commenting that what they need is new houses.

#### 6.4 SELF-HELP

Residents of the study areas have made several efforts to improve their living conditions. These efforts are not always successful, but they show concern about the welfare of the community. Three main bodies have been found capable of mobilizing the people for the achievement of common goals. These are the mosque, the formal political leader and the local associations. These

three bodies do not necessarily work separately but sometimes in collaboration.

The mosque has been depicted as the most effective means of initiating programs of self-help. The construction of the mosque in a particular area starts in response to the resident's demand for one and their collaboration together for establishing this religious institution. It begins with a resident donating a piece of land for the construction of a mosque. This is usually followed by an application to the "Ministry of WAQFS" (Endowment) for a grant or subsidy. As soon as the area is identified as a place for a mosque and before the construction is completed, members of the community will come together in this spot and use it for prayer. The pattern is that after the Friday prayer participants are asked to contribute to the completion of the construction of the mosque. Revenues start coming from other sources generated by the mosque such as selling water.

When the mosque is constructed it is given priority in terms of water installations. The mosque extends a water pipe to the public and collects money from the residents to help finance completion of the mosque and later for its maintenance.

While building a mosque in a particular area is an example of self-help, the mosque itself as an institution becomes a source of generating self-help programs. It is very effective in communicating to the people concerns about a particular need or activity. Political leaders utilize the mosque for propagating their programs. The concept of "Community Self-Help" has been popularized during the elections of 1979. Candidates were able to arouse the residents' interest in their localities. They contacted informal leaders in the communities to ask about their needs and try to arrive together at a definite solution. Many of these programs were introduced in the mosque during prayer time.

In Matareya, for example, three important community sponsored programs became effective through the mosque. One involved levelling of a piece of land which was responsible for many mishaps. The preacher or Imam in the mosque requested the cooperation of the residents in accomplishing this task and they were successful in doing it. Second, the region was in a desperate need for a walking bridge to cross the canal. The same procedure was followed with success. Third, through the help of the political leaders and the mosque, residents in Matareya were able in less than a month to collect 60,000 pounds for the installation of sewer lines. This process became effective through

forming a committee from members of the community which decided that every house owner should pay 50 PT for every metre of land that he owns. In cases where the owner refused to pay, the renters collaborated and paid for him. "Unfortunately, when the committee delivered the money to the responsible people they were informed that they have to wait some time for the installations or collect an additional sum of 35,000 pounds to finance this project".

Local associations in these areas have been effective in organizing community work. In Embaba there is an association called "Association for Community Development." It originated through the efforts of four university students and eleven of their friends in the area. One of the group gave two rooms in his building for the purposes of the association. In this place they bought a typewriter which they now rent to the students of the school for 35 PT a month. These students, if they pay the fees, are intitled to use the association's typewriter for training. This started generating income which enabled them to buy some benches. This was followed by a program of special lessons for primary school students. Each student would pay one Egyptian Pound a month. Gradually a nursery for the children of the community opened, having a fee of 60 PT per student. They also started organizing football teams among teenagers, which attracts interest and generates enthusiasm among members of the community. All of those working in the activities of the association are volunteers.

One of the founding members of the association said, "At the beginning we started the whole program for helping the students of the community, but residents started coming to us with their problems and we became involved in larger issues, such as the water and sewage".

The researchers found similar associations in Zeitoun and Tebin and the first task that they accomplished was to map their neighborhood and divide the neighborhood into blocks in order to find out the needs of each division. In Embaba the association decided that sewage is the most important need. They have developed a program where the owner should pay from the street main to the house on the basis of one pound per square metre. He has the right to ask the renters to contribute. This money would be deposited in the bank. The association presented this suggestion to their electoral representative to be discussed in the "People's Assembly". Members of this association commented, "What is hindering the water installations is the sewage. If you get us money for water, please, keep it until the sewerage is fixed."

On the basis of their survey, the Embaba association summed up the needs of their community in the following comments :

- a. Schools are needed. The residents of Mönira walk for at least three kilometres to the nearest school.
- b. There are no health units. The closest health service is the Embaba Hospital.
- c. There are no food cooperatives.
- d. They do not have a post or telephone office.
- e. Public transportation is far away.
- f. The streets are blocked. All of the construction waste of the Giza City is dumped by the drainage along the "Matar Street," which is the main thoroughfare of the district.

In Zeitoun, the residents were more dynamic in facing their problems. They appealed to the responsible authorities in the water and sewer departments, but they were informed that their houses were illegally constructed and most of them were built after 1966, when the law preventing construction in these areas was passed. The residents hired a specialist and mapped the areas and marked the directions that the pipes should take. They wanted to install both water and sewers but they succeeded only in getting the sewers installed.

Representatives of each alley collected 10 Egyptian Pounds from each house for a period of four months. By the end of this period they were able to collect 35,000 Egyptian Pounds. They hired a contractor and assigned the operation to him. All houses were connected to a main pipe which was connected to the sewer line in the main street. They did that separately from the Government. Presently they collect from the beneficiaries 18 Egyptian Pounds monthly for a specialist who is in charge of the maintenance of the pipes. It is important to point out that it is in this area that the pipes are installed on the level of the ground. The residents themselves feel that in terms of construction their sewers are not properly done, in spite of all the money and effort involved.

In Zeitoun also, the residents were able to establish a food cooperative. Each family participated by buying bonds. One respondent said that such activities succeed in Zeitoun because we have many public officials who finish their work at 2.00 p.m. and they need extra income, thus they get involved in

cooperative enterprises which are useful for the community.

Besides the above examples of organized communal self-help, there are other forms of spontaneous efforts to meet sudden events. In Matareya, an electrician said that whenever there is a sewage seepage problem in the streets, the residents whose houses are affected (renters and owners) each pay 5 P.T. to a volunteer who gets a cart full of soil and sand to spread over the puddles. Similarly, whenever an electric wire breaks they also collect money and get someone to repair it. They find it much easier and quicker to do this than report the accident to the responsible officials.

Many individual self-help systems are also in existence in these communities. The most common is contracting for the neighbors to share the use of a water pump or an oven. One neighbor was observed enticing some children with a few piastres to collect the garbage.

Examples of community self-help in the community are not numerous. Large scale programs were existing and active during the election times. Now they are slowing down. However, they are indicative of the possibility of attracting and mobilizing the members of the community for a communal activity. When communal activities start operating on the specific level, residents are guided by their own experiences and needs.

Residents were always doubtful about the seriousness of the water connection project. They know that it will be coming. They have seen many engineers and foreigners around the area, but they know that it takes time. They have been given so many promises. Many of them have visited the water department, paid for the installation fees and still received no water.

#### 6.5 PROBLEMS OF INSTALLATIONS

Problems of water and sewage installations could not be separated. Four major problems are involved in considering water and sewer connections in the households of our study areas.

First, cost of installation could be a hindrance to some of the owners. Second, availability of the street main line is basic to the installation. Third, legality of the building has been a factor in preventing the owner from connecting and condition of the building is the fourth factor affecting connection of water and sewage to the buildings.

Owners of buildings, under ordinary conditions, apply for the water and sewage connections from the official authorities when they are in the process of constructing a building. They are charged about 100 Egyptian Pounds to connect the building to the streets main water line, and 120 Egyptian Pounds to connect the building to the street main sewer line. These amounts are no problem when paid at the time of construction. Owners readily pay them and do not feel that they are costly. One of the building has been completed and rented, the problem of cost of installations gets to be complicated. Who is to pay for the installation? Renters have agreed to live in these houses, knowing that they are not connected to water and sewerage. They have also paid less key money because the building lacks these utilities. Renters complained that the main connections have reached their street but the owners refuse to connect the building to water, "They want to see us out to get more key money". Some of the renters said they cannot afford to pay, and some of the owners commented that the renters should contribute to the cost not in terms of increasing the rent, but as "improvements to the building".

The dilemma of who is to pay the cost of installations is lessened by the fact that many of the residents of these districts are also owners of the buildings.

Borrowing money for the sake of getting the service is one solution to the problem of raising the needed amounts for the installation purposes. However, before advocating this alternative one should examine the available loaning facilities within the Egyptian cultural context.

Till now, modern banking and mortgage financing, in the western sense, are not part of the economical thinking of ordinary folks in Egypt. The basic reason for this is that the concept of banking and interest rates offends the Islamic injunction against insury (Abu Lughod, 1971). The most prevalent loaning system in Egypt nowadays is the informal system of the gamiya, i.e., association. This system entails that a group of acquaintances, relatives or neighbors volunteer to pool their money so that each individual may have access to it without interest. Such an association requires trustworthy individuals. Each member of the group involved regularly contributes specific sums of money over specified intervals of time. The payment intervals are equal to the number in the association. Each person receives the entire collection at one of the payment intervals. Thus the total sum of money that each

collects in one interval is equal to the total amount any individual will put in for the whole period (Nadim, 1975, p. 118). One main criteria for the success of this pooling system is that the individuals joining the gamiya do not all need the money at the same time nor for the same purpose.

The gamiya system may seem to have possible utility in generating money for the installation purposes. However, it would be rather difficult to implement under the present situation. Installations are going to be supplied simultaneously to all people. It will be difficult for the residents to join a gamiya together for the same purpose. It is important to emphasize that it was found out in the study areas that relatives and friends tend to live close to each other. Twenty percent of the respondents mentioned that they chose to live in these neighborhoods because they had acquaintances there. Also, an additional 28 percent mentioned that they were born in the same neighborhoods and had never lived anywhere else. There is also the possibility that the acquaintances are from the same category. Thus, many owners as neighbors would be involved in using the gamiya at the same time to make payments for water and sewer connections.

In some areas the main sewers and water pipes are not yet installed, so even if one applies and is ready to pay, it is impossible to get the connections until the street mains are installed. Owners say, "I am ready to pay for the connection in front of my house, but why should I pay from the source?" Furthermore, there are areas where the main water pipes have been connected and the owners of the houses refuse to get the connection because the sewage pipes are not yet installed.

Region number five in Shoubra El Kheima called Madinet El Saada is a concrete example of an area which has water but no public sewage system. When this area was visited it was not possible to pass through many of the streets for they were green with sewage water. The houses in this particular area have several stories and have many renters. In Giza, many of the residents interviewed cannot have water without sewage for their houses are built without concrete pillars and they would fall as a consequence. Similarly, in Embaba community leaders said that they will refuse water connections if they are not accompanied by appropriate sewer systems. In Sayeda Zeinab residents said that both water and sewage will dilapidate the buildings.

When applying for electricity all that is needed is the apartment rental contract. Owners and renters have access to such a contract and thus there is no problem in getting electricity to the house. With water and sewage connections the problem of legality is more complicated. In these areas the owner has to present the building permit in order to get approval for the installation. This is often not available in some of the study areas. Thus some of the owners don't even go to the trouble of applying. Some others fall prey to embezzlement.

In spite of all these constraints many of the residents of these areas have already applied for water and sewer connections. Furthermore, they know that the water and sewers are on their way and many of the new houses have already installed all of the water and sewer utilities in the apartment, including sinks, taps, toilets, and pipes. Several plumbers in the area are busy installing these utilities. Plumbers have opened shops and say that very soon they will have plenty of work to do.

Residents are observing the development of their residential areas with patience. They built their houses knowing that it was illegal to do so, but they know they will get sewer and water connections since some areas around them have access to them. When will they get it? They do not know for sure. There are lots of promises. It is soon coming. A resident in Shoubra El Kheima said :

"I have applied for sewers since 1978 and paid the installment fees on the basis of 75 piastres per square metre of the house. I pay 2 Egyptian Pounds a month. I've only 4 months to go and up until now no work has started. Do you know that in Ezbet Roustem and El Gabalawi (region 7) alone about 900 owners have applied for sewers and many of them have already paid all the needed money."

There is clearly a great desire to bring piped water and public sewers into the study areas. Many of these areas have undertaken strenuous efforts to raise funds over long periods of time to pay for these connections. These efforts have failed. The residents have not been able to raise the funds required by the present policies of the government to secure the connections.

A gap exists between the policies of the government and the desires and capacities of the area residents. The Metered Water Service Connections Program has been proposed as a means of closing this gap, so that people's efforts and governmental activity can work together to create needed permanent improvements.

#### 6.6 PAYMENT FOR WATER CONSUMPTION

The majority of the residents in the study areas do not pay for their water consumption, especially those who get water themselves from the public tap. (Table B 24). They do pay some money for the tap guard or for repair, but it is a negligible amount. The group which pays a lot is the one which hires a water vendor. This composes a small minority of the households. Those who resort to this system are either the well to do or residents of the hilly areas who cannot physically carry the containers. Because of the necessity of paying a hired person for getting water to those living in hilly areas, the average water consumption in such areas drops significantly.

In spite of the fact that many do not pay for water consumption yet, with the exception of Sayeda Zeinab, 95 percent of the respondents expressed their readiness to pay for their water consumption (see Table B 26). This readiness should be viewed along with the fact that they are aware of the current price of water. More than one third of the group said that they are ready to pay whatever the meter reads. They also believe that the majority of their neighbors will also be ready to pay. Residents feel that if they are getting potable water with the existing rate, they would be paying less than an Egyptian Pound monthly for their water consumption.

Residents also have experienced the troubles they face at the public water tap. They also have experienced having a general pump in the building. Thus they are aware of the problems of involvements with their neighbors over sharing the source of water. They definitely would prefer to have their own private source of water, but if they do not have a choice, then they are ready to share a tap with other residents in the house.

## CHAPTER 7

### CONCLUSIONS AND RECOMMENDATIONS

A safe and reliable source of potable water located in one's home is a basic factor in the quality of life at any level of social organization, from the least to the most developed. In urban settings such as Cairo, where there is an extremely high population density, this need becomes even more pressing. Despite the fact that people who lack potable water in their homes, such as the respondents in the study groups, may not be fully cognizant of all the implications of this lack, it is very clear that its consequences are severe, both for the communities affected and for the city as a whole.

In health terms, the lack of potable water in the homes means that residents of these areas often use contaminated water, such as that obtained from canals and poorly built pumps. Even those who depend entirely on tap water are also exposed to dangers as a consequence of storing water in containers which are difficult to clean thoroughly, such as the zir.

The inconvenience and hazards of obtaining water also contribute to various health problems. This definitely contributes to reducing the productivity of the residents of these areas, particularly the women, who are responsible for bringing water to the homes. The four hours a day of one adult woman's time per household spent in obtaining water is time lost to more constructive activity, and must surely have consequences for the national economy.

It is impossible to fully assess the consequences of unsafe water supply in these areas for the community at large, but it is clear that they are great. At very least, the disease and debilitation produced increase the mortality rate and reduces the time during which workers are productive. Thus, the installation of sources of potable water in the households in these areas should be a national priority, even if the residents themselves were not concerned about the problem.

The residents are, however, by and large extremely eager to have water connections installed in their homes. Many are well aware of the dangers of their patterns of water use and disposal, but are individually powerless to af-

fect the situation. For them, problems with water are one of the many heavy burdens which they, as members of the poorest groups of the city, must shoulder, whether they wish to or not.

Residents of these areas are very poor people living in very poor communities. The sample survey indicates that 63 percent of the households have incomes of less than 50 Egyptian Pounds per month. Since they have an average of 5.85 members per household, the per capita income is very low indeed. Their budgets are even more strained by the fact that they constitute a relatively young population; about 42 percent of the group is under 15 years of age.

Not only are the families poor individually, but the areas themselves are poor. The physical conditions of the study areas, and their paucity of services, indicates that no one lives there by choice. Rather, they are unable to cope with the increasing prices for residence in the inner city and the shortage of housing there, and thus seek housing in the peripheral areas.

Even the residents who own their own homes are not well off. The study, in fact, found no significant difference in incomes between owners and renters of apartments. Some of these people own their homes because they were the original occupants when the land was agricultural; some of the buildings are still of the mud brick style characteristic of village construction. Other residents found it less expensive to build in such districts than to pay key money inside the city. Land prices were quite low, and some of the houses are of very poor quality construction.

The system of communication with the outside world is woefully inadequate. Some of the areas lack access to a single telephone, and among the sample families not one had a phone. Private cars are virtually non-existent among the sample. There is not a single movie house in any of the areas. Coffee shops are very few, and other cultural activities are entirely lacking. Transportation to more favored areas of the city is, where available at all, extremely time consuming and of poor quality.

When asked where they spent their leisure time, the majority of our respondents (who were all adults) said that they spent it at home. Under such circumstances, radio and television become necessities rather than luxuries;

they are the sole amenities of life for these people, and even so, many of them have access to television sets only in the homes of neighbors.

Residents of these areas are anxious to get water and sewer connections to their residences, but deeply worried about their ability to pay. It has been estimated that the average cost of a house connection from the water and sewer mains to the buildings is approximately L.E. 200. This means that the average household would have to allocate L.E. 5 per month or 10 percent of its already strained monthly budget to installments on the connection charges. Thus, it would take them 40 months to complete payments. If the same household had also to pay its share of the expenses for connecting the street mains to the source of water and sewage disposal, estimated to be L.E. 110 for water and L.E. 430 for sewer per household, it would have to shoulder this burden for almost fifteen years! Thus, if faced with a choice between paying for the connections or going without them, many would be forced to maintain their present patterns of water consumption, despite the consequences for themselves and the city at large.

The project is based on the assumption that most owners in a block will participate, and this will not happen if they are asked to pay more than a small share of the cost, such as L.E. 25.

It became evident from the study that providing potable water for these areas would solve one major problem for the residents, but might in turn create a more serious problem. The existing sewage systems are not sufficient to cope with the water and waste disposal requirements which they now face, and would be completely inadequate to deal with the new burdens. Thus, proper sewers need to be installed; it would clearly be impossible for the people of these areas to pay the expenses of installing these two services simultaneously.

Another complication is that owners point out that they asked very little key money from the renters in their buildings because the house lacked utilities. Thus they feel that renters should share the burden of water connection installation. But owners cannot raise rents in order to distribute the cost. Egypt has a long tradition of subjecting the relationship between the owners and renters to formal means of organization. Since 1947, and prior to the

Egyptian revolution, the law No. 121 was decreed which prevented owners from sending tenants out of their apartments even if the contract period had ended, as long as the tenants are paying the rent regularly and using the place for the same specifications assigned in the contract. Furthermore, according to this law the owners are not allowed to raise the rent. Any change in law 121 has to be by another decree. This law has been amended several times since 1952, but all amendments were in the direction of decreasing the rent and setting rules and bases for assigning rental values to new buildings.

Renters, on the other hand, feel that providing water and sewer connections is the responsibility of the owners, and point out that in the well-to-do areas of the city, such as Zamalek and Garden City, residents are not asked to pay for water installations. It is clear that to ask renters in deprived areas to do so would constitute unreasonable discrimination against the poor.

The inequity of requiring residents to shoulder the costs of these installations would be further increased by the need to build these systems with an eye to the future. The peripheral kisms of Greater Cairo are absorbing much of its population growth, both that due to natural increase and that due to migration. Planning of the water supply system must thus be based on accurate forecasts of population growth patterns in these areas; in the short run, this will increase the cost of installation, though in the medium to long run the costs will be substantially reduced.

It is for all of the above reasons that it is recommended that every effort be made to supply these areas with potable water and sewage connections as quickly as possible, without requiring that the residents bear more than a small cost for this installation. As in any effort toward development in the Third World, the poor should share the benefits of progress, and most especially so where basic services are concerned.

There are many other ways in which community residents can make substantial contributions to such a project other than financially. Popular participation can be engendered for removing existing sewer tanks, facilitating the digging process, safeguarding engineering equipment, and economizing with consumption. The fact that many of the residents are owners of

their own buildings could further facilitate the implementation process. Owners could be held responsible for supervising cooperative activity with respect to organization of water use among the residents.

Some difficulties may be encountered because households tend to resent having to share a tap with other residents of the same building, but a tap in the building would be a great improvement over present conditions. Further, some of the sample families have separate homes. Some of the problems of service connection, on the other hand, will be reduced by the fact that toilets, sinks and pipes are being installed in some of the new buildings in anticipation of the new services.

It needs to be noted that in some of these areas the situation is so desperate that the communities should not be asked to wait the years it will take to fully implement this project. Some of the areas lack access to public taps altogether, while in others the taps are located at very great distances. Thus, in some areas, there is need for immediate installation of additional taps in order to relieve the pressure on the residents during the interim period.

Careful thought needs to be devoted to ways of introducing other constructive social changes at the same time as the water and sewage connections are installed. This will be the critical period for establishing new patterns of sanitation and productivity. The many hours a day which women currently spend in obtaining water for their households can be turned to productive activity if well planned programs are instituted concomitantly with this project. Similarly, educational programs related to water consumption patterns and sanitation would be maximally effective if conducted during this period.

Thus, on the basis of this evaluative study, it is recommended that a complex of social programs be simultaneously introduced to these areas, so that the quality of life of the residents may be enhanced, to their benefit and to the benefit of society as a whole.

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**APPENDIX A**

**QUESTIONNAIRE**

**AND CODING INSTRUCTIONS**

**(In English Translation)**

GOGOWS

Potable Water Network Development Project  
to Provide Water to the Areas with no Water  
through the Installation of 40,000 Water Connections  
and Sewage System

Questionnaire  
for  
The Socio-Economic Survey  
to Define the Areas and Individuals needing Water

Consultant: Dr. Asaad Nadim

Kism:

Serial Number:

1979

A-1

Socio-economic Survey  
to Define the Areas and Individuals Needing Water

1

1
---

Card One

2

2
---

Kism

- 1 Matareya
- 2 Zeitoun
- 3 Sayeda Zeinab
- 4 Masr El Kadima
- 5 Maadi
- 6 Helwan-Tebin
- 7 Embaba
- 8 Giza
- 9 Shoubra El Kheima

3    4    5

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Serial Number - copy number from schedule

6

--

Region - see list of Shiakhate

-

Address \_\_\_\_\_

7

--

Width of street in front of building

- 1 less than one meter
- 2 from 1 meter to less than 2
- 3 from 2 meters to less than 3
- 4 from 3 meters to less than 4
- 5 from 4 meters to less than 5
- 6 from 5 meters to less than 6
- 7 from 6 meters to less than 7
- 8 7 meters and over

8

Level of ground floor in relation to the street

- 1 Below street level
- 2 Same level as street
- 3 Above street level
- 4 Hilly

What is your name? \_\_\_\_\_

9

Who is the household head? (Relationship of respondent to household head) \_\_\_\_\_

- 1 Household head
- 2 Wife
- 3 Son or daughter
- 4 Father or mother
- 5 Other relatives
- 6 Non-relatives

10

Does the owner of the building also own the land on which it is built? \_\_\_\_\_

- 1 Yes - one and the same person
- 2 No - different people
- 3 Doesn't know

11

Where does the owner of the building live?

1. Lives in the same house.
2. Lives in the same neighborhood.
3. Does not live in the neighborhood.
4. The house is owned by the government or company
5. Other (specify)

12

How many stories does this house have?

1. One floor - ground floor
2. Two
3. Three
4. Four
5. Five
6. Six

13

What is the construction material of this building?

1. Concrete and red brick
2. Wood
3. Mud brick
4. Hut
5. Shack
6. Other (specify) \_\_\_\_\_

14

How long have you and your family been living in this building?

1. Less than one year
2. One year to less than 2
3. 2 to less than 3
4. 3 to less than 4
5. 4 to less than 5
6. 5 to less than 10
7. 10 to less than 15
8. 15 to less than 20
9. 20 years and more

15

Since when was this building built?

1. Less than one year
2. One year to less than 2
3. 2 to less than 3
4. 3 to less than 4
5. 4 to less than 5
6. 5 to less than 10
7. 10 to less than 15
8. 15. and more
9. Doesn't know

16 17

How many families live in this building? \_\_\_\_\_

- 01 One family
- 02 Two families
- 03 Three families

18

How many rooms does your family occupy? \_\_\_\_\_

- 1 One room
- 2 Two rooms
- 3 Three rooms
- 4 Four rooms
- 5 Five rooms
- 6 Six rooms
- 7 Seven rooms
- 8 Eight rooms or more
- 9 Unknown

19

How much is your monthly rent? ..

- 1. less than one pound
- 2. 1 to less than 2
- 3. 2 to less than 3
- 4. 3 to less than 5
- 5. 5 to less than 10
- 6. 10 to less than 15
- 7. 15 and more
- 8. Owner of the house
- 9. Relatives and don't pay rent

20

Who collects the rent?

- 1. The landlord
- 2. The landlord's children or relatives
- 3. We go to the landlord's house to pay it
- 4. The landlord lives in the same house and we pass by him
- 5. Does not pay rent (owner of house)
- 6. we pay by post order
- 7. Other (specify) \_\_\_\_\_

21

Is this building connected to water?

1. Yes
2. No

22

Is your apartment connected to water?

1. Yes
2. No

23

What kind of sewage system does this house have?

1. Public
2. Tanks
3. None
4. Pipe connected to canal
5. Barrel

24

What kind of sewage do you have in your apartment?

1. Public
2. Tanks
3. None
4. Pipe connected to canal (Matareya)
5. Barrel

25

Do you have electricity in your apartment?

1. Yes
2. No

26

Does any other apartment in the building have electricity?

1. All apartments have electricity
2. Most apartments have electricity

3. Half of the apartments have electricity
4. Few apartments have electricity
5. We are the only ones who have electricity
6. None have electricity

27

Do you have a kitchen in your apartment?

1. Yes (skip to question 29)
2. No

28

Where do you cook?

1. In the room
2. In the hall
3. On the stairway
4. Other (specify) \_\_\_\_\_
9. Not applicable (has a kitchen)

29

Do you share the kitchen with others?

1. Yes
2. No (skip to question 31)

30

How many families share this kitchen? \_\_\_\_\_

1. One family
2. Two families
3. Three families
4. Four families
5. Five families
6. Six families
7. Seven families
8. Eight families
9. Not applicable (don't share a kitchen)

31

Do you have a toilet in your apartment?

1. Yes (skip to question 33)
2. No

32

Then, where is the toilet that you use located?

1. Public toilet
2. At the neighbors'
3. Use the street (no toilet)
4. Other (specify)
9. Not applicable (has a toilet in his apartment)

33

Do you share the toilet with others?

1. Yes
2. No (skip to question 35)

34

How many families share this toilet? \_\_\_\_\_

1. One family
2. Two families
3. Three families
4. Four families
5. Five families
6. Six families
7. Seven families
8. Eight families
9. Not applicable (don't share a toilet)

35

Where do you wash your laundry?

1. In the kitchen or bathroom of the apartment
2. In the entrance of the building (or stairway)
3. By the canal
4. In the courtyard
5. On the roof
6. In one of the rooms (or in the hall)
7. By the public tap
8. Other (specify) \_\_\_\_\_

37

Where is the closest public tap to your house?

1. Doesn't know
2. Within 5 minutes walk
3. " 10 " "
4. " 15 " "
5. Non - walkable distance
6. No Public tap in the area
7. Within 15 - 30 minutes walk
8. More than 30 minutes walk

Check question 22 and if the house is not connected to water skip to question 43.

38

Do you have a water meter for your apartment?

1. Yes
2. No

39

How often do you pay the water bill?

1. Every month
2. Every two months
3. Period of more than two months
4. Don't pay
5. No definite period
6. Has not received water bill yet

40

How much do you pay every time?

1. Less than 25 pt.
2. 25 pt. to less than 50 pt.
3. 50 " " " " 75 "
4. 75 " " " " 100 "
5. 100 " " " " 150 "
6. 150 and more
7. Part of the rent (unspecified)
8. Don't pay

41

--

Is the water money part of the rent?

1. Yes
2. No

42

--

Who collects the water money?

1. Landlord
2. Others related to landlord
3. Pay water department by post
4. Pay water department ourselves
5. Water department employee comes to collect the bill

43+44+45

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From where do you get your drinking water? (G.P.)

1. Neighbor in the same building who has a connection.
2. General tap for all residents of house
4. General pump for all residents of house
8. Neighbor in another house
16. From canal or Nile
32. Public tap
64. From mosque (or church)
128. Pump in neighbor's house
256. Motor pump

46+47+48

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From where do you get the water you use at home?(G.P.)

1. Neighbor in the same building who has a connection.
2. General tap for all residents of house
4. General pump for all residents of house
8. Neighbor in another house
16. From canal or Nile
32. Public tap

- 64. From mosque (or church)
- 128. Pump in neighbor's house
- 256. Motor pump

Check question 43, 46 and if any of the first four alternatives are mentioned as their source of water supply ask questions 49 till 57. If the source is the "canal or Nile" or the "public tap" skip to question 58 to 66. If the answer is the "mosque or church" skip to question 67 till 75.

49+50+51

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Who gets the water from the neighbor or the landlord? (G.P.)

- 1. Paid person
- 2. Female children of family
- 4. Male children of family
- 8. Adult females of family
- 16. Adult males of family
- 32. One of the relatives for free
- 64. Other (hose)

52

--

In what sort of container do you get the water?

- 1. Bastila
- 2. Cooking pan
- 3. Bucket
- 4. Tin can
- 5. Washing pan
- 6. Jer kin
- 7. Hose
- 8. Private pump

53

--

How many liters does it hold?

- 1. Less than five liters
- 2. From 5 to less than 10 liters
- 3. From 10 to " " 15 "
- 4. " 15 " " " 20 "
- 5. " 20 " " " 25 "

6. From 25 to less than 30 liters
7. " 30 " " " 35 "
8. 35 and above
9. Has a private pump

54

How many containers do you get daily?

1. One
2. Two or three
3. Four or five
4. Six or seven
5. Eight or nine
6. Ten or eleven
7. Twelve or thirteen
8. Fourteen and more
9. Private pump

55

How much do you pay per container?

1. Doesn't pay
2. Less than 25 P.T. monthly
3. From 25 to less than 50 P.T.
4. " 50 " " " 100 "
5. " 100 " 150 P.T.
6. " 150 " 200 P.T.
7. " 200 " 300 P.T.
8. 300 P.T. monthly and above

56

To whom do you pay the money?

1. Doesn't pay
2. Hired person
3. Tap guard
4. Neighbor who has a connection
5. Neighbor who has a pump
6. To the mosque
7. Pays for tap repair only

57

What is the system of payment?

1. Doesn't pay
2. Monthly
3. Weekly
4. Daily
5. Per container

58+59+60

Who gets you the water from the public tap? (G.P.)

1. Paid person
2. Female children of family
4. Male children of family
8. Adult females of family
16. Adult males of family
32. One of the relatives for free
64. Other (hose) \_\_\_\_\_

61

In what sort of container do you get the water?

1. Bastila
2. Cooking pan
3. Bucket
4. Tin can
5. Washing pan
6. Jer kin
7. Hose
8. Private pump

82

How many liters does it hold?

1. Less than five liters
2. From 5 to less than 10 liters
3. " 10 " " " 15 "
4. " 15 " " " 20 "
5. " 20 " " " 25 "
6. " 25 " " " 30 "

7. From 30 to less than 35 liters
8. 35 and above
9. Has a private pump

63

How many containers do you get daily?

1. One
2. Two or three
3. Four or five
4. Six or seven
5. Eight or nine
6. Ten or eleven
7. Twelve or thirteen
8. Fourteen and more
9. Private pump

64

How much do you pay per container?

1. Doesn't pay
2. Less than 25 P.T. monthly
3. From 25 to less than 50 P.T.
4. " 50 " " " 100 "
5. " 100 " 150 P.T.
6. " 150 " 200 P.T.
7. " 200 " 300 P.T.
8. 300 P.T. monthly and above

65

To whom do you pay the money?

1. Doesn't pay
2. Hired person
3. Tap guard
4. Neighbor who has a connection
5. Neighbor who has a pump
6. To the mosque
7. Pays for tap repair only

66

What is the system of payment?

1. Doesn't pay
2. Monthly
3. Weekly
4. Daily
5. Per container

67+68+69

Who gets the water from the mosque? (G.P.)

1. Paid person
2. Female children of family
4. Male children of family
8. Adult females of family
16. Adult males of family
32. One of the relatives for free
64. Other (hose) \_\_\_\_\_

70

In what sort of container do you get the water?

1. Bastila
2. Cooking pan
3. Bucket
4. Tin can
5. Washing pan
6. Jer kin
7. Hose
8. Private pump

71

How many liters does it hold?

1. less than five liters
2. From 5 to less than 10 liters
3. " 10 " " " 15 "
4. " 15 " " " 20 "
5. " 20 " " " 25 "
6. " 25 " " " 30 "
7. " 30 " " " 35 "

8. 35 and above
9. Has a private pump

72

How many containers do you get daily?

1. One
2. Two or three
3. Four or five
4. Six or seven
5. Eight or nine
6. Ten or eleven
7. Twelve or thirteen
8. Fourteen and more
9. Private pump

73

How much do you pay per container?

1. Doesn't pay
2. Less than 25 P.T. monthly
3. From 25 to less than 50 P.T.
4. " 50 " " " 100 "
5. " 100 " 150 P.T.
6. " 150 " 200 P.T.
7. " 200 " 300 P.T.
8. 300 P.T. monthly and above

74

To whom do you pay the money?

1. Doesn't pay
2. Hired person
3. Tap guard
4. Neighbor who has a connection
5. Neighbor who has a pump
6. To the mosque
7. Pays for tap repair only

75

What is the system of payment?

1. Doesn't pay
2. Monthly
3. Weekly
4. Daily
5. Per container

76

Would you like to have a general tap for the building?

1. Yes
2. No
3. Each family a tap of their own
4. The only residents
5. Disapprove of water installation

77

If a tap was installed for the residents of the building, are you ready to pay for the consumption of your family?

1. Yes - they are ready to pay
2. No - they are not ready to pay

78

How much are you ready to pay per month?

1. Less than 25 P.T.
2. 25 to 50 P.T.
3. 50 to 75 P.T.
4. 75 to 100 P.T.
5. 100 to 150 P.T.
6. Not ready to pay
7. As the meter shows

79

Do you think there are other neighbor who are also ready to pay?

1. Yes - they're ready to pay
2. No - they're not ready to pay
3. Most probably they'll pay
4. Some of them would pay
5. Don't know

80

If one tap was installed for all the residents who will collect the water money?

1. Landlord pays for all
2. Landlord pays for all and collects equally from tenants
3. Landlord pays for all and collects on the basis of family size
4. Landlord pays for all and collects on basis of number of rooms
5. The government pays for all
6. Other (specify)
7. He is the owner and the only dweller in the house
8. One of the residents of the house

201

Card Two

202

Kism

203+204+205

Serial Number

206

Region

Address \_\_\_\_\_

207

Where do you throw the used water?

1. Connected to sewage
2. " " " tank
4. In the drainage
8. In the street - in front of house
16. In the empty space (kharaba)
32. In the canal
64. Other (specify)

208

In your opinion what is the most needed improvement for this building? (rank by priority)

1. Water
2. Sewage
3. Electricity
4. Restoration
5. Painting
6. Stairway
7. Windows
8. Roof
9. Other (specify) \_\_\_\_\_

209+210

Do you have in your apartment? (G.P.)

01. Radio
02. T.V.
04. Electric refrigerator
08. Stove
16. Telephone
32. Washing machine

211

Do you have? (G.P.)

1. Bicycle

- 2. Motor cycle
- 4. Car

212+213

--	--

Why did you choose to live in this neighborhood?  
(G.P.)

- 1. Was born here
- 2. The only place I found
- 4. Quiet, comfortable
- 8. My relatives and friends live here
- 16. Close to my work
- 32. Cheap

214+215

--	--

What do you like best in this neighborhood? (G.P.)

- 1. Close to work
- 2. Friends
- 4. Relatives
- 8. Cheap
- 16. Don't like it
- 32. Other (specify) \_\_\_\_\_

What improvements would you like in this neighborhood? (rank in order of priority)

216

Streets \_\_\_\_\_

217

Water \_\_\_\_\_

218

Sewage \_\_\_\_\_

219

Electricity \_\_\_\_\_

220

Transportation \_\_\_\_\_

221

Schools \_\_\_\_\_

222

Where do your children play?

1. In street
2. At home
4. In the courtyard
8. On the roof
16. Other (specify) \_\_\_\_\_
99. Unknown

223

Where do you spend your leisure time?

1. At home
2. In coffee house
4. Visiting relatives in their house
8. Visiting friends in their house
16. Sitting in the street
32. At the movies or theatre
64. At the mosque
128. Walking in the street
256. Other (specify) \_\_\_\_\_

224

Where does your wife spend her leisure time?

1. Visiting relatives
2. Visiting friends
4. Sits by doorstep
8. At home

REMARKS

Who is living with you? (sharing same income and roof?).

Write names in table and ask about each:

1. How old is he?
2. What is his relation to head of the household?
3. What is his marital status?
4. What is his education?
5. (Those still in school) where in the school?
6. What is his main occupation?
7. What is his income from it?
8. Does he have another job?
9. What is his income from it?
10. Did he get a contagious disease during the last five years?
  - Specify the disease
  - The cause of the disease
  - Where did he go for treatment?

Name	Age	Relation	Marital Status	Educa- tion	Place of School	Main Occupa- tion	Income from Main Occupation	Secon- dary Occupation	Income from Secon- dary Occupation	Disease	Cause	Place of Treat- ment

Code Key for the Table

9 is used whenever the answer is unclear or unapplicable.

235 236

Total number of persons

01 one person  
02 two persons  
03 three persons  
04 four persons  
etc.

237

Total number of males and females under six years old

1 One  
2 Two  
.....  
8 Eight and above  
9 None

238

Total number of males aged six years to less than 15 years

1 One  
2 Two  
.....  
8 Eight and above  
9 None

239

Total number of females six years old to less than 15 years

1 One  
2 Two  
.....  
8 Eight and above  
9 None

240

Total number of males 15 years old to less than 60 years

1 One  
2 Two  
.....  
8 Eight and above  
9 None

- 241 Total number of females aged 15 to less than 60  
 1 One  
 2 Two  
 .....  
 8 Eight and above  
 9 None
- 242 Total number of females and males 60 years and above  
 1 One  
 2 Two  
 3 Three  
 .....  
 8 Eight and above  
 9 None
- 243 Type of family  
 1 Nuclear  
 2 Extended  
 3 Compound (brothers living together, at least one of whom is married)  
 4 Nuclear and relatives  
 5 Relatives  
 6 Non-relatives
- 244 Total number of married people  
 1 One  
 2 Two  
 .....  
 9 None
- 245 Total number of widowed (both sexes)  
 1 One  
 2 Two  
 .....  
 9 None
- 246 Total number of divorced (both sexes)  
 1 One  
 2 Two  
 .....  
 9 None
- 247 Total number of persons under marriage age (16 for girls, 18 for boys)  
 1 One  
 2 Two  
 .....  
 9 None

- 248 Total number of persons in the age of marriage but who haven't been married before
- 1 One  
2 Two  
.....  
9 None
- 249 Total number of illiterate males six years of age and above
- 1 One  
2 Two  
.....  
9 None
- 250 Total number of illiterate females six years of age and above
- 1 One  
2 Two  
.....  
9 None
- 251 Total number of persons who can read and write only
- 1 One  
2 Two  
.....  
9 None
- 252 Total number of persons who have not completed primary education
- 1 One  
2 Two  
.....  
9 None
- 253 Total number of persons who have completed primary education
- 1 One  
2 Two  
.....  
9 None
- 254 Total number of persons who have not completed their preparatory educations
- 1 One  
2 Two  
.....  
9 None

- 255 Total number of persons who have completed their preparatory educations
- 1 One  
2 Two  
.....  
9 None
- 256 Total number of persons who have not completed their secondary educations
- 1 One  
2 Two  
.....  
9 None
- 257 Total number of persons who have completed their secondary educations
- 1 One  
2 Two  
.....  
9 None
- 258 Total number of persons who have not completed their university (or equivalent) educations
- 1 One  
2 Two  
.....  
9 None
- 259 Total number of persons who have completed their university (or equivalent) educations
- 1 One  
2 Two  
.....  
9 None
- 260 Location of primary school
- 1 Within the shiakha  
2 Outside the shiakha  
9 Not applicable
- 261 Location of preparatory school
- 1 Within the shiakha  
2 Outside the shiakha  
9 Not applicable
- 262 Location of secondary school
- 1 Within the shiakha  
2 Outside the shiakha  
3 Not applicable

263 Location of university

- 1 Within the shiakha
- 2 Outside the shiakha
- 9 Not applicable

264 265 Main Occupation of Household Head

267 268 Secondary Occupation of Household Head

(see attached list)

266 Total income from the main occupations of all members of household

269 Total income from the secondary occupations of all members of the household

- 1 Less than L.E. 10
- 2 LE 10 to less than 20
- 3 LE 20 to less than LE 30
- 4 LE 30 to less than LE 50
- 5 LE 50 to less than LE 75
- 6 LE 75 to less than LE 100
- 7 LE 100 to less than LE 200
- 8 LE 200 and above
- 9 Unknown

Kinds of diseases that occurred

For the following diseases, 1 = occurred,  
9 = didn't occur

270 typhoid

271 bilharzia

272 malaria

273 rheumatic fever

274 tonsillitis

275 kidney trouble

276 eye trouble

List of Shiakht

1. Shoubra El Kheima
  - 1 One
  - 2 Two
  - .....
  - 9 Nine
2. El Matareya
  - 1 El Ezab
  - 2 El Matariya El Garbiya
  - 3 Arab El Hosen
  - 4 Ein Shams El Garbiya
  - 5 Ezbat El Nakhel
  - 6 Arab Abu Tawila
  - 7 Tolombat Ein Shams
  - 8 El Zahra
  - 9 Ein Shams El Sharkiya
3. El Zeitoun
  - 1 One
4. El Sayeda Zeinab
  - 1 El Aini
  - 2 Zenhom
5. Misr El Kedima
  - 1 Attar El Nabi
  - 2 Kom Ghourab
  - 3 Eshash El Baroud and El Anwar
  - 4 Fom El Khalig and Deir El Nehas

6. Embaba

1 One

.....

9 Nine

7. Giza

1 One

2 Two

8. Helwan-El Tebin

1 Kafr El Elw

2 El Tebin and Masaken El Hekr

9. El Maadi

1 El Essawiya

2 El Bassatin El Garbiya

3 Ezbet Gibriel

List of Occupations

264 265  
268 269

01 Professional, technical and occupations requiring high qualifications

(pharmacists, engineers and medical doctors, theologians, lawyers, judges, chemists, editors and correspondents of newspapers, radio and television, university professors and teachers, authors, artists of stage, music, photography, sculptors, producers)

02 Administrative, executive and managerial except agricultural

(managers, division heads and inspectors in government offices, companies, associations, syndicates, whether they belong to the public or private sector)

03 Clerical and related workers

(secretarial, including typists, stenographers and accountants, transport ticket collectors and conductors, mail and telegraph carriers, storekeepers, cashiers, guards, soldiers, policemen)

04 Proprietors of commercial and contractual organizations and real estate, except agricultural

(owner of a factory, newspaper, contractual agency, movie theater, real estate, garage)

05 Proprietors of retail stores

(grocer, butcher, small wares, restaurant, coffee shop, cold drink shop, vegetable or fruit stall, perfume vendor, livestock trader)

06 Sales Workers

(insurance agents, real estate agents, auctioneers, brokers, salesmen and saleswomen in stores, salesmen in gas stations, newspaper sellers)

07 Agricultural landowners

08 Agricultural tenants

09 Agricultural landowners and tenants

10 Agricultural daily wagers

11 Workers in Agriculture for their families without pay

- 12 Other agricultural activities  
(agricultural foremen, livestock foremen, camel drivers, shepherds, gardeners)
- 13 Fishermen, hunters, trappers, loggers and related workers  
(fishermen, sponge collectors, hunters of wild edible birds)
- 14 Miners, quarrymen and related workers  
(workers in oil, iron, phosphate, cement, marble, limestone, gas industries, etc.)
- 15 Workers in operating transport and communications  
(drivers of trains, buses, trams, taxis, trucks, ships, boats, telephone, telegraph and telex operators)
- 16 Craftsmen  
(electricians, watchmakers, jewelers, mechanics, carpenters, blacksmiths, plumbers, painters, masons, tailors, radio, television and other electrical equipment mechanics, mechanics involved in the maintenance and repair of office machines such as typewriters, calculating machines, etc., welders)
- 17 Skilled and semi-skilled laborers in production processes excluding agriculture  
(workers involved in the production of cars, ships, textiles, glass, rubber, paper, canned foods, soft and alcoholic beverages, cigarettes and tobacco, chemicals, medicines, bakers)
- 18 Service workers excluding houseworkers  
(policemen except officers, firemen, paramedics, guards, nurses, waiters, ushers, etc., farash, butagaz attendant, office messenger)
- 19 Houseworkers  
(porter, cook, waiter, babysitter, washerwomen, servant)
- 20 Workers in sport and entertainment  
(sport trainer, musical instrument player, singer, dancer, circus performer, magician)
- 21 Unskilled laborers not classified elsewhere  
(assistants and apprentices of different craftsmen such

as those assisting carpenters, smiths, ironers, barbers, tailors, masons, laborers involved in the construction and maintenance of roads, dams, bridges and canals, garage car attendants, etc.)

- 22 Students
- 23 Retired People
- 24 Housewives
- 25 Disabled, sick people
- 26 Unemployed
- 27 Those drafted into the army

**APPENDIX B**

**QUESTIONNAIRE RESPONSES**

APPENDIX B  
QUESTIONNAIRE RESPONSES  
LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page</u>
B.1	Width of Street	B-1
B.2	Ground Floor of House in Relation to Level of Ground	B-6
B.3	Owner of the Building and Owner of the Land	B-10
B.4	Place of Residence of Owner of House	B-10
B.5	Number of Stories	B-11
B.6	Construction Material By Kism	B-14
B.7	Years of Residency in the Building	B-15
B.8	Age of Building	B-18
B.9-1	Number of Families Residing in Building by Category	B-23
B.9-2	Number of Families Residing in Building	B-24
B.10	Number of Rooms Occupied by Respondent's Family	B-25
B.11	Monthly Rent	B-26
B.12	Who Collects Rent	B-27
B.13	Building Connected to Water	B-28
B.14	Apartment Connected to Water	B-28
B.15	House Sewage Systems by Category	B-29
B.16	Apartment Sewage System by Category	B-30
B.17	Electricity in Apartment and Electricity in Other Apartments in Building	B-31
B.18	Availability of Kitchen and Cooking Place	B-32
B.19	Place of Washing Kitchen Utensils by Category	B-33
B.20	Place of Washing Laundry by Category	B-34
B.21	Availability of Water and Water Bill	B-35
B.22	Persons who Get the Water	B-36
B.23	System of Payment	B-37
B.24	Person Who Received Money	B-37
B.25	Reaction to General Tap in Building	B-38
B.26	Amount Respondent Ready to Pay	B-39
B.27	Neighbor's Readiness to Pay for Their Water Consumption	B-40
B.28	Who Collects Money if Tap is Shared	B-41

<u>Table</u>	<u>Title</u>	<u>Page</u>
B.29-1	Improvement Needed in the Building First Priority	B-42
B.29-2	Improvement Needed in the Building Owners and Tenants	B-43
B.30	Articles Owner	B-44
B.31	Vehicles Owned	B-45
B.32	Reasons for Choosing to Live in Neighborhood	B-46
B.33	Advantages of the Neighborhood	B-47
B.34-1	Needed Improvement in Neighborhood by Priority (Streets)	B-48
B.34-2	Needed Improvement in Neighborhood by Priority (Water)	B-49
B.34-3	Needed Improvement in Neighborhood by Priority (Sewage)	B-50
B.34-4	Needed Improvement in Neighborhood by Priority (Electricity)	B-51
B.34-5	Needed Improvement in Neighborhood by Priority (Transportation)	B-52
B.34-6	Needed Improvement in Neighborhood by Priority (Schools)	B-53
B.35	Type of Family	B-54
B.36	Number of Persons and Households	B-55
B.37	Age Composition of Household	B-56
B.38	Main and Secondary Occupations	B-57
B.39	Income from Main and Secondary Occupations	B-58
B.40	Educational Status	B-59
B.41	Marital Status by Kism	B-60
B.42	Density by Kism and Household	B-61

Table B.1  
Width of Street (percent)

Summary

Kism/Meters	1	1-2	2-3	3-4	4-5	5-6	6-7	7+	Unknown	N
Matareya	-	-	0.4	8.1	14.9	27.2	20.9	27.7	0.8	235
Zeitoun	-	-	2.9	17.6	24.3	20.6	9.6	25.0	-	136
Sayeda Zeinab	-	4.6	13.8	20.0	18.6	9.2	4.6	29.2	-	65
Masr El Kadima	1.7	17.0	18.6	33.9	11.9	8.5	5.0	3.4	-	59
Maadi	-	0.6	2.6	13.5	21.8	28.4	11.6	20.0	1.3	155
Helwan-Tebin	-	6.7	5.0	6.7	10.0	11.7	28.2	31.7	-	60
Embaba	-	-	2.8	16.0	22.6	26.5	24.6	7.1	0.5	212
Giza	-	0.6	3.1	34.0	34.6	11.3	5.7	10.7	-	159
Shoubra El Kheima	-	1.0	5.9	15.3	19.8	18.8	17.3	20.3	1.6	202

Table B.1 (cont.)  
Width of Street (percent)

Detail

Kism/Meters	1	1-2	2-3	3-4	4-5	5-6	6-7	7+	Unknown	N
<u>Matareya</u>										
El Ezab	-	-	-	3.1	13.8	26.9	22.3	32.3	1.6	130
El Matareya El-G.	-	-	-	-	18.2	50.0	13.6	18.2	-	22
Arab El Hosen	-	-	-	25.0	-	16.7	16.7	41.6	-	12
Ein Shams El Garbiya	-	-	-	-	25.0	37.5	25.0	12.5	-	8
Ezbat El Nakel	-	-	-	62.5	12.5	-	25.0	-	-	8
Arab Abou Tawila	-	-	-	-	15.4	30.8	30.8	23.0	-	13
Tolombat Ein Shams	-	-	-	9.5	38.1	19.1	14.3	19.0	-	21
El Zahra	-	-	8.3	25.0	-	8.3	25.0	33.4	-	12
Ein Shams El Sharkiya	-	-	-	22.2	-	44.4	11.2	22.2	-	9
TOTAL %	-	-	0.4	8.1	14.9	27.2	20.9	27.7	0.8	235

Table B.1 (cont.)  
Width of Sreet (percent)

Detail

Kism/Meters	1	1-2	2-3	3-4	4-5	5-6	6-7	7+	Unknown	N
<u>Zeitoun</u>										
Masaken El Ameria	-	-	2.9	17.6	24.3	20.6	9.6	25.0	-	136
TOTAL %	-	-	2.9	17.6	24.3	20.6	9.6	25.0	-	136
<u>Sayeda Zeinab</u>										
Al Eni	-	-	18.1	27.3	36.4	9.1	9.1	-	-	11
Zenhom	-	5.5	13.0	18.5	14.8	9.3	3.7	35.2	-	54
TOTAL %	-	4.6	13.8	20.0	18.6	9.2	4.6	29.2	-	65
<u>Masr El Kadima</u>										
Attar El Nabi	2.9	11.4	17.1	40.0	17.1	2.9	2.9	5.7	-	35
Kom Ghourab	-	-	-	-	-	75.0	25.0	-	-	4
Eshash El Baroud	-	10.0	20.0	40.0	10.0	10.0	10.0	-	-	10
Fom El Khalig	-	50.0	30.0	20.0	-	-	-	-	-	10
TOTAL %	1.7	17.0	18.6	33.9	11.9	8.5	5.0	3.4	-	59

Table B.1 (cont.)  
Width of Street (percent)

Detail

Kism/Meters	1	1-2	2-3	3-4	4-5	5-6	6-7	7+	Unknown	N
<u>Maadi</u>										
El Essawiya	-	1.0	3.8	14.3	22.8	32.4	6.7	18.0	1.0	106
El Basaatin	-	-	-	11.1	27.8	22.2	30.6	8.3	-	36
Ezbet Gibriel	-	-	-	7.7	-	15.4	-	69.2	7.7	13
TOTAL %	-	0.6	2.6	13.6	21.9	28.4	11.6	20.0	1.3	155
<u>Helwan-Tebin</u>										
Kafr El Elw	-	-	-	-	-	-	10.0	90.0	-	10
El Tebain	-	8.0	6.0	8.0	12.0	14.0	32.0	20.0	-	50
TOTAL %	-	6.6	5.0	6.7	10.0	11.7	28.3	31.7	-	60
<u>Embaba</u>										
One	-	-	-	4.4	13.3	20.0	46.7	15.6	-	45
Two	-	-	-	-	17.4	34.8	43.5	4.3	-	23
Three	-	-	-	5.7	25.7	34.3	31.4	2.9	-	35
Four	-	-	-	6.5	26.1	37.0	21.7	8.7	-	46
Five	-	-	-	63.6	27.3	9.1	-	-	-	11
Six	-	-	11.6	38.5	26.9	17.3	-	3.8	1.9	52
TOTAL %	-	-	2.8	16.0	22.6	26.4	24.5	7.1	0.6	212

Table B.1 (cont.)  
Width of Street (percent)

Detail

<u>Rism/Meters</u>	1	1-2	2-3	3-4	4-5	5-6	6-7	7+	Unknown	N
<u>Giza</u>										
One	-	1.6	1.6	27.4	41.9	9.7	3.2	14.6	-	62
Two	-	-	6.2	44.6	30.8	12.3	4.6	1.5	-	65
Three	-	-	-	-	20.0	6.6	26.7	46.7	-	15
Four	-	-	-	47.1	35.3	17.6	-	-	-	17
<b>TOTAL %</b>	-	0.6	3.1	34.0	35.6	11.3	5.7	10.7	-	159
<u>Shoubra El Kheima</u>										
One	-	-	-	5.1	20.5	51.3	20.5	2.6	-	39
Two	-	-	-	11.1	-	11.1	-	77.8	-	9
Three	-	-	-	-	10.0	60.0	20.0	10.0	-	10
Four	-	-	-	51.4	40.0	2.9	2.9	2.8	-	35
Five	-	-	-	-	3.8	-	26.9	57.7	11.6	26
Six	-	6.7	33.4	20.0	10.0	-	16.6	13.3	-	30
Seven	-	-	4.7	9.3	27.9	16.3	20.9	20.9	-	43
Eight	-	-	-	-	10.0	30.0	30.0	30.0	-	10
<b>TOTAL %</b>	-	1.0	5.9	15.3	19.8	18.8	17.3	20.3	1.6	202

Table B.2  
Ground Floor of House in Relation to Level of Ground (percent)  
Summary

Kism	Below	Same	Above	Hilly	Unknown	N
Matareya	3.4	51.5	43.4	-	1.7	235
Zeitoun	6.6	56.6	36.8	-	-	136
Sayeda Zeinab	26.2	41.5	30.8	-	1.5	65
Masr El Kadima	27.1	54.2	11.9	5.1	1.7	59
Maadi	1.9	52.9	44.6	-	0.6	155
Helwan-Tebin	11.7	63.3	20.0	5.0	-	60
Embaba	1.4	50.5	47.2	-	0.9	212
Giza	8.2	55.3	36.5	-	-	159
Shoubra El Kheima	4.5	62.4	29.1	-	4.0	202

Table B.2 (cont.)

Ground Floor of House in Relation to Level of Ground (percent)  
Detail

Kism	Below	Same	Above	Hilly	Unknown	N
<u>Matareya</u>						
El Ezab	1.5	49.3	46.9	-	2.3	130
El Matareya El-G	-	50.0	45.5	-	4.5	22
Arab El Hosen	8.3	25.0	66.7	-	-	12
Ein Shams El Garbiya	-	50.0	50.0	-	-	8
Ezbat El Nakel	-	87.5	12.5	-	-	8
Arab Abou Tawila	7.7	61.5	30.8	-	-	13
Tolombat Ein Shams	9.5	61.9	28.6	-	-	21
El Zahra	8.3	58.4	33.3	-	-	12
Ein Shams El Sharkiya	11.2	44.4	44.4	-	-	9
TOTAL %	3.4	51.5	43.4	-	1.7	235
<u>Zeitoun</u>						
Masaken El Ameria	6.6	56.6	36.8	-	-	136
TOTAL %	6.6	56.6	36.8	-	-	136
<u>Sayeda Zeinab</u>						
Al Eni	45.5	27.3	18.2	-	9.1	11
Zerhom	22.2	44.4	33.3	-	-	54
TOTAL %	26.2	41.5	30.8	-	1.5	65
<u>Masr El Kadima</u>						
Attar El Nabi	28.6	45.7	20.0	5.7	-	35
Kom Ghourab	25.0	50.0	-	25.0	-	4
Eshash El Baroud	20.0	70.0	-	-	10.0	10
Kom El Khalig	30.0	70.0	-	-	-	10
TOTAL %	27.1	54.2	11.9	5.1	1.7	59

Table B.2 (cont.)  
Ground Floor of House in Relation to Level of Ground (percent)  
Detail

Kism	Below	Same	Above	Hilly	Unknown	N
<u>Maadi</u>						
El Essawiya	2.9	55.2	41.9	-	-	106
El Basaatin	-	50.0	47.2	-	2.8	36
Ezbet Gibriel	-	38.5	61.6	-	-	13
<b>TOTAL %</b>	<b>1.9</b>	<b>52.8</b>	<b>44.8</b>	<b>-</b>	<b>0.7</b>	<b>155</b>
<u>Helwan-Tebin</u>						
Kafr El Elw	-	70.0	0.0	30.0	-	10
El Tebain	14.0	62.0	24.0	-	-	50
<b>TOTAL %</b>	<b>11.7</b>	<b>63.3</b>	<b>20.0</b>	<b>5.0</b>	<b>-</b>	<b>60</b>
<u>Embaba</u>						
One	-	51.1	46.7	-	2.2	45
Two	4.3	65.2	30.4	-	-	23
Three	-	54.3	45.7	-	-	35
Four	2.2	41.3	54.3	-	2.2	46
Five	-	36.4	63.6	-	-	11
Six	1.9	51.9	46.2	-	-	52
<b>TOTAL %</b>	<b>1.4</b>	<b>50.5</b>	<b>47.2</b>	<b>-</b>	<b>0.9</b>	<b>212</b>
<u>Giza</u>						
One	9.7	45.2	45.2	-	-	62
Two	10.8	72.3	16.9	-	-	65
Three	-	20.0	80.0	-	-	15
Four	-	58.8	41.2	-	-	17
<b>TOTAL %</b>	<b>8.2</b>	<b>55.3</b>	<b>36.5</b>	<b>-</b>	<b>-</b>	<b>159</b>

**Table B.2 (cont.)**  
**Ground Floor of House in Relation to Level of Ground (percent)**  
**Detail**

Kism.	Below	Same	Above	Hilly	Unknown	N
<b><u>Shoubra El Kheima</u></b>						
One	-	74.4	25.6	-	-	39
Two	-	77.8	22.2	-	-	9
Three	-	60.0	40.0	-	-	10
Four	-	62.9	31.4	-	5.7	35
Five	-	53.8	26.9	-	19.2	26
Six	30.0	56.7	13.3	-	2.3	30
Seven	-	48.8	48.8	-	-	43
Eight	-	100.0	-	-	-	10
<b>TOTAL †</b>	<b>4.5</b>	<b>62.4</b>	<b>29.1</b>	<b>-</b>	<b>4.0</b>	<b>202</b>

Table B.3  
Owner of the Building  
and Owner of the Land  
(percent)

Kism	Same Person	Different Person	Doesn't Know
Matareya	93.6	6.4	-
Zeitoun	95.6	3.7	0.7
Sayeda Zainab	43.1	56.9	-
Masr El Kadima	78.0	22.0	-
Maadi	93.5	5.8	0.6
Helwan-Tebin	55.0	45.0	-
Embaba	97.6	2.4	-
Giza	96.2	3.1	0.6
Shoubra El Kheima	95.1	3.5	1.5

Table B.4  
Place of Residence  
of Owner of House  
(percent)

Kism	Same House	Same Neighborhood	Nor in Neighborhood	Government Land	Other
Matareya	82.1	3.0	14.9	-	-
Zeitoun	75.0	5.9	16.2	1.5	1.5
Sayeda Zeinab	40.0	12.3	26.2	21.5	-
Masr El Kadima	74.6	10.2	15.3	-	-
Maadi	80.0	4.5	15.5	-	-
Helwan-Tebin	90.0	3.3	6.7	-	-
Embaba	76.9	3.8	19.3	-	-
Giza	79.2	8.2	12.0	-	0.6
Shoubra El Kheima	81.2	4.5	14.4	-	-

Table B.5  
Number of Stories

Summary

Kiam	One	Two	Three	Four	Five	Six	Total
Matareya	85	92	38	17	3	-	235
Zeitoun	39	54	33	10	-	-	136
Sayeda Zeinab	34	23	6	2	-	-	65
Masr El Kadima	30	24	5	-	-	-	59
Maadi	51	61	33	8	2	-	155
Helwan-Tebin	43	17	-	-	-	-	60
Embaba	51	80	45	29	0	1	212
Giza	39	67	39	14	-	-	159
Shoubra El Khaima	53	93	41	14	1	-	202
<b>Total</b>	<b>425</b>	<b>511</b>	<b>240</b>	<b>94</b>	<b>12</b>	<b>1</b>	<b>1283</b>

Detail

Shiakhat	One	Two	Three	Four	Five	Six	Total
<u>Matareya</u>							
El Ezab	39	52	26	10	3	-	130
El Matareya El-G	7	8	5	2	-	-	22
Arab El Hosen	6	5	1	-	-	-	12
Ein Shams El Garbiya	3	3	-	2	-	-	8
Ezbat El Nakel	4	2	1	1	-	-	8
Arab Abou Tawila	6	4	2	1	-	-	13
Tolombat Ein Shams	7	12	2	-	-	-	21
El Zahra	7	3	1	1	-	-	12
Ein Shams El Sharkiya	6	3	-	-	-	-	9
<b>Total</b>	<b>85</b>	<b>92</b>	<b>38</b>	<b>17</b>	<b>3</b>	<b>-</b>	<b>235</b>

Table B.5 (cont.)  
Number of Stories

Detail

Shiakhah	One	Two	Three	Four	Five	Six	Total
<u>Zeitoun</u>							
Masaken El Ameria	39	54	33	10	-	-	136
Total	39	54	33	10	-	-	136
<u>Sayeda Zeinab</u>							
Al Eni	1	8	2	-	-	-	11
Zenhom	33	15	4	2	-	-	54
Total	34	23	6	2	-	-	65
<u>Masr El Kadima</u>							
Attar El Nabi	18	16	1	-	-	-	35
Kom Ghourab	3	1	-	-	-	-	4
Eshash El Raroud	2	4	4	-	-	-	10
Fom El Khalig	7	3	-	-	-	-	10
Total	30	24	5	-	-	-	59
<u>Maadi</u>							
El Essawiya	34	38	23	8	2	-	105
El Basaatin	16	11	9	-	-	-	36
Ezbet Gibriel	-	12	1	-	-	-	13
Total	51	61	33	8	2	-	155
<u>Helwan-Tebin</u>							
Kafr El Elw	8	2	-	-	-	-	10
El Tebain	35	15	-	-	-	-	50
Total	43	17	-	-	-	-	60

Table B.5 (cont.)  
Number of Stories

Detail

Shiakhah	One	Two	Three	Four	Five	Six	Total
<u>Embaba</u>							
One	6	15	11	10	3	-	45
Two	2	7	5	7	2	-	23
Three	6	18	8	2	1	-	35
Four	14	18	10	3	-	1	46
Five	1	8	1	1	-	-	11
Six	22	14	10	6	-	-	52
Total	51	60	45	29	6	1	212
<u>Giza</u>							
One	18	25	13	6	-	-	62
Two	14	29	20	2	-	-	65
Three	2	7	2	4	-	-	15
Four	5	6	4	2	-	-	17
Total	39	67	39	14	-	-	159
<u>Shoubra El Kheima</u>							
One	6	23	8	2	-	-	39
Two	1	4	4	-	-	-	9
Three	3	3	4	-	-	-	10
Four	10	15	1	1	-	-	35
Five	7	8	6	5	-	-	26
Six	4	14	9	3	-	-	30
Seven	14	20	6	2	1	-	43
Eight	-	6	3	1	-	-	10
Total	53	93	41	14	1	-	202

Table B.6  
Construction Material

By Kism

Kism/Material	Concrete and Red Brick	Wood	Mud	Other <sup>a</sup>	Total
Matareya	226	-	8	1	235
Zeitoun	131	-	1	4	136
Sayeda Zeinab	26	15	1	23	65
Masr El Kadima	38	-	2	19	59
Maadi	152	-	-	3	155
Helwan-Tabin	41	-	15	4	60
Embaba	211	-	1	-	212
Giza	150	1	-	8	159
Shoubra El Kheima	199	-	1	2	202
Total	1142	16	29	64	1283

a Mostly limestone.

**Table B.7**  
**Years of Residency in the Building**

Summary

Kism	Less than one	1-5	5-10	10-20	20+	Total
Matareya	14	86	61	64	8	233
Zeitoun	5	32	42	49	8	136
Sayeda Zeinab	1	14	8	18	24	65
Masr El Kadima	2	6	8	20	23	59
Maadi	9	57	51	35	3	155
Helwan-Tabin	7	27	8	4	14	60
Embaba	16	102	53	41	-	212
Giza	6	34	42	55	22	159
Shoubra El Kheima	18	62	53	42	29	202
<b>Total</b>	<b>76</b>	<b>420</b>	<b>326</b>	<b>328</b>	<b>131</b>	<b>1281</b>

Detail

Shiakhat	-1	1-5	5-10	10-20	20+	Total
<u>Matareya</u>						
El Ezab	8	53	37	32	-	130
El Matareya El-G	-	10	7	5	-	22
Arab El Hosen	1	1	2	2	6	12
Ein Shams El Garbiya	2	1	2	3	-	8
Ezbat El Nakel	-	2	-	5	-	7
Arab Abou Tawila	-	2	3	6	2	13
Tolombat Ein Shams	2	10	5	4	-	21
El Zahra	1	3	5	3	-	12
Ein Shams El Sharkiya	-	4	-	4	-	8
<b>Total</b>	<b>14</b>	<b>86</b>	<b>61</b>	<b>64</b>	<b>8</b>	<b>233</b>

**Table B.7 (cont.)**  
**Years of Residency in the Building**

**Detail**

Shiakhah	-1	1-5	5-10	10-20	20+	Total
<u><b>Zeitoun</b></u>						
Masaken El Ameria	5	32	42	45	8	136
<b>Total</b>	<b>5</b>	<b>32</b>	<b>42</b>	<b>49</b>	<b>8</b>	<b>136</b>
<u><b>Sayeda Zeinab</b></u>						
Al Ein	-	1	-	4	6	11
Zenhom	1	13	8	14	18	54
<b>Total</b>	<b>1</b>	<b>14</b>	<b>8</b>	<b>18</b>	<b>24</b>	<b>65</b>
<u><b>Masr El Kadima</b></u>						
Attar El Nabi	-	5	6	15	9	35
Kom. Ghourab	2	1	-	1	-	4
Eshash El Baroud	-	-	1	4	5	10
Fom El Khalig	-	-	1	-	9	10
<b>Total</b>	<b>2</b>	<b>6</b>	<b>8</b>	<b>20</b>	<b>23</b>	<b>59</b>
<u><b>Maadi</b></u>						
El Essawiya	7	36	37	22	3	105
El Basaatin	1	16	9	10	-	36
Ezbet Gabriel	1	5	5	3	-	14
<b>Total</b>	<b>9</b>	<b>57</b>	<b>51</b>	<b>35</b>	<b>3</b>	<b>155</b>
<u><b>Helwan-Tebin</b></u>						
Kafr El Elw	-	9	1	-	-	10
El Tebain	7	18	7	4	14	50
<b>Total</b>	<b>7</b>	<b>27</b>	<b>8</b>	<b>4</b>	<b>14</b>	<b>60</b>

Table B.7 (cont.)  
Years of Residency in the Building

Detail

Shiakhah	-1	1-5	5-10	10-20	20+	Total
<u>Embaba</u>						
One	7	18	11	9	-	45
Two	-	11	4	8	-	23
Three	-	10	11	14	-	35
Four	3	31	10	2	-	46
Five	-	6	4	1	-	11
Six	6	26	13	7	-	52
Total	16	102	53	41	-	212
<u>Giza</u>						
One	3	14	19	20	6	62
Two	3	12	14	21	15	65
Three	-	5	7	2	-	15
Four	-	3	2	12	1	18
Total	6	34	42	55	22	159
<u>Shoubra El Kheima</u>						
One	1	16	11	11	-	39
Two	-	2	2	5	-	9
Three	4	6	-	-	-	10
Four	3	12	8	9	3	35
Five	1	5	11	9	-	26
Six	-	1	4	-	25	30
Seven	7	17	13	5	1	43
Eight	-	3	4	3	-	10
Total	16	62	53	42	29	202

Table B.8  
Age of Building (percent)

1/5

Summary

Kism/Years	Less than one	1-2	2-3	3-4	4-5	5-10	10-15	15+	Unknown	N
Matareya	1.3	3.5	4.7	6.8	8.2	26.4	26.5	14.9	7.7	235
Zeitoun	1.5	1.5	3.7	1.5	4.4	23.5	22.8	34.6	6.5	136
Sayeda Zeinab	-	6.2	4.6	-	3.1	1.5	12.3	53.8	18.5	65
Masr El Kadima	-	3.4	3.4	1.7	-	5.1	10.2	64.4	11.8	59
Maadi	1.9	5.2	3.2	5.2	5.8	34.8	23.9	14.8	5.2	155
Helwan-Tebin	6.8	5.0	15.0	5.0	8.3	18.3	13.3	13.3	15.0	60
Embaba	2.4	7.1	9.9	11.2	9.9	22.2	20.3	13.7	3.3	212
Giza	0.6	3.1	3.1	1.9	4.4	18.2	20.2	43.5	5.0	159
Shoubra El Kheima	3.5	5.0	4.0	4.0	4.5	26.7	20.1	27.2	5.0	202

Table B.8 (cont.)  
Age of the Building (percent)

2/5

Detail

Kism/ Years	Less than one	1-2	2-3	3-4	4-5	5-10	10-15	15+	Unknown	N
<u>Matareya</u>										
El Ezab	0.8	2.8	3.1	5.4	10.0	30.9	29.4	10.7	6.9	130
El Matareya El-G.	-	4.6	9.1	4.5	13.7	27.3	27.3	4.5	9.0	22
Arab El Hosen	8.3	-	-	8.3	-	16.7	-	41.7	25.0	12
Ein Shams El Garbiya	-	25.0	-	12.5	-	25.0	12.5	25.0	-	8
Ezbat El Nakel	-	-	12.5	12.5	-	-	12.5	62.5	-	8
Arab Abou Tawila	-	-	7.7	-	-	23.1	46.1	23.1	-	13
Tolombat Ein Shams	-	-	9.5	9.5	9.5	33.3	33.3	-	4.9	21
El Zahra	8.3	-	6.3	8.3	-	16.7	25.0	16.7	16.7	12
Ein Shams El Sharkiya	-	-	-	22.2	11.1	-	11.1	44.5	11.1	9
<b>TOTAL %</b>	<b>1.3</b>	<b>3.5</b>	<b>4.7</b>	<b>6.8</b>	<b>8.2</b>	<b>26.4</b>	<b>26.5</b>	<b>14.9</b>	<b>7.7</b>	<b>236</b>

Table B.8 (cont.)  
Age of the Building (percent)

Detail

Kism/Years	Less than one	1-2	2-3	3-4	4-5	5-10	10-15	15+	Unknown	N
<u>Zeitoun</u>										
Masaken El Ameria	1.5	1.5	3.7	1.5	4.4	23.5	22.8	34.5	6.6	136
TOTAL %	1.5	1.5	3.7	1.5	4.4	23.5	22.8	34.5	6.6	136
<u>Sayeda Zeinab</u>										
Al Eni	-	-	-	-	-	9.1	-	63.6	27.3	11
Zenhom	-	7.5	5.6	-	3.7	-	14.8	51.9	16.7	54
TOTAL %	-	6.2	4.6	-	3.1	1.5	12.3	53.8	18.5	65
<u>Masr El Kadima</u>										
Attar El Nabi	-	-	5.7	2.9	-	8.6	14.3	51.4	17.1	35
Kom Ghourab	-	50.0	-	-	-	-	-	25.0	25.0	4
Eshash El Baroud	-	-	-	-	-	-	-	100.0	-	10
Fom El Khalig	-	-	-	-	-	-	10.0	90.0	-	10
TOTAL %	-	3.4	3.4	1.7	-	5.1	10.2	64.4	11.8	59

Table B.8 (cont.)  
Age of the Building (percent)

Detail

Kism/Years	Less than one	1-2	2-3	3-4	4-5	5-10	10-15	15+	Unknown	N
<u>Maadi</u>										
El Essawiya	1.9	5.7	2.9	2.9	7.6	36.2	22.9	15.1	4.8	106
El Basaatin	2.8	2.8	5.9	11.1	2.8	33.3	22.2	13.8	5.6	36
Ezbet Gibriel	-	-	-	7.7	-	30.8	38.8	15.0	7.7	13
<b>TOTAL %</b>	<b>1.9</b>	<b>5.2</b>	<b>3.2</b>	<b>5.2</b>	<b>5.8</b>	<b>34.8</b>	<b>23.9</b>	<b>14.8</b>	<b>5.2</b>	<b>155</b>
<u>Helwan-Tebin</u>										
Kafr El Elw	-	20.0	20.0	20.0	20.0	10.0	10.0	-	-	10
El Tebin	8.0	2.0	14.0	2.0	6.0	20.0	14.0	16.0	18.0	50
<b>TOTAL %</b>	<b>6.8</b>	<b>5.0</b>	<b>15.0</b>	<b>5.0</b>	<b>8.3</b>	<b>18.3</b>	<b>13.3</b>	<b>13.3</b>	<b>15.0</b>	<b>60</b>
<u>Embaba</u>										
One	-	13.3	4.4	8.9	8.9	22.2	20.0	15.6	6.7	45
Two	-	-	-	4.3	4.3	21.7	30.5	30.5	8.7	23
Three	-	-	2.9	8.6	5.7	22.9	37.0	22.9	-	35
Four	6.5	6.5	23.9	15.2	15.2	21.8	6.5	-	4.3	46
Five	-	9.1	-	9.1	27.3	45.5	9.0	-	-	11
Six	3.8	9.6	13.5	15.4	7.7	17.0	19.2	13.5	-	52
<b>TOTAL %</b>	<b>2.4</b>	<b>7.1</b>	<b>9.9</b>	<b>11.2</b>	<b>9.9</b>	<b>22.2</b>	<b>20.3</b>	<b>13.7</b>	<b>3.3</b>	<b>212</b>

Table B. 8 (cont.)  
Age of the Building(percent)

Detail

Kism/Years	Less than one	1-2	2-3	3-4	4-5	5-10	10-15	15+	Unknown	N
<u>Giza</u>										
One	-	1.6	6.5	4.8	3.2	27.4	24.2	29.1	3.2	62
Two	1.5	3.1	-	-	4.6	3.1	16.9	61.6	9.2	65
Three	-	6.7	6.7	-	6.7	60.0	12.2	6.7	-	15
Four	-	5.9	-	-	5.9	5.9	23.5	58.8	-	17
<b>TOTAL %</b>	<b>0.6</b>	<b>3.1</b>	<b>3.1</b>	<b>1.9</b>	<b>4.4</b>	<b>18.2</b>	<b>20.2</b>	<b>43.5</b>	<b>5.0</b>	<b>155</b>
<u>Shoubra El Kheima</u>										
One	2.6	5.1	2.6	-	5.1	35.9	38.5	2.6	7.6	39
Two	-	-	-	-	-	11.1	44.5	33.3	11.1	9
Three	40.0	10.0	20.0	20.0	10.0	-	-	-	-	10
Four	2.9	5.7	5.7	2.9	2.9	34.3	8.7	36.9	-	35
Five	-	-	-	-	7.7	42.3	19.2	27.0	3.8	26
Six	-	-	-	-	-	-	-	93.0	7.0	30
Seven	2.3	11.6	7.6	9.3	7.0	32.6	18.6	7.0	4.7	43
Eight	-	-	-	10.0	-	20.0	60.0	-	13.0	10
<b>TOTAL %</b>	<b>3.5</b>	<b>5.0</b>	<b>4.0</b>	<b>4.0</b>	<b>4.5</b>	<b>26.7</b>	<b>20.1</b>	<b>27.2</b>	<b>5.0</b>	

Table B.9-1  
Number of Families Residing in Building  
By Category<sup>a</sup>

Kism	Category	1	2	3	4	5	6	7	8	9	10-18	Not app
Matareya	1	65	36	24	14	2	5	4	1	-	2	-
	2	9	11	10	15	6	9	3	4	2	1	-
	Total	74	47	34	29	8	14	7	5	2	3	-
Zeitoun	1	31	16	15	7	3	3	-	2	1	-	-
	2	3	16	17	7	3	4	-	1	-	1	-
	Total	34	32	32	14	6	7	-	3	1	1	-
Sayeda Zeinab	1	9	2	-	-	-	1	-	-	-	-	-
	2	18	6	5	7	1	4	2	1	-	1	-
	Total	27	8	5	7	1	5	2	1	-	1	-
Masr El Kadima	1	15	10	6	3	2	1	-	-	-	1	-
	2	5	4	3	1	4	-	-	3	-	-	-
	Total	20	14	9	4	6	1	-	3	-	1	-
Maadi	1	37	24	17	4	2	1	1	1	2	-	-
	2	8	9	15	14	6	8	1	2	-	2	1
	Total	45	33	32	18	8	9	2	3	2	2	1
Helwan-Tebin	1	39	6	3	3	-	-	-	-	-	-	-
	2	-	2	3	1	-	-	2	-	-	-	-
	Total	39	8	6	4	-	-	2	-	-	-	-
Embaba	1	51	35	15	14	5	3	-	1	-	2	-
	2	5	12	18	14	7	7	4	7	1	4	-
	Total	56	47	33	28	12	10	4	8	1	6	-
Giza	1	40	24	21	7	2	5	1	-	-	-	-
	2	5	9	9	12	2	6	1	4	3	-	-
	Total	45	33	30	19	4	11	2	4	3	-	-
Shoubra El Khejma	1	52	39	23	14	4	2	1	-	1	2	-
	2	7	8	12	12	5	8	2	2	-	3	1
	Total	59	47	35	26	9	10	3	2	1	5	1

a 1 = Owners 2 = Renters

Table B.9 -2  
Number of Families Residing in Building (percent)

Kism	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	10-18	not app.	Number
Matareya	32.3	20.9	14.9	12.8	4.7	6.4	3.4	2.0	0.9	1.7	-	235
Zeitoun	25.7	25.0	23.6	11.9	4.4	5.9	-	2.2	0.7	0.7	-	136
Sayeda Zeinab	43.1	15.4	7.7	13.8	1.5	9.2	3.1	3.1	1.5	1.6	-	65
Masr El Kadima	35.6	23.7	15.3	6.8	10.2	1.7	-	5.0	-	1.7	-	59
Maadi	29.0	21.3	20.7	11.6	5.2	5.8	1.3	1.9	1.3	1.3	0.6	155
Helwan-Tebin	65.0	13.3	10.0	6.7	1.7	-	3.3	-	-	-	-	60
Embaba	27.4	22.6	15.6	14.2	6.1	4.7	1.9	4.2	0.5	2.8	-	212
Giza	28.9	22.0	18.9	13.2	2.5	8.8	1.3	2.5	1.9	-	-	159
Shoubra El Kheima	29.7	23.8	18.3	12.7	4.5	5.0	1.5	1.0	0.5	2.5	0.5	202

Table B.10  
 Number of Rooms Occupied  
 By Respondent's Family  
 (percent)

Kism	1 Room	2	3	4	5	6	7	8	Un- known
Matareya	8.2	17.0	37.4	30.6	4.3	1.3	.4	.4	.4
Zeitoun	8.8	22.1	44.1	17.5	3.7	1.5	.7	1.5	-
Sayeda Zeinab	43.1	44.6	9.2	-	1.5	-	-	-	1.6
Masr El Kadima	30.5	32.2	20.3	13.6	3.4	-	-	-	-
Maadi	7.7	23.1	42.6	21.9	2.9	.6	.6	.6	-
Helwan-Tebin	16.7	21.7	23.3	33.3	3.3	1.7	-	-	-
Embaba	5.2	19.3	44.3	21.2	4.2	1.9	1.4	1.9	.6
Giza	18.2	28.3	34.0	11.3	1.9	3.1	-	1.3	1.9
Shoubra El Kheima	5.9	20.3	44.0	20.3	4.0	3.0	1.0	.5	1.0

Table B. 11  
Monthly Rent (percent)

By Kism

Kism	Less than one Pound	L.E 1-2	1.E 2-3	L.E 3-5	L.E 5-10	L.E 10-15	15+	Owner of House	Relative of owner
Matareya	-	2.6	2.1	8.9	14.5	1.3	-	68.5	2.1
Zeitoun	-	2.2	4.4	14.0	19.9	0.7	-	58.8	-
Sayeda Zeinab	4.6	44.6	13.8	10.8	4.6	-	-	20.0	1.5
Masr El Kadima	5.1	6.8	5.1	13.6	5.1	-	-	64.4	-
Maadi	.6	.6	4.5	11.6	22.6	1.3	-	57.7	1.3
Helwan-Tebin	-	1.7	5.0	3.3	3.3	-	-	86.7	-
Embaba	-	0.9	1.9	11.8	18.4	3.3	1.4	60.9	1.4
Giza	-	5.0	5.7	10.1	10.1	-	-	66.0	3.1
Shoubra El Kheima	-	0.5	1.5	9.4	13.4	4.0	0.5	69.8	1.0

TABLE B.12  
Who Collects Rent (Percent)

By Kism

Kism	Landlord	Landlord's Children	Go to Landlord's House	Landlord Lives in Same House	Owners <sup>a</sup>	Other
Matareya	17.0	3.8	3.4	5.1	70.6	-
Zeitoun	22.1	2.9	5.1	8.8	58.8	2.2
Sayeda Zeinab	32.3	1.5	9.2	4.6	20.0	32.3
Masr El Kadima	17.0	8.5	6.8	5.1	62.7	-
Maadi	21.9	3.2	3.9	12.9	57.4	.6
Helwan-Tebin	5.0	1.7	5.0	3.3	85.0	-
Hmbaba	19.3	6.7	4.7	7.1	61.8	.9
Giza	20.8	2.5	3.1	5.0	68.6	-
Shoubra El Kheima	19.8	2.0	2.0	5.4	70.3	.5

<sup>a</sup> Pay no rent.

Table B.13

Building Connected  
to Water  
(percent)

Kism	Yes	No
Matareya	5.1	94.0
Zeitoun	4.4	95.6
Sayeda Zeinab	12.3	87.7
Masr El Kadima	1.7	98.0
Maadi	-	100.0
Helwan-Tebin	1.7	98.3
Embaba	3.3	96.3
Giza	5.0	95.0
Shoubra El Kheima	2.0	98.0

Table B.14

Apartment Connected  
to Water  
(percent)

Yes	No
4.0	96.0
3.7	96.3
12.3	87.7
-	100.0
-	100.0
1.7	98.0
3.3	96.7
5.0	95.0
1.5	98.5

Table B.15  
House Sewage Systems by Category<sup>a</sup>  
(percent)

Kism	Category	Sewage Systems					Total
		Public	Tanks	None	Pipe to canal	Barrel	
Matareya	1	34.0	52.3	1.3	11.1	1.3	153
	2	21.4	68.6	1.4	8.6	0.0	70
Zeitoun	1	78.2	17.9	3.8	0.0	0.0	78
	2	67.3	28.8	3.8	0.0	0.0	52
Sayeda Zeinab	1	0.0	66.7	33.3	0.0	0.0	12
	2	2.2	55.6	40.0	0.0	2.2	45
Masr El Kadima	1	7.9	76.3	13.2	0.0	2.6	38
	2	20.0	75.0	0.0	5.0	0.0	20
Maadi	1	1.1	95.5	1.1	0.0	2.2	89
	2	3.0	95.5	1.5	0.0	0.0	66
Helwan-Tebin	1	2.0	90.2	7.8	0.0	0.0	51
	2	0.0	100.0	0.0	0.0	0.0	8
Embaba	1	0.0	99.2	0.8	0.0	0.0	126
	2	0.0	98.7	0.0	1.3	0.0	79
Giza	1	10.0	81.0	7.0	0.0	2.0	100
	2	13.7	80.4	5.9	0.0	0.0	51
Shoubra El Kheima	1	24.7	71.7	2.9	0.0	0.7	138
	2	36.7	58.3	5.0	0.0	0.0	60
Total	1	20.7	72.2	4.0	2.2	1.0	785
	2	19.1	72.7	6.2	1.8	0.2	451

<sup>a</sup> 1 Owners

2 Renters

Table B.16  
Apartment Sewage System by Category<sup>a</sup>  
(percent)

Kism	Category	Sewage Systems					Total
		Public	Tanks	None	Pipe to canal	Barrel	
Matareya	1	34.0	52.3	1.3	11.1	1.3	153
	2	22.8	68.6	1.4	7.1	0.0	70
Zeitoun	1	76.9	17.9	5.1	0.0	0.0	78
	2	65.4	28.8	5.8	0.0	0.0	52
Sayeda Zeinab	1	0.0	66.7	33.3	0.0	0.0	12
	2	2.2	55.6	40.0	0.0	2.2	45
Masr El Kadima	1	7.9	78.9	10.5	0.0	2.6	38
	2	20.0	75.0	0.0	5.0	0.0	20
Maadi	1	1.1	95.5	1.1	0.0	2.2	89
	2	0.0	97.0	3.0	0.0	0.0	66
Helwan-Tabin	1	2.0	90.2	7.8	0.0	0.0	51
	2	0.0	100.0	0.0	0.0	0.0	8
Embaba	1	0.0	99.2	0.8	0.0	0.0	126
	2	0.0	98.7	0.0	1.3	0.0	79
Giza	1	9.0	82.0	7.0	0.0	2.0	100
	2	13.7	76.5	9.8	0.0	0.0	51
Shoubra El Kheima	1	24.0	69.6	5.8	0.0	0.7	138
	2	36.7	56.7	6.7	0.0	0.0	60
Total	1	20.2	72.1	4.5	2.2	1.0	785
	2	18.6	72.3	7.3	1.6	0.2	451

<sup>a</sup>  
1 Owners

2 Renters

Table B.17  
 Electricity in Apartment and  
 Electricity in Other Apartments in Building (percent)

Electricity in Apartment

Kism	Yes	No	N
Matareya	84.7	15.3	235
Zeitoun	77.2	22.8	136
Sayeda Zeinab	83.1	16.9	65
Masr El Kadima	66.1	33.9	59
Maadi	89.7	10.3	155
Helwan-Tebin	80.0	20.0	60
Embaba	82.5	17.5	212
Giza	85.5	14.5	159
Shoubra El Kheima	91.1	8.9	202

Other Apartments in Building with Electricity

All	Most Have	Half Have	Few Have	No one but us here	None	N
60.4	2.6	1.2	0.4	26.0	9.4	235
63.4	2.9	2.9	0.0	15.4	15.4	136
40.0	3.1	1.5	0.0	43.1	12.3	65
39.0	1.7	1.7	1.7	27.1	28.3	59
63.2	4.5	1.3	0.0	22.6	8.4	155
31.7	0.0	0.0	0.0	60.0	8.3	60
63.2	3.3	0.9	0.5	18.4	13.7	212
63.5	2.5	2.5	0.6	20.8	10.1	159
70.3	0.0	2.5	1.5	19.8	5.9	202

Table B. 18  
Availability of Kitchen & Cooking Place (percent)

Kism	Have kitchen	No Kitchen				Sharing of Kitchen	
		cook in room	cook in hall	stair-way	other	Yes	No
Matareya	78.3	9.8	8.5	3.0	.4	3.4	96.6
Zeitoun	73.5	11.0	14.7	.7	.7	3.7	96.3
Sayeda Zeinab	7.7	50.8	36.9	3.1	1.5	4.4	95.3
Masr El Kadima	15.3	51.6	22.0	3.4	1.7	5.1	94.9
Maadi	75.5	5.8	16.8	1.3	1.3	2.6	97.4
Helwan-Tebin	31.7	28.3	31.7	8.3	-	1.7	98.3
Embaba	69.8	6.6	20.8	1.4	.9	3.3	96.7
Giza	42.8	23.9	25.8	5.0	2.5	5.7	94.3
Shoubra El Kheima	77.2	9.4	12.4	1.0	.5	3.0	97.0

Table B.19  
Place of Washing Kitchen Utensils by Category<sup>a</sup> &

Kism	Kitchen or Bath		Entrance		Canal		Courtyard		Roof		Room or Hall		By Public Tap		Others		Owners	Renters
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2		
Matareya	52.9	45.7	13.7	7.1	1.3	1.7	8.5	4.3	0.7	0.0	20.9	35.7	1.3	4.3	0.7	0.0	153	70
Zeitoun	55.1	57.7	9.0	7.7	0.0	0.9	5.1	3.8	1.3	1.9	26.9	28.8	2.6	0.0	0.0	0.0	78	52
Sayedā Zeinab	8.3	4.4	33.3	17.8	0.0	0.0	16.7	28.9	0.0	2.2	41.7	40.0	0.0	6.7	0.0	0.0	12	45
Masr El Kadima	5.3	15.0	34.2	15.0	0.0	0.0	28.9	15.0	2.6	0.0	28.9	40.0	0.0	10.0	0.0	0.0	38	20
Maadi	50.6	50.0	13.5	9.1	2.2	0.0	10.1	9.1	0.0	0.0	22.5	31.8	0.0	0.0	1.1	0.0	89	66
Helwan-Tebin	9.8	12.5	5.9	25.0	13.7	0.0	43.1	25.0	0.0	0.0	27.5	37.5	0.0	0.0	0.0	0.0	51	8
Embaba	46.8	53.2	19.0	10.1	0.8	5.0	7.9	3.8	0.0	0.0	24.6	30.4	0.8	1.3	0.0	0.0	126	79
Giza	27.0	25.5	15.0	13.7	0.0	1.3	21.0	9.8	3.0	0.0	32.0	51.0	1.0	0.0	1.0	0.0	100	51
Shoubra El Kheima	55.1	63.3	15.2	10.0	5.8	0.0	10.1	6.7	0.0	0.0	13.0	18.3	0.7	0.0	0.0	0.0	138	60
Total	43.2	43.0	15.3	10.9	2.5	1.1	13.5	9.1	0.8	0.4	23.4	33.5	0.9	2.0	0.4	0.0	785	451

<sup>a</sup> 1 Owners 2 Renters

B-35

Table. B.20  
Place of Washing Laundry by Category<sup>a</sup> %

Kism	Kitchen or Bath		Entrance		Canal		Courtyard		Roof		Room or Hall		By Public Tap		Others		Owners	Renters
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2		
Mataroya	38.6	25.7	16.7	7.1	0.7	1.4	8.5	8.6	0.7	0.0	34.6	55.7	0.7	1.4	0.0	0.0	153	70
Zeitoun	32.1	32.7	14.1	9.6	0.0	0.0	2.5	5.8	3.8	0.0	44.9	50.0	1.3	0.0	1.3	1.9	78	52
Sayeda Zainab	8.3	0.0	33.3	20.0	0.0	0.0	16.7	33.3	0.0	2.2	41.7	44.4	0.0	0.0	0.0	0.0	12	45
Masr El Kadima	5.8	5.0	34.2	15.0	0.0	0.0	28.9	15.0	2.6	3.0	28.9	65.0	0.0	0.0	0.0	0.0	38	20
Maadi	31.5	30.3	18.0	7.6	0.0	0.0	10.1	12.1	2.2	0.0	38.2	50.0	0.0	0.0	0.0	0.0	89	66
Helwan-Tabin	5.9	12.5	7.8	25.0	7.8	0.0	45.1	2.5	0.0	0.0	31.4	37.5	2.0	0.0	0.0	0.0	51	8
Dababa	28.6	26.6	24.6	8.9	0.8	0.0	7.1	3.8	0.0	0.0	38.1	60.8	0.0	0.0	0.8	0.0	126	79
Giza	21.0	13.7	17.0	13.7	0.0	0.0	20.0	8.8	3.0	0.0	38.0	60.8	1.0	0.0	0.0	2.0	100	51
Shoubra El Khayma	37.7	30.0	15.2	13.3	2.9	0.0	13.8	10.0	0.0	0.0	29.7	43.3	0.7	0.0	0.0	3.3	138	50
Total	28.9	22.8	18.1	11.3	1.3	0.2	13.8	11.3	1.3	0.2	35.8	53.0	0.6	0.2	0.3	0.9	785	451

<sup>a</sup> 1 Owners      2 Renters

Table B.21  
Availability of Water & Water Bill (percent)

Kism	Yes					No bill	No water in house
	Monthly	Two months	More than two months	Not pay	No definite period		
Matareya	1.3	3.0	-	-	-	-	95.7
Zeitoun	0.7	0.7	-	-	-	1.6	97.0
Sayeda Zeinab	4.6	3.1	1.5	3.1	-	-	87.7
Masr El Kadima	-	-	-	-	-	-	100.0
Maadi	-	-	-	-	-	-	100.0
Helwan-Tebin	-	2.0	-	-	-	-	98.0
Embaba	-	2.4	-	-	-	-	97.6
Giza	.6	3.8	-	.6	-	-	92.0
Shoubra El Kheima	1.0	-	-	-	-	-	99.0

Table B22  
Persons who get the water (percent)

	From Neighbor or Landlord	From Tap	From Mosque
Paid Person	4.4	10.6	5.5
Female Children of the Family	7.5	5.9	10.9
Male Children of the Family	0.9	0.9	0.0
Adult Females of the Family	83.3	82.6	82.2
Adult Males of the Family	0.9	0.0	0.0
A relative (free)	0.2	0.0	1.4
Other	2.8	0.0	0.0

Table B. 23  
System of Payment<sup>a</sup>  
(percent)

Kism	Source of Water	Not Pay	Month-ly	Week-ly	Daily	Per Con-tainer
Matareya	Neighbor	19.6	4.3	-	-	2.1
	Public Tap	48.9	20.4	-	.9	-
	Mosque	0.4	1.7	-	2.1	6.4
Zeitoun	Neighbor	4.5	25.7	-	17.6	13.2
	Public Tap	27.2	11.0	-	0.7	-
	Mosque	1.5	-	-	-	-
Sayeda Zeinab	Neighbor	1.5	-	-	3.2	1.5
	Public Tap	96.9	1.5	-	4.6	1.6
	Mosque	-	-	-	-	-
Masr El Kadima	Neighbor	1.7	11.9	-	5.0	5.1
	Public Tap	78.0	1.7	-	1.7	-
	Mosque	-	-	-	-	-
Maadi	Neighbor	8.4	18.7	-	10.3	3.2
	Public Tap	48.4	14.2	.6	2.6	.6
	Mosque	1.3	.6	-	-	-
Helwan-Tebin	Neighbor	1.7	-	-	-	-
	Public Tap	80.0	11.7	-	-	-
	Mosque	6.7	-	-	-	-
Embaba	Neighbor	38.7	2.4	-	2.4	24.5
	Public Tap	29.0	-	-	-	3.0
	Mosque	-	-	-	-	-
Giza	Neighbor	18.9	8.8	-	25.1	21.4
	Public Tap	15.7	0.6	-	1.3	-
	Mosque	9.5	4.4	0.6	-	0.6
Shoubra El Kheima	Neighbor	15.3	4.0	-	1.0	0.5
	Public Tap	30.7	40.6	-	0.5	-
	Mosque	-	9.4	1.6	-	-

Table B. 24  
Person who received Money  
(percent)

Hired Person	Tap Guard	Neighbor
.9	-	5.5
9.8	11.9	-
-	9.8	-
2.9	-	53.7
11.0	.7	-
-	-	-
-	-	4.6
6.2	-	1.5
-	-	-
-	-	22.0
1.7	-	-
-	-	-
1.3	-	31.0
9.0	8.4	.6
-	-	.6
-	-	-
10.0	1.7	-
-	-	-
.9	2.4	26.4
2.0	1.0	-
-	-	-
7.5	-	47.8
.6	-	1.3
1.3	1.9	2.5
1.5	2.0	2.0
9.4	31.7	-
1.0	9.4	-

a Adds to over 100 because some respondents used more than one source.

Table B.25  
Reaction to General Tap in Building

By Kism

Reaction to a General  
Tap in the Building  
(percent)

Kism	Yes	Disapprove of Having Water	Tap for each Family	Only Resident	Not App
Matareya	42.6	-	22.1	31.1	4.3
Zeitoun	56.6	-	18.4	21.3	3.7
Sayedza Zeinab	72.7	-	-	18.2	9.1
Masr El Kadima	76.3	1.7	1.7	20.3	-
Maadi	61.9	-	13.5	23.9	0.6
Helwan-Tebin	31.7	-	1.7	65.0	1.7
Embaba	65.9	-	5.2	26.4	2.8
Giza	57.9	0.6	8.8	27.7	5.0
Shoubra El Kheima	53.5	-	18.3	27.2	1.0

Readiness to pay  
for Family Consumption  
(percent)

Ready	Not Ready	Not App
93.6	1.7	4.7
95.6	0.7	3.7
75.4	7.7	16.9 <sup>a</sup>
98.3	1.7	-
98.7	1.3	-
96.7	1.7	1.7
94.8	2.8	2.4
93.7	1.9	4.4
96.0	3.0	1.0

<sup>a</sup> Respondents want completely  
new housing

Table B.26  
Amount Respondent Ready to Pay  
(percent)

Kism/P.T. month	Less than 25p	25-50	50-75	75-100	100-150	Not ready to pay	As Meter	Not App.
Matareya	3.4	20.4	17.4	8.1	6.8	1.3	38.3	4.3
Zeitoun	3.7	30.9	25.0	4.4	1.5	0.7	30.1	3.7
Sayeda Zeinab	6.2	20.2	6.2	6.2	4.7	7.7	32.3	16.9
Masr El Kadima	15.3	32.2	25.3	1.7	5.1	-	30.5	-
Maadi	3.2	23.9	16.1	7.7	5.8	0.6	41.9	0.6
Helwan-Tebin	5.0	18.3	21.7	10.0	1.7	1.7	40.0	1.7
Embaba	7.1	25.5	21.7	10.4	7.1	0.9	25.0	2.4
Giza	10.1	17.0	6.9	5.7	5.0	1.9	49.1	4.4
Shoubra El Kheima	6.4	29.7	27.7	8.9	9.4	2.5	14.4	1.0

Table B.27  
 Neighbor's readiness to pay for their water consumption  
 (percent)

Kism	Yes	No	Most probably	Some	Not known	Only Resident	Not applicable
Matareya	54.0	1.3	2.1	1.3	5.5	31.1	4.7
Zeitoun	62.5	-	1.5	3.7	5.7	22.8	3.7
Sayeda Zeinab	40.0	-	-	1.5	4.6	35.4	18.5
Masr El Kadima	69.5	-	-	-	5.1	25.4	-
Maadi	67.1	-	1.9	1.3	3.2	25.8	.6
Helwan-Tebin	29.3	-	-	-	5.0	65.0	1.7
Embaba	59.9	-	2.8	.9	6.6	27.4	2.4
Giza	63.5	-	-	-	3.8	28.3	4.4
Shoubra El Kheima	61.9	2.5	1.5	-	6.4	26.7	1.0

Table B.28  
Who Collects Money if Tap is Shared (percent)  
By Kism

Kism	Landlord pays	Landlord Collects	Landlord Collects According to Family Size	Landlord Collects According to No. of Persons	Govern- ment	Other	Owner <sup>a</sup>	Only Resident	Not App
Matareya	8.9	43.8	1.7	1.3	.4	1.7	31.5	6.4	4.3
Zeitoun	17.6	36.8	1.5	4.4	-	4.4	23.5	8.1	3.7
Sayeda Zeinab	6.2	15.4	3.1	4.6	7.7	4.6	30.8	10.8	16.9
Masr El Kadima	25.4	33.9	1.7	-	-	5.1	28.8	5.1	-
Maadi	16.8	41.9	.6	4.5	.6	3.9	27.1	4.5	-
Helwan-Tebin	15.0	16.7	-	1.7	-	-	65.0	-	1.7
Embaba	9.9	47.2	4.2	.9	-	2.8	27.4	5.2	2.4
Giza	17.6	39.0	3.8	-	.6	1.9	27.7	4.4	5.0
Shoubra El Kheima	21.3	25.7	4.5	2.5	.5	5.4	29.7	9.4	1.0

<sup>a</sup> Owner pays, and frequently is the only resident.

Table B.29-1  
 Improvement needed in the Building (percent)  
 First Priority

By Kism

Kism	Water	Sewage	Electricity	Restoration	Painting	Roof	Other
Matareya	79.2	17.9	1.7	.4	.4	-	.4
Zeitoun	83.1	8.8	3.7	.7	1.5	0.7	1.5
Sayeda Zeinab	80.0	6.2	3.1	1.5	1.5	1.5	6.2
Masr El Kadima	94.9	1.7	3.4	-	-	-	-
Maadi	85.2	14.2	.6	-	-	-	-
Helwan-Tebin	90.0	10.0	-	-	-	-	-
Enbaba	67.5	27.4	3.8	.8	-	.5	-
Giza	83.0	15.8	.6	.6	-	-	-
Shoubra El Kheima	68.8	23.8	3.4	1.0	-	3.0	-

Table B. 29-2  
Improvement Needed in the Building (percent)  
Owners and Tenants <sup>a</sup>  
By Kism

Kism	Water		Sewage		Electricity		Restoration		Roof		Other		Total	
	1	2	1	2	1	2	1	2	1	2	1	2	Owners	Renters
Matareya	83.7	80.0	15.7	15.7	0.7	2.9	0.0	1.4	0.0	0.0	0.0	0.0	153	70
Zeitoun	87.2	84.6	6.4	13.5	3.8	0.0	1.3	0.0	0.0	1.9	1.3	0.0	78	52
Sayeda Zeinab	75.0	91.1	16.7	2.2	0.0	2.2	0.0	2.2	0.0	0.0	8.3	2.2	12	45
Masr El Kadima	97.4	90.0	0.0	5.0	2.6	5.0	0.0	0.0	0.0	0.0	0.0	0.0	38	20
Mnadi	83.1	87.9	15.7	12.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89	66
Helwan-Tebin	92.2	87.5	7.8	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51	8
Embaba	65.1	74.7	28.6	21.5	4.8	2.5	0.8	1.3	0.8	0.0	0.0	0.0	126	79
Giza	87.0	84.3	12.0	13.7	0.0	2.0	1.0	0.0	0.0	0.0	0.0	0.0	100	51
Shoubra El Kheima	68.1	73.3	24.6	18.3	4.3	1.7	0.0	3.3	2.9	3.3	0.0	0.0	138	60
<b>Total</b>	<b>79.7</b>	<b>82.0</b>	<b>16.7</b>	<b>14.2</b>	<b>2.3</b>	<b>1.8</b>	<b>0.4</b>	<b>1.1</b>	<b>0.6</b>	<b>0.7</b>	<b>0.3</b>	<b>0.2</b>	<b>785</b>	<b>451</b>

<sup>a</sup><sub>1</sub> = owners  
<sub>2</sub> = renters

Table B. 30  
Articles Owned  
(percent)

Kism	Radio		Television		Refrigerator		Stove		Washing Machine		Own all Items		Own None	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Matareya	93.6	6.4	67.7	32.3	12.7	87.3	41.7	58.3	29.8	70.2	10.6	89.4	6.4	93.6
Zeitoun	83.0	17.0	55.8	44.2	9.6	90.4	34.5	65.5	16.8	83.2	8.1	91.9	12.5	87.5
Sayeda Zeinab	77.6	22.4	61.6	38.4	12.3	87.7	20.0	80.0	18.4	81.6	7.7	92.3	16.9	83.1
Masr El Kadima	83.2	16.8	45.9	54.1	8.5	91.5	18.7	81.3	22.1	77.9	8.5	91.5	15.3	84.7
Maadi	87.6	12.4	75.4	24.6	23.8	76.2	43.1	56.9	34.3	65.7	14.2	85.8	3.7	96.1
Helwan-Tebin	81.8	18.2	38.5	61.5	3.4	96.6	15.1	84.9	8.4	91.6	0.0	100.0	18.3	81.7
Embaba	85.0	15.0	67.5	32.5	15.6	84.4	42.5	57.5	25.6	74.4	9.9	90.1	8.3	91.7
Giza	77.9	22.1	36.5	63.5	8.8	91.2	23.9	76.1	27.5	72.5	4.4	95.6	13.2	86.8
Shoubra El Kheima	84.9	15.1	65.5	34.5	18.9	81.1	41.7	58.3	29.8	71.2	14.9	85.1	10.4	89.6

Table B. 31  
Vehicles Owned  
(percent)

Kism	Bicycle		Motor Cycle		Car		Own None	
	Yes	No	Yes	No	Yes	No	Yes	No
Matareya	7.7	92.3	1.4	98.6	3.0	97.0	88.9	11.1
Zeitoun	6.6	93.4	0.0	100.0	0.7	99.3	92.6	7.4
Sayeda Zeinab	3.1	96.9	1.5	98.5	0.0	100.0	95.4	4.6
Masr El Kadima	3.4	96.6	0.0	100.0	1.7	98.3	94.9	5.1
Maadi	16.1	83.9	1.9	98.1	0.6	99.4	81.9	18.1
Helwan-Tebin	6.7	93.3	0.0	100.0	1.7	98.3	91.7	8.3
Embaba	10.9	89.1	4.7	95.3	1.4	98.6	83.0	17.0
Giza	8.2	91.8	1.9	98.1	3.1	96.9	86.8	13.2
Shoubra El Kheima	9.9	90.1	1.5	98.5	3.0	97.0	85.6	14.4

**TABLE B.32**  
Reasons for Choosing to Live in Neighborhood (percent)

Reasons/Risms	Matareya		Zeitoun		Sayeda Zeinab		Masr El Kadima		Maadi		Helwan-Tebin		Embaba		Giza		Shoubra El Kheima	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Born Here	33.4	66.6	15.5	84.5	27.1	72.9	61.1	38.9	16.8	83.2	18.5	81.2	23.2	76.8	35.3	64.7	25.3	74.7
Only place available	64.3	35.7	74.2	25.8	74.0	26.0	38.9	61.1	69.8	30.2	68.2	31.8	81.7	18.3	69.1	30.9	59.3	40.7
Quiet and comfortable	42.4	57.6	33.1	66.9	17.9	82.1	20.4	79.5	35.6	64.4	61.8	38.2	39.4	60.6	49.0	51.0	41.2	58.8
Friends and Relatives live here	20.8	79.2	17.7	82.3	6.0	94.0	17.0	8.3	20.6	79.4	51.8	48.2	17.4	82.6	22.6	77.4	21.4	78.6
Close to work	27.2	72.8	11.8	88.2	12.9	87.1	10.2	89.8	11.1	88.9	13.4	86.6	22.3	77.7	24.5	75.5	13.4	86.6
Cheap	-	100.0	.7	99.3	-	100.0	.6	99.4	.6	99.4	-	100.0	-	100.0	2.4	97.6	0.5	99.5

Table B. 33  
Advantages of the Neighborhood  
(percent)

Kism/Reason	Close to work		Friends		Relatives		Cheap		Don't like it		Other	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Matareya	24.2	75.8	25.5	74.5	18.3	81.7	17.0	83.0	29.7	70.3	7.7	92.3
Zeitoun	19.9	80.1	32.0	68.0	15.7	84.3	12.5	87.5	35.4	64.6	7.4	92.6
Sayeda Zeinab	12.0	88.0	19.9	80.1	21.4	78.6	18.8	81.2	46.4	53.6	4.6	95.4
Masr El Kadima	15.3	84.7	20.4	79.6	18.7	81.3	13.6	86.4	33.9	66.1	11.9	88.1
Maadi	19.3	80.7	21.3	78.7	13.7	86.3	10.2	89.8	30.3	69.7	11.1	88.9
Helwan-Tebin	61.5	38.5	11.7	88.3	19.8	80.2	6.6	93.4	13.3	86.7	3.3	96.7
Embaba	16.6	83.4	15.6	84.4	11.3	88.7	9.0	91.0	41.1	58.9	14.3	85.7
Giza	23.1	76.9	17.6	82.4	24.5	75.5	18.2	81.8	23.9	76.1	6.1	93.9
Shoubra El Kheima	25.8	74.2	20.4	79.6	14.4	85.6	8.5	91.5	27.5	72.7	17.5	82.5

Table B.34.1  
 Needed Improvement in Neighborhood  
 By Priority (Streets)

By Kism  
 (percent)

Kism	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	6th Priority	Not App
Matareya	2.1	12.8	30.2	28.1	9.8	3.0	14.0
Zeitoun	2.2	29.4	29.4	16.2	4.4	2.9	15.5
Sayeda Zeinab	6.2	3.1	29.2	10.8	4.6	1.5	44.6
Masr El Kadima	-	10.2	33.9	18.6	11.8	8.5	17.0
Maadi	1.3	1.9	36.8	30.3	12.3	-	17.4
Helwan-Tebin	-	5.0	20.0	50.0	18.3	1.7	5.0
Embaba	.9	.5	20.3	22.6	34.0	9.4	12.3
Giza	1.3	10.7	42.8	12.6	7.5	1.3	23.8
Shoubra El Kheima	3.5	10.4	40.6	20.3	12.4	4.5	8.3

Table B.34.2  
 Needed Improvement in Neighborhood  
 by Priority

(Water)

By Kism

(percent)

Kism	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	6th Priority	Not App
Matareya	77.0	16.2	3.0	1.3	-	0.4	2.1
Zeitoun	77.9	14.0	3.7	1.5	-	-	2.9
Sayeda Zeinab	78.5	10.8	-	-	-	-	10.7
Masr El Kadima	89.8	1.7	8.5	-	-	-	-
Maadi	81.3	16.2	1.9	0.6	-	-	-
Helwan-Tebin	86.7	8.3	3.3	-	-	1.7	-
Embaba	55.7	32.5	7.1	1.9	0.5	0.5	1.9
Giza	81.8	13.8	0.6	-	-	-	3.8
Shoubra El Kheima	55.9	31.2	6.9	1.0	1.0	-	4.0

Table B.34.3  
 Needed Improvement in Neighborhood  
 by Priority (Sewage)

By Kism  
 (percent)

Kism	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	6th Priority	Not App
Matareya	17.4	43.4	6.8	2.6	-	0.4	29.4
Zeitoun	10.3	24.3	5.9	2.3	8.8	4.4	43.4
Sayeda Zeinab	6.2	69.2	4.6	3.1	-	-	16.9
Masr El Kadima	-	72.8	17.0	1.7	-	1.7	6.8
Maadi	14.1	70.3	12.3	1.9	-	-	1.3
Helwan-Tebin	8.3	73.4	18.3	-	-	-	-
Embaba	31.6	54.8	9.9	.9	.9	-	1.9
Giza	15.8	67.9	5.0	1.3	.6	-	9.4
Shoubra El Kheima	26.2	39.6	5.4	6.4	4.5	3.0	14.9

Table B.34.4  
 Needed Improvement in Neighborhood  
 by Priority

(Electricity)

By Kism

(percent)

Kism	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	6th Priority	Not App
Matareya	1.7	5.5	7.2	3.8	3.8	6.4	71.6
Zeitoun	2.8	8.8	12.5	7.4	7.4	9.6	51.5
Sayeda Zeinab	6.2	1.5	15.4	-	3.0	3.1	70.8
Masr El Kadima	10.0	13.6	5.1	11.9	6.8	6.8	45.8
Maadi	0.6	2.6	7.7	2.6	1.3	14.8	70.7
Helwan-Tebin	5.0	6.7	11.7	1.7	5.0	3.3	66.6
Embaba	4.2	4.2	10.4	7.1	5.6	9.9	57.6
Giza	0.6	2.5	8.8	5.7	3.1	8.2	71.1
Shoubra El Kheima	4.5	1.5	3.5	5.0	8.8	8.4	68.3

Table B.34.5  
 Needed Improvement in Neighborhood  
 by Priority (Transportation)

By Kism

(percent)

Kism	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	6th Priority	Not App
Matareya	.4	9.4	22.6	23.4	17.0	2.6	24.6
Zeitoun	1.5	8.1	22.0	17.6	11.0	7.4	32.4
Sayeda Zeinab	-	-	1.5	13.8	10.8	-	73.8
Masr El Kadima	-	-	10.2	35.6	27.1	5.1	22.0
Maadi	-	2.6	15.5	25.5	14.5	1.9	40.0
Helwan-Tebin	-	5.0	36.7	13.3	10.0	-	35.0
Embaba	1.4	4.2	31.6	34.0	15.1	1.9	11.8
Giza	-	0.6	13.8	15.1	13.8	3.8	52.9
Shoubra El Kheima	6.4	10.4	28.3	36.6	6.9	1.0	10.4

Table B.34.6  
 Needed Improvement in Neighborhood  
 by Priority.

(Schools)

By Kism  
 (percent)

Kism	1st Priority	2nd Priority	3rd Priority	4th Priority	5th Priority	6th Priority	Not App
Matareya	1.3	9.8	17.0	14.5	16.6	9.8	31.0
Zeitoun	4.4	8.8	8.8	19.1	14.0	14.0	30.9
Sayeda Zeinab	-	-	6.2	6.2	6.2	9.2	72.2
Masr El Kadima	-	1.7	10.2	11.9	22.0	30.5	23.7
Maadi	2.6	5.8	18.7	16.1	22.6	7.1	27.1
Helwan-Tebin	-	1.7	6.7	21.7	21.7	11.7	36.5
Embaba	4.8	2.8	17.9	22.6	25.9	15.6	10.4
Giza	-	-	5.7	12.6	12.6	8.8	60.3
Shoubra El Kheima	1.5	2.0	9.4	19.3	35.6	10.4	27.8

Table B.35  
Type of Family (percent)  
by Kism

Kism	Nuclear	Extended	Compound	Nuclear and Relatives	Non-Relatives	N
Matareya	83.8	14.5	0.4	1.3	0.0	235
Zeitoun	81.7	15.4	0.0	2.0	0.0	136
Sayeda Zeinab	84.6	12.3	0.0	3.1	0.0	65
Masr El Kadima	78.0	22.0	0.0	0.0	0.0	59
Maadi	88.3	10.4	0.0	1.3	0.0	155
Helwan-Tebin	71.7	21.7	3.2	1.7	1.7	60
Embaba	86.8	11.8	1.4	0.0	0.0	212
Giza	84.9	14.5	0.0	0.6	0.0	159
Shoubra El Kheima	81.7	16.3	1.5	0.5	0.0	202
Total	83.6	14.5	0.7	1.1	0.1	1283

Table B.36  
Number of Persons and Households

By Kism

Kism	No. of Households	No. of Persons	Mean Person -Household
Matareya	235	1296	5.5
Zeitoun	136	806	5.9
Sayeda Zeinab	65	369	5.7
Masr El Kadima	59	362	6.1
Maadi	155	869	5.6
Helwan-Tebin	60	342	5.7
Embaba	212	1211	5.7
Giza	159	945	5.9
Shoubra El Kheima	202	1154	5.7
Total	1283	7354	5.7

TABLE B.37  
Age Composition of Household (percent)

Kism/Age	<u>Dependents</u>		<u>Working Age by Sex</u>		<u>6 Years to 15 Years by Sex</u>		Number
	Under 6	Over 60	Male	Female	Male	Female	
Matareya	18.0	3.0	30.0	27.0	13.0	9.0	1289
Zeitoun	16.8	2.7	27.0	27.2	13.4	12.9	806
Sayeda Zeinab	9.0	4.0	30.0	30.7	14.4	11.9	349
Masr El Kadima	18.8	4.7	26.6	25.0	12.1	12.7	362
Maadi	16.0	2.4	31.9	27.0	11.9	10.8	869
Helwan-Tebin	19.6	2.3	26.6	25.4	14.3	11.8	342
Embaba	14.8	2.8	30.8	27.7	12.1	12.3	1211
Giza	16.3	3.9	28.9	25.6	13.4	11.9	954
Shoubra El Kheima	14.4	2.9	30.0	28.8	13.6	10.4	1122
<b>TOTAL</b>	<b>16.4</b>	<b>3.4</b>	<b>28.9</b>	<b>25.9</b>	<b>13.1</b>	<b>12.3</b>	<b>7304</b>

Table 2-20  
 Main and Secondary Occupations<sup>a</sup>  
 by Man<sup>b</sup>

Class	Production Occupations	Adminis- trative	Clerical	Commercial & Retail Services	Sales Positions	Agri- cultural	Professional & Technical	Managers in Transpor- tation & Com- m.	Craftsman	Skilled and Semi-Skilled	Service-occupations & Home work	Unskilled laborers and home workers	Retired	Unemployed	Disabled & sick, unemployed Students & crafters	Un- known
Managers	2.0	.0	14.0	5.5 (1.2)	5.0 (.8)	1.3	-	5.0 (.8)	12.7 (1.7)	16.2 (1.7)	5.5	5.0 (.8)	5.0 (.8)	2.5	.5	.0
Professionals	2.0	2.0	12.2	5.1 (.7)	5.3	2.0	.7	5.1 (.7)	10.2	6.6	17.6	5.0	7.0	5.0	2.2	.7
Administrative	-	1.5	5.2	12.1	5.2	-	-	1.3	10.0 (1.3)	5.2	6.6	5.2	5.5	5.2	5.5	-
Clerical	1.7	-	5.0	1.7	14.0	-	1.7	5.0	17.0 (1.7)	11.0	10.2	20.3	5.1	2.0	-	1.7
Sales	2.0	2.2	11.5 (.4)	5.0	5.2	.5	.5	2.0	10.0 (1.5)	5.7	12.2	5.5 (.8)	2.5	2.0	-	2.5
Transportation & Communication	-	5.0	-	5.3	-	-	5.7	2.3	13.0	20.0	12.2	11.7 (1.7)	1.7	1.0	1.7	-
Manufacturing	2.0	.0	5.0 (.5)	5.5 (1.5)	7.1	2.2 (.5)	-	2.0	22.5	12.7	22.5 (1.5)	5.7 (.8)	5.0	2.0	1.0 (.5)	.5
Service Occupations	1.3	7.5	1.7	14.5 (1.5)	7.5	5.0	-	5.0	16.0	17.7	10.1 (.5)	5.0 (.5)	5.0	2.0	.5	1.3
Home Work	1.5	5.0	10.0	5.5 (.5)	5.2	1.0	1.0 (.5)	7.0 (.5)	10.3	14.3 (1.3)	12.5	5.5 (.5)	5.0	5.0	1.5	-

<sup>a</sup> Secondary occupations in brackets ( ).

Table B. 39  
Income from Main & Secondary Occupations<sup>a</sup> (Percent)

Kism/LE - month	-10	10-20	20-30	30-50	50-75	75-100	100-200	200+	Unknown
Matareya	1.3	8.1 (3.0)	18.3 (1.7)	35.3 (0.4)	19.1	2.6	4.3	0.4	10.6
Zeitoun	4.4 (1.5)	7.4	25.7 (0.7)	33.1 (1.5)	11.8	5.9	3.7	0.7	7.4
Sayeda Zeinab	1.5	10.8	12.3	29.2	18.5	6.2	7.7	3.1	10.8
Masr El Kadima	1.7	11.9 (1.7)	35.6	23.7	13.6	1.7	1.7	3.4	6.8
Maadi	0.6	7.1 (1.3)	17.4	38.7 (0.6)	19.4	5.2	3.2	-	8.4
Helwan-Tebin	1.7	10.0	34.0	21.7	16.7	5.0	5.0	-	5.0
Embaba	0.5 (1.4)	9.0 (2.8)	18.4 (0.9)	30.7 (0.5)	18.4 (0.9)	5.7 (0.5)	4.7	0.5	12.3
Giza	1.3	12.0	17.6	29.6	13.2	8.2	3.8	1.3	13.2
Shoubra El Kheima	2.5	5.0 (1.0)	22.8 (1.5)	33.7 (0.5)	14.4	5.4 (0.5)	6.9 (0.5)	-	9.4

<sup>a</sup> Income from secondary occupation in brackets ( )

Table B.40  
Educational Status %

Kiam	Illiterate		Read & Write	Not Completed Primary	Completed Primary	Not Completed Preparatory	Completed Preparatory	Not Completed Secondary	Completed Secondary	Not Completed University	Completed University	N.
	Male	Female										
Mataraya	16.1	25.6	4.9	20.3	9.8	7.6	4.8	4.2	4.4	1.1	1.2	1088
Zaitoun	18.4	26.2	5.7	22.0	4.6	8.6	8.6	4.3	4.6	.7	.7	672
Sagada Zainab	27.1	29.1	5.1	18.4	5.9	5.6	2.1	3.5	2.9	-	.3	339
Masr El Kadima	28.9	35.4	6.1	15.6	3.4	4.1	2.7	2.1	.3	.7	.7	294
Madi	15.8	22.3	6.3	20.6	6.3	8.3	4.6	5.7	5.6	1.8	.7	713
Halsan-Tabin	20.4	31.4	6.9	23.4	4.7	6.2	1.5	1.8	2.9	.4	.4	274
Dabaha	21.1	29.5	3.4	17.4	7.3	6.3	2.9	4.2	5.6	.7	1.0	1023
Giza	23.4	29.4	4.4	17.6	2.6	6.7	5.2	6.7	5.0	.9	.8	755
Shoubra El Khayma	18.5	25.2	3.3	17.8	10.5	8.1	2.1	6.3	6.9	1.7	1.6	977

Table B.41  
Marital Status by Kism (percent)

Kism	Married	Widowed	Divorced	Under Marriage Age	Never Married	N
Matareya	38.1	1.9	0.2	47.3	12.5	1289
Zeitoun	33.9	2.6	0.2	49.0	14.3	806
Sayeda Zeinab	33.8	3.4	1.1	44.7	17.6	349
Masr El Kadima	35.4	2.5	0.6	46.7	14.8	362
Maadi	36.2	1.9	0.5	44.9	16.5	869
Helwan-Tebin	36.8	3.2	0.3	50.6	9.1	342
Embaba	36.6	1.9	0.4	46.1	15.0	1211
Giza	32.1	6.5	0.4	47.8	13.2	954
Shoubra El Kheima	35.4	3.4	0.4	45.2	15.6	1122
Total	35.6	2.9	0.4	46.8	14.3	7304

Table B.42.1  
Density by Kism and Household

Number in House- hold	(Matareya)			(Zeitoun)			(Sayeda Zeinab)		
	No. of Persons	No. of Rooms	Density	No. of Persons	No. of Rooms	Density	No. of Persons	No. of Rooms	Density
1	2	5	0.4	1	1	1.0	1	2	0.5
2	38	44	0.9	26	32	0.8	8	6	1.3
3	69	57	1.2	30	28	1.1	12	6	2.0
4	124	104	1.2	60	38	1.6	32	14	2.3
5	235	133	1.8	70	50	1.4	60	21	2.9
6	252	138	1.8	168	88	1.9	102	34	3.0
7	217	105	2.1	112	46	2.4	56	13	4.3
8	173	72	2.4	200	72	2.8	48	7	6.9
9	63	28	2.3	63	34	1.9	18	3	6.0
10	50	22	2.3	40	12	3.3	10	2	5.0
11	33	14	2.4	11	2	5.5	22	4	5.5
12	24	11	2.2	12	3	4.0	-	-	-
13	13	1	13.0	13	4	3.3	-	-	-
14	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-
Total density	1296	734	1.8	806	410	2.0	369	112	3.3

Table B.42.2  
Density by Kism and Household

Number in House- hold	(Masr El Kadima)			(Maadi)			(Helwan-Tebin)		
	No. of Persons	No. of Rooms	Density	No. of Persons	No. of Rooms	Density	No. of Persons	No. of Rooms	Density
1	1	1	1.0	1	1	1.0	1	1	1.0
2	8	5	1.6	20	26	0.8	12	9	1.3
3	12	6	2.0	57	52	1.1	24	19	1.3
4	24	13	1.8	108	71	1.5	20	11	1.8
5	25	9	2.8	120	64	1.9	55	38	1.4
6	108	43	2.5	108	50	2.2	42	21	2.0
7	49	17	2.9	161	73	2.2	35	13	2.7
8	40	16	2.5	112	48	2.3	64	24	2.7
9	9	1	9.0	90	36	2.5	27	10	2.7
10	50	12	4.2	70	31	2.3	50	19	2.6
11	22	6	3.7	22	7	3.1	-	-	-
12	-	-	-	-	-	-	12	4	3.0
13	-	-	-	-	-	-	-	-	-
14	14	5	2.6	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-
<b>Total density</b>	<b>362</b>	<b>134</b>	<b>2.7</b>	<b>869</b>	<b>459</b>	<b>1.8</b>	<b>342</b>	<b>169</b>	<b>2.0</b>

Table B.42.3  
Density by Kism and Household

Number in House- hold	(Embaba)			(Giza)			(Shoubra El Kheima)		
	No. of Persons	No. of Rooms	Density	No. of Persons	No. of Rooms	Density	No. of Persons	No. of Rooms	Density
1	1	1	1.0	-	-	-	2	4	0.5
2	26	39	0.7	12	18	0.6	22	4	5.5
3	97	85	1.0	57	43	1.3	60	56	1.1
4	104	78	1.3	84	49	1.7	112	76	1.5
5	175	104	1.7	135	72	1.9	145	75	1.9
6	204	112	1.8	162	66	2.5	204	111	1.8
7	161	70	2.3	140	56	2.5	231	109	2.1
8	232	91	2.5	136	45	3.0	192	86	2.2
9	72	31	2.3	90	31	2.9	135	55	2.4
10	70	28	2.5	70	23	3.0	40	22	1.8
11	55	28	1.9	22	10	2.2	11	3	3.7
12	24	10	2.4	24	3	8.0	-	-	-
13	-	-	-	13	4	3.3	-	-	-
14	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-
<b>Total density</b>	<b>1211</b>	<b>677</b>	<b>1.8</b>	<b>945</b>	<b>420</b>	<b>2.3</b>	<b>1154</b>	<b>601</b>	<b>1.9</b>

**APPENDIX C**

**CENSUS DATA**

**LIST OF TABLES**

	<u>Page</u>
1. AVERAGE NUMBER OF PERSONS PER ROOM, BY KISM, FROM LOWEST TO HIGHEST	C-1
2. SHIAKHAT AND KISMS COVERING STUDY AREAS: POPULATION, HOUSEHOLDS, PERCENT WITHOUT PURIFIED DRINKING WATER	C-2
3. NUMBER OF HOUSEHOLDS DISTRIBUTED ACCORDING TO SOURCE OF POTABLE WATER	C-5

TABLE C 1

AVERAGE NUMBER OF PERSONS PER ROOM,  
BY KISM, FROM LOWEST TO HIGHEST  
GREATER CAIRO, NOVEMBER 1976 CENSUS

KISM	PERSONS PER ROOM	POPULATION	CUMULATIVE POPULATION
1. Kasr El Nil	0.95	39 342	39 342
2. Nozha	1.01	101 625	140 967
3. Nasr City	1.12	65 347	206 314
4. Heliopolis	1.14	127 131	333 445
5. Dokki	1.25	101 564	435 009
6. Agouza	1.38	146 686	581 695
7. Abdeen	1.45	88 282	669 977
8. Zaher	1.50	104 153	774 130
9. Ezbakia	1.67	59 667	833 797
10. Boulace El Dakrour	1.73	322 480	1 156 277
11. Maadi	1.74	267 056	1 423 333
12. El Ahram	1.75	129 860	1 553 193
13. Shoubra	1.78	128 782	1 681 975
14. Sahel	1.83	438 753	2 120 728
15. Waily	1.84	142 208	2 262 936
16. Matareya	1.86	534 612	2 797 548
17. Sayeda Zeinab	1.87	252 260	3 049 808
18. Masr El Kadima	1.89	273 670	3 323 478
19. Embaba	1.93	323 443	3 646 921
20. Rod El Farag	1.94	272 448	3 919 369
21. Darb El Ahmar	1.94	146 589	4 065 958
22. Giza	1.96	208 621	4 274 579
23. Zeitoun	1.97	267 662	4 542 241
24. Helwan	1.97	282 597	4 824 838
25. Tebin	1.98	33 593	4 858 431
26. Mousky	2.04	58 402	4 916 833
27. Hadayek ElKoba	2.05	314 705	5 231 538
28. Bab El Shareya	2.13	110 247	5 341 785
29. Khalifa	2.19	186 963	5 528 748
30. Gamalia	2.31	166 699	5 695 447
31. Boulac	2.51	177 929	5 873 376
32. 1st Shoubra ElKheima	2.66	233 065	6 106 441
33. Shourabeya	2.91	443 741	6 550 182
34. 2nd Shoubra ElKheima	3.65	160 635	6 710 817
	1 <sup>st</sup> quartile end	1 677 704	1.78 per room
	Mid-point	3 355 409	1.90 per room
	3 <sup>rd</sup> quartile end	5 033 113	2.05 per room

**TABLE C 2**  
**SHIAKHAT AND KISMS COVERING STUDY AREAS:**  
**POPULATION, HOUSEHOLDS, PERCENT WITHOUT PURIFIED DRINKING WATER**  
**PERSONS PER ROOM**  
**(NOVEMBER 1976 CENSUS)**

<u>SHIAKHA</u>	<u>TOTAL POPULATION</u>	<u>TOTAL HOUSEHOLDS</u>	<u>HOUSEHOLDS WITH NO DRINKING WATER TAP IN BUILDING</u>		<u>AVERAGE NUMBER OF PERSONS PER ROOM</u>
			<u>NUMBER</u>	<u>% OF TOTAL</u>	
<u>MATAREYA</u>					
<u>Study Area</u>					
El Ezab	10 2061	21139	11141	53	1.98
El Matareya <sup>a</sup> El Garbiya	69 368	14890	2113	14	1.88
Arab El Hosen	13 683	2702	2643	98	2.28
Ein Shams El Garbiya	23 039	4893	2572	53	1.65
Ezbat El Nakhel	18 404	3371	2045	61	1.69
Arab Abu Tawila	27 296	5543	5213	94	2.15
Tolombat Ein Shams	44 667	9522	5877	62	1.99
El Zahra	47 684	10363	608	6	1.70
Ein Shams El Sharkiya <sup>a</sup>	49 710	10763	2529	23	1.54
Study area <sup>a</sup>	<u>276 834</u>	<u>57533</u>	<u>30099</u>	<u>52</u>	<u>1.92</u>
Matareya Total	<u>534 612</u>	<u>111632</u>	<u>46002</u>	<u>41</u>	<u>1.36</u>
<u>ZEITOUN</u>					
<u>Study Area</u>					
Masaken El Ameria	104 728	20577	8042	39	2.39
Zeitoun Total	<u>267 662</u>	<u>55518</u>	<u>8697</u>	<u>16</u>	<u>1.96</u>

<sup>a</sup> The study areas in these shiakhah were a very small part of the shiakhah so these shiakhah are excluded from the total.

TABLE C 2 (cont.)

SHIAXHAT AND KISMS COVERING STUDY AREAS:  
POPULATION, HOUSEHOLDS, PERCENT WITHOUT PURIFIED DRINKING WATER,  
PERSONS PER ROOM - (CONTD)  
(NOVEMBER 1976 CENSUS)

<u>SHIAXHA</u>	<u>TOTAL POPULATION</u>	<u>TOTAL HOUSEHOLDS</u>	<u>HOUSEHOLDS WITH NO DRINKING WATER TAP IN BUILDING</u>		<u>AVERAGE NUMBER OF PERSONS PER ROOM</u>
			<u>NUMBER</u>	<u>% OF TOTAL</u>	
<u>SAYEDA ZEINAB</u>					
<u>Study Area</u>					
El Aini	16 703	3396	773	23	2.22
Zenhom	28 785	6153	1228	20	2.29
Study Area	45 488	9549	2001	21	2.26
Sayeda Zeinab Total	<u>252 260</u>	<u>53108</u>	<u>4505</u>	<u>8</u>	<u>1.87</u>
<u>MASR EL KADIMA</u>					
<u>Study Area</u>					
Atta El Nabi	24 973	5770	2809	49	2.01
Kom Ghourab	23 585	4893	1191	24	2.31
Eshash El Baroud and El Anwar	25 370	5476	1467	27	2.73
Fom El Khalig and Deir El Nehas	19 139	4008	937	23	1.98
Study Area	93 067	20147	6404	32	2.28
Masr El Kadima Total	<u>273 670</u>	<u>56583</u>	<u>11053</u>	<u>20</u>	<u>1.89</u>
<u>MAADI</u>					
<u>Study Area</u>					
El Essawiya	35 856	7798	5732	74	2.02
El Bassatin El Garbiya	51 485	11013	8528	77	2.11
Ezbet Gibriel	22 585	4998	2025	41	1.64
Study Area	109 926	23809	16285	68	1.98
Maadi Total	<u>267 056</u>	<u>58160</u>	<u>29214</u>	<u>50</u>	<u>1.74</u>

TABLE C 2 (Cont.)

**SHIAKHAT AND KISMS COVERING STUDY AREAS:**  
**POPULATION, HOUSEHOLDS, PERCENT WITHOUT PURIFIED DRINKING WATER**  
**PERSONS PER ROOM (CONTD).**  
**(NOVEMBER 1976 CENSUS)**

SHIAKHA	TOTAL POPULATION	TOTAL HOUSEHOLDS	HOUSEHOLDS WITH NO DRINKING WATER TAP IN BUILDING		AVERAGE NUMBER OF PERSONS PER ROOM
			NUMBER	% OF TOTAL	
<u>HELWAN-TEBIN</u> <sup>a</sup>					
Kafr El Elw	14 374	3049	1654	54	2.58
Hekr El Tebin	5 920	1452	1441	99	2.02
Tebin El Baharia	3 766	859	711	83	1.91
Tebin El Koblia	<u>874</u>	<u>187</u>	<u>186</u>	<u>99</u>	<u>2.05</u>
Study Area	24 934	5547	3992	72	2.33
Helwan	282 597	61021	19884	33	1.97
Tebin	<u>33 593</u>	<u>7299</u>	<u>2642</u>	<u>36</u>	<u>1.98</u>
Helwan-Tebin TOTAL	316 190	68320	22526	33	1.97
<u>EMBABA</u>					
Kism Total	323 443	67 467	33510	50	1.93
Shiakha divisions of study area not available.					
<u>GIZA</u>					
<u>Study Area</u>					
Sakeit Meky	37 600	8101	5003	62	2.27
Gzeret El-Dahab	<u>20 394</u>	<u>4393</u>	<u>3694</u>	<u>84</u>	<u>2.13</u>
Study Area	57 994	12494	8697	70	2.22
Giza Total	<u>208 621</u>	<u>43845</u>	<u>13218</u>	<u>30</u>	<u>1.96</u>
<u>SHOUBRA EL KHEIMA</u> <sup>b</sup>					
1 <sup>st</sup> Kism Shoubra El Kheima <sup>b</sup>	233 065	48334	32514	67	2.66
2 <sup>nd</sup> Kism Shoubra El Kheima <sup>b</sup>	<u>160 635</u>	<u>33265</u>	<u>28111</u>	<u>85</u>	<u>3.65</u>
TOTAL	393 700	81599	60625	74	3.06

<sup>a</sup> The two kisms are treated as one area. Most of the shiakhat in Helwan without water connections to structures are included in a separate "community upgrading" project.

<sup>b</sup> The study area is within the 1<sup>st</sup> kism Shoubra El Kheima.

**TABLE C 3**  
**NUMBER OF HOUSEHOLDS DISTRIBUTED ACCORDING TO SOURCE**  
**OF POTABLE WATER**  
**IN CAIRO GOVERNORATE - BY KISM**  
**NOVEMBER 1976 CENSUS**

KISM	NUMBER OF HOUSEHOLDS	POTABLE WATER RESOURCES		
		SPECIAL FAUCET FOR THE APARTMENT	FAUCET OUTSIDE THE APARTMENT, BUT INSIDE THE BUILDING	NO SPECIAL FAUCET <sup>a</sup> FOR THE APARTMENT OR INSIDE THE BUILDING
Ezbakia	12419	10927	1200	292
Tebin	7299	4564	93	2642
Gamalia	34820	19358	5436	10026
Khalifa	40002	26640	6891	6471
Darb El Ahmar	29438	21217	4345	3876
Zeitoun	53518	39435	5386	8697
Sahel	88477	72855	8255	7367
Sayeda Zeinab	53108	41426	7177	4505
Zaher	21326	20338	761	227
Matareya	111632	54318	11312	46002
Maadi	58160	24141	4805	29214
Mousky	11682	9893	933	856
Nozha	24448	23865	155	428
Wayly	28688	22309	2745	3634
Bab El-Shareya	22403	18583	2021	1799

<sup>a</sup> Including households that obtain potable water from outside the building and households that do not obtain potable water. (Water of pumps considered as non-potable water).

TABLE C 3 (Cont.)  
NUMBER OF HOUSEHOLDS DISTRIBUTED ACCORDING TO SOURCE  
OF POTABLE WATER  
IN CAIRO GOVERNORATE - BY KISM (CONTD.)  
NOVEMBER 1976 CENSUS

KISM	NUMBER OF HOUSEHOLDS	POTABLE WATER RESOURCES		
		SPECIAL FAUCET FOR THE APARTMENT	FAUCET OUTSIDE THE APARTMENT, BUT INSIDE THE BUILDING	NO SPECIAL FAUCET <sup>a</sup> FOR THE APARTMENT OR INSIDE THE BUILDING
Boulac	38502	21068	6554	10880
Hadayek El Koba	65692	51512	7069	7111
Helwan	61021	31863	9274	19884
Rod El-Farag	56059	46044	5129	4886
Shoubra	27597	22025	3136	2436
Abdeen	19744	17288	1637	819
Kasr El-Nil	9880	9618	209	53
Nasr City	13327	12483	145	699
Heliopolis	29411	27620	1305	486
Masr El-Kadima	56588	37871	7664	11053
Shourabeya	90113	59790	9121	21202
<b>TOTAL</b>	<b>1065354</b>	<b>747051</b>	<b>112758</b>	<b>205545</b>

<sup>a</sup> Including households that obtain potable water from outside the building and households that do not obtain potable water. (Water of pumps considered as non-potable water).

**TABLE C 3 (Cont.)**  
**NUMBER OF HOUSEHOLDS DISTRIBUTED ACCORDING TO SOURCE**  
**OF POTABLE WATER**  
**IN GIZA GOVERNORATE (PARTS LOCATED WITHIN THE RANGE OF GREATER CAIRO BOUNDARY)**  
**NOVEMBER 1976 CENSUS**

KISM / MARKAZ	NUMBER OF HOUSEHOLDS	POTABLE WATER RESOURCES		
		SPECIAL FAUCET FOR THE APARTMENT	FAUCET OUTSIDE THE APARTMENT, BUT INSIDE THE BUILDING	NO SPECIAL FAUCET <sup>a</sup> FOR THE APARTMENT OR INSIDE THE BUILDING
Giza	43845	26442	4185	13218
El-Ahram	25662	7583	1446	16633
Dokki	22686	19385	1331	1970
Agouza	31870	22860	1248	7762
Embaba	67461	30639	3312	33510
Bolac El Dakroul	70981	36175	6191	28615
Markaz El-Giza	17346	1150	1445	14751
Markaz El-Badrashen	38287	6075	2428	29784
Markaz El-Saff	5861	130	138	5593
Markaz Embaba	71102	10140	4609	56353
<b>TOTAL</b>	<b>395101</b>	<b>160579</b>	<b>26333</b>	<b>208189</b>

<sup>a</sup> Including households that obtain potable water from outside the building and households that do not obtain potable water. (Water of pumps considered as non-potable water).

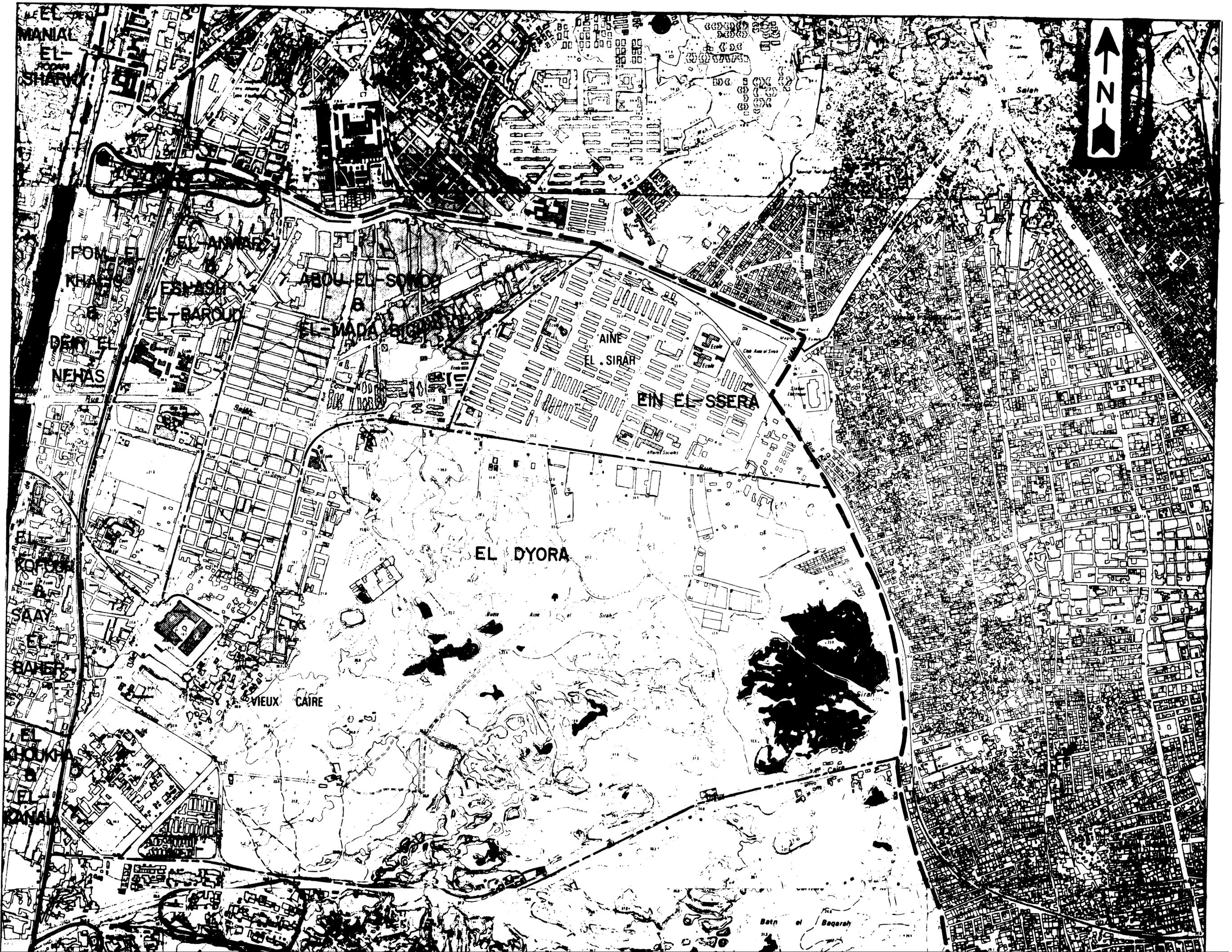
TABLE C 3 (Concl.)  
NUMBER OF HOUSEHOLDS DISTRIBUTED ACCORDING TO SOURCE  
OF POTABLE WATER  
IN KALYOUBIA GOVERNORATE (PARTS LOCATED WITHIN THE RANGE OF GREATER CAIRO BOUNDARY)  
NOVEMBER 1976 CENSUS

KISM / MARKAZ	NUMBER OF HOUSEHOLDS	POTABLE WATER RESOURCES		
		SPECIAL FAUCET FOR THE APARTMENT	FAUCET OUTSIDE THE APARTMENT, BUT INSIDE THE BUILDING	NO SPECIAL FAUCET <sup>a</sup> FOR THE APARTMENT OR INSIDE THE BUILDING
Kism (1) Shubra El-Kheima	48334	13406	2414	32514
Kism (2) Shubra El-Kheima	33264	3936	1217	28111
Markaz El-Khanka	26950	4186	620	22144
Markaz El-Kanater El-Khayreya	27671	4216	686	22769
Markaz Sheben El-Kanater	11765	2148	487	9130
Markaz Kalyoub	36261	4551	1246	30464
<b>TOTAL</b>	<b>184245</b>	<b>32443</b>	<b>6670</b>	<b>145132</b>

<sup>a</sup> Including households that obtain potable water from outside the building and households that do not obtain potable water. (Water of pumps considered as non-potable water).







MANIA  
EL SHARI

FOM  
KHA

EL BAROU

ABOU EL SO

MADA BICH

AINE

EL SIRAH

EN EL SSEFA

EL DYORA

VIEUX CAIRE

SAAY

BAHER

EL

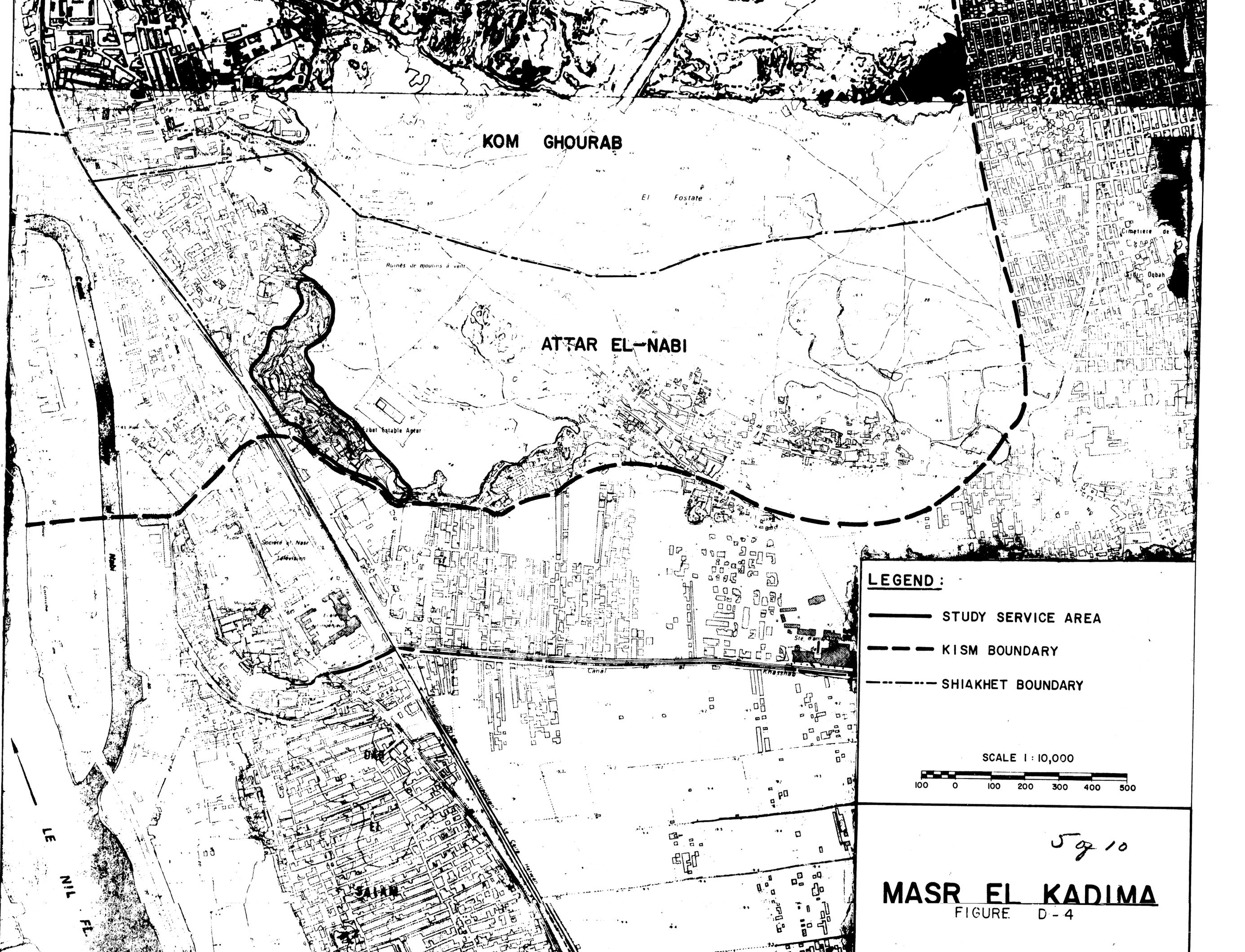
EL

EL

EL

Salah

Bath of Beqarah



KOM GHOURAB

El Fostate

ATTAR EL-NABI

Abel Estable Apter

**LEGEND :**

- STUDY SERVICE AREA
- - - - KISM BOUNDARY
- - - - SHIAKHET BOUNDARY

SCALE 1 : 10,000



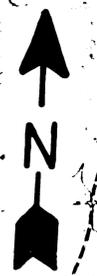
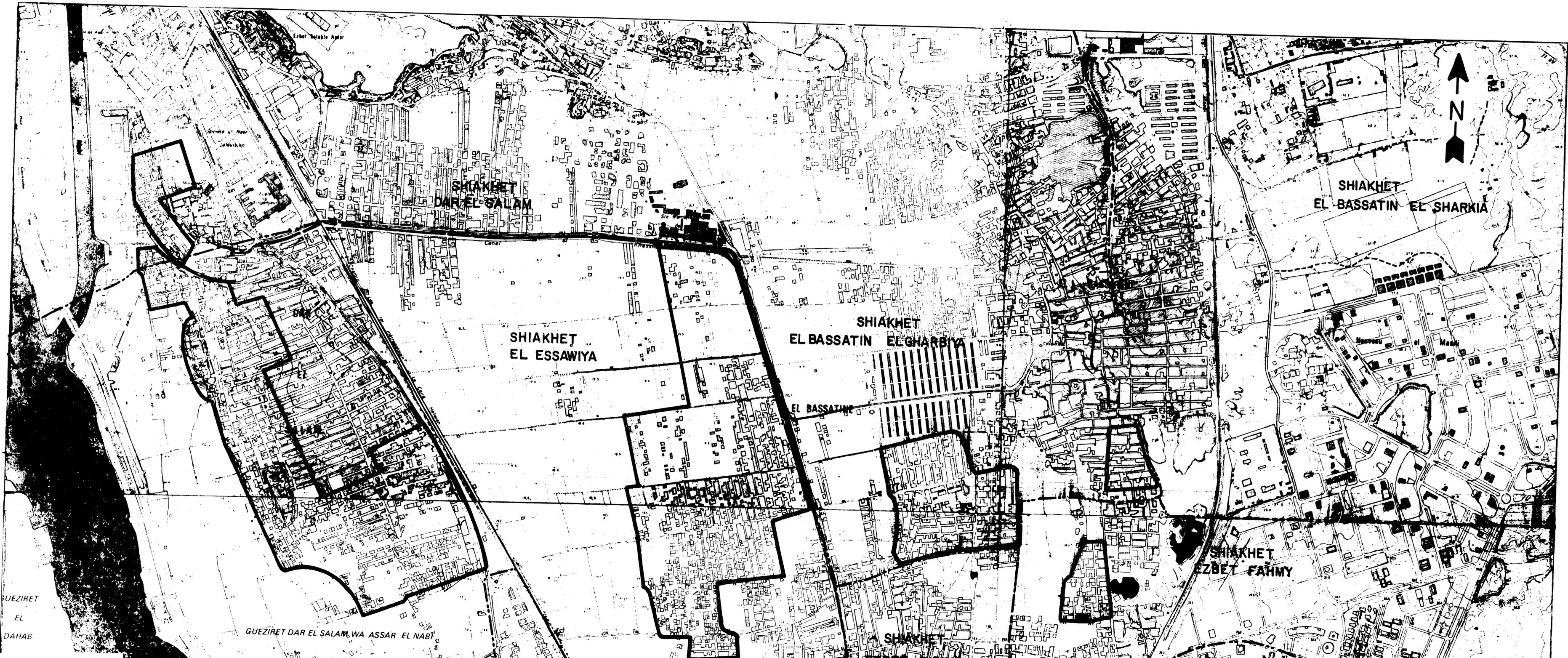
5 of 10

**MASR EL KADIMA**

FIGURE D - 4

LE  
NIL  
FL.

ES - PARSONS / ECG



SHIAKHET  
DAR EL SALAM

SHIAKHET  
EL BASSATIN EL SHARKIA

SHIAKHET  
EL ESSAWIYA

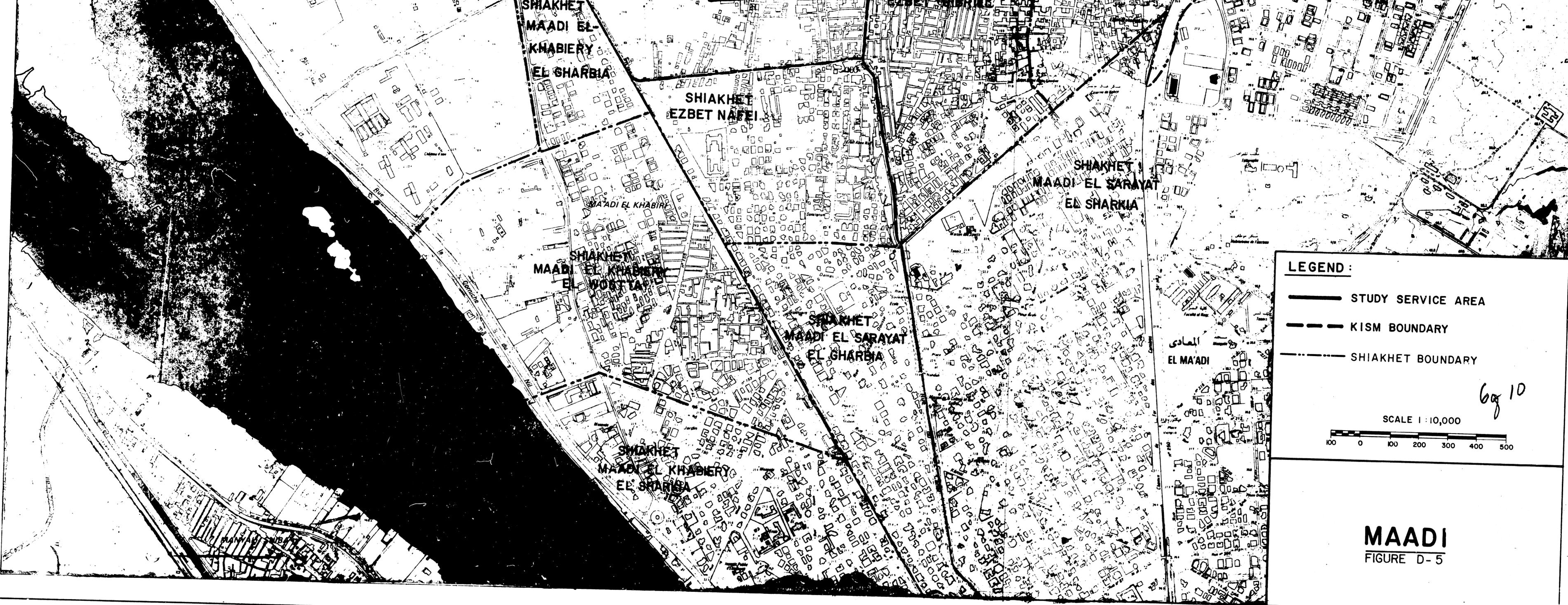
SHIAKHET  
EL BASSATIN EL GHARBIYA

SHIAKHET  
EL BASSATIN EL FAHMY

GUEZIRET  
EL  
DAHAB

GUEZIRET DAR EL SALAM, WA ASSAR EL NAB

SHIAKHET



**LEGEND :**

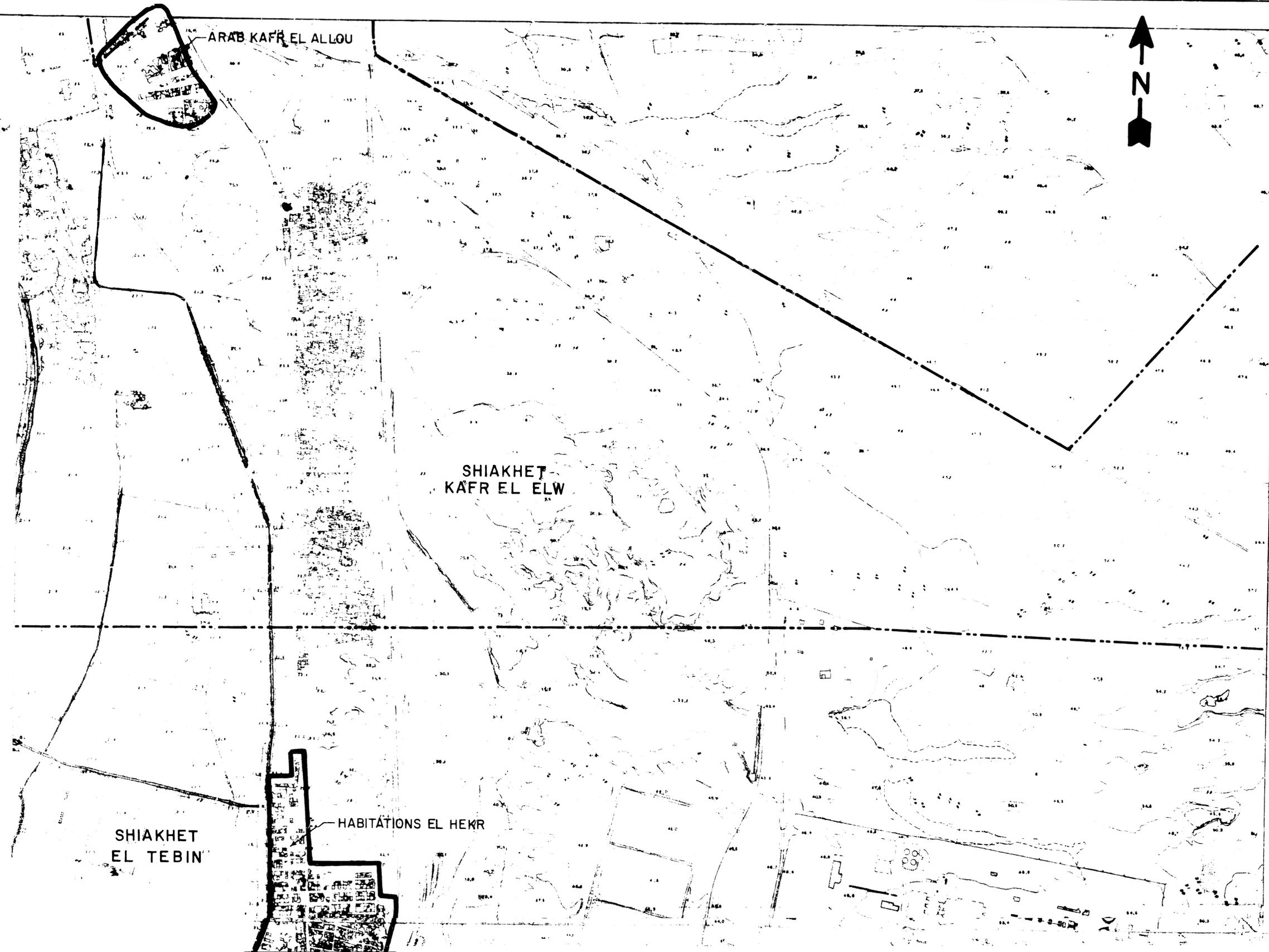
- STUDY SERVICE AREA
- - - - KISM BOUNDARY
- ..... SHIAKHET BOUNDARY

SCALE 1 : 10,000



**MAADI**  
FIGURE D-5

*6 of 10*



ARAB KAFR EL ALLOU

SHIAKHET  
KAFR EL ELW

SHIAKHET  
EL TEBIN

HABITATIONS EL HEKR





**LEGEND:**

- STUDY SERVICE AREA
- - - KISM BOUNDARY
- · · SHIAKHET BOUNDARY

7 of 10

SCALE 1:10,000



**HELWAN & EL TEBIN**

FIGURE D-6



WARAQ EL HADAR

NIL  
FLEUVE

ورق الحداد  
WARAQ EL HADAR

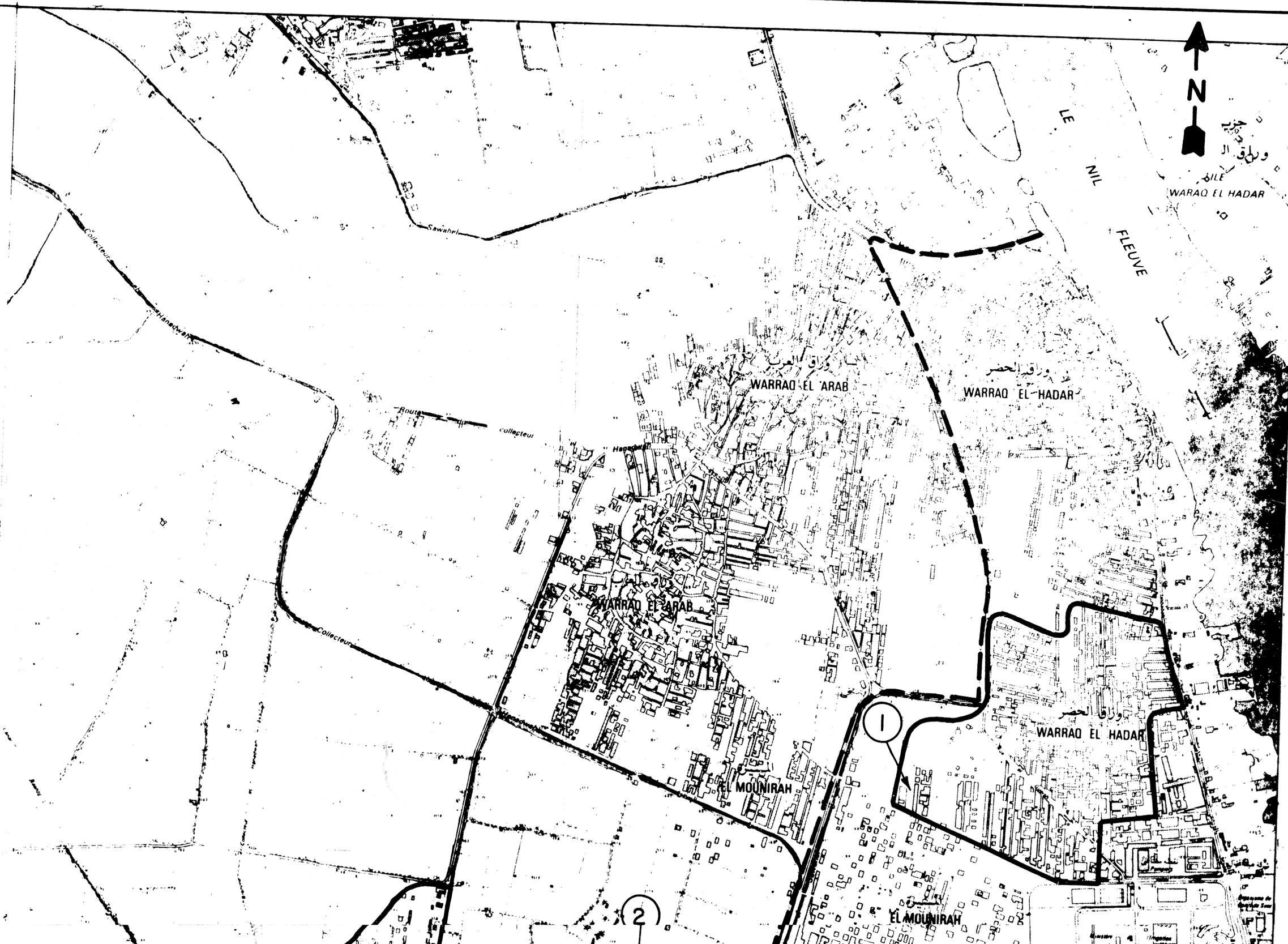
ورق العرب  
WARAQ EL ARAB

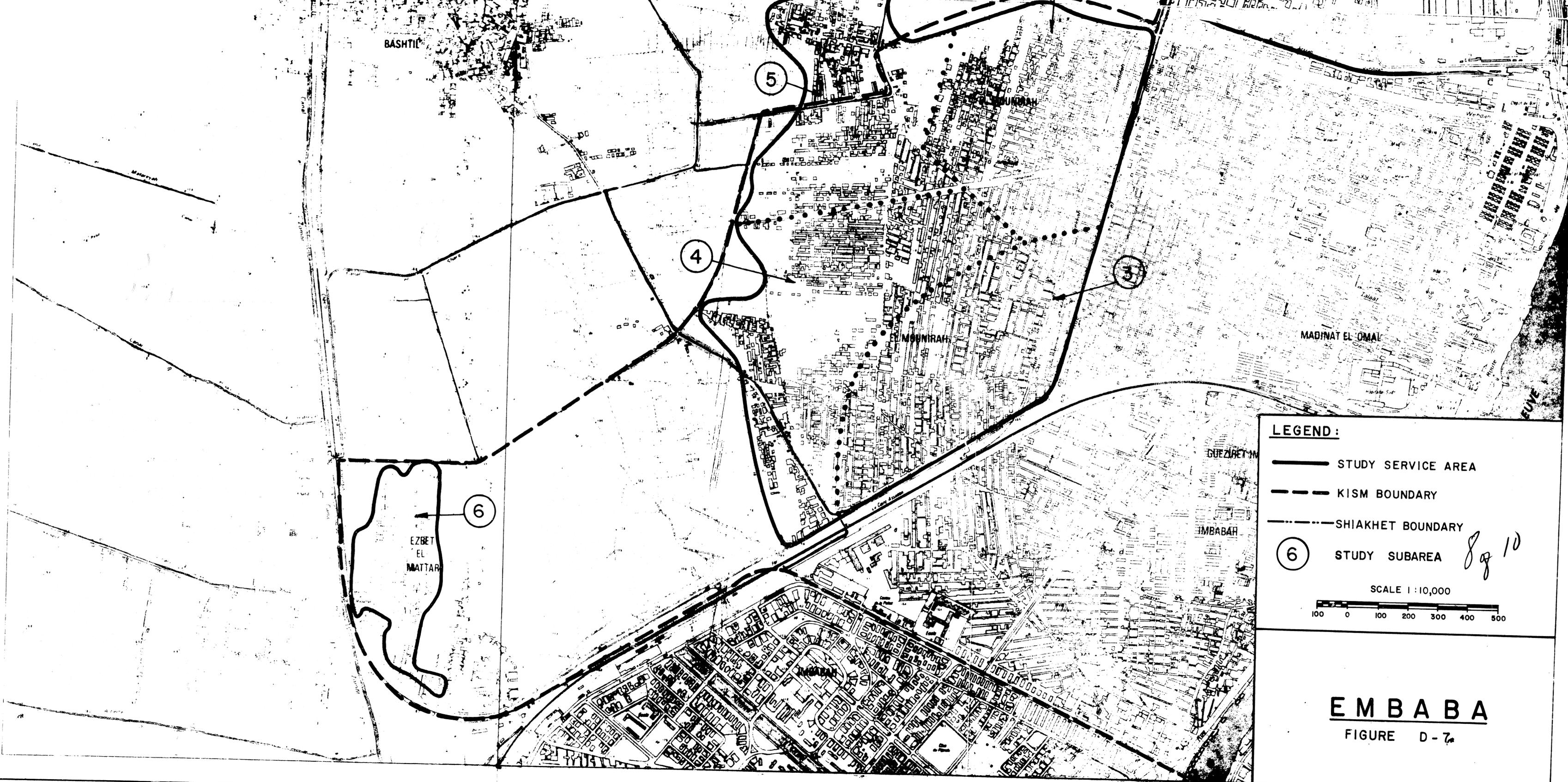
WARAQ EL ARAB

ورق الحداد  
WARAQ EL HADAR

EL MOUNIRAH

EL MOUNIRAH





**LEGEND:**

-  STUDY SERVICE AREA
-  KISM BOUNDARY
-  SHIAKHET BOUNDARY
-  STUDY SUBAREA *8 of 10*

SCALE 1:10,000



**EMBABA**  
 FIGURE D-7





الطابية

العمرانية

العمرانية الشرقية

جزيرة القمصان

LE DE

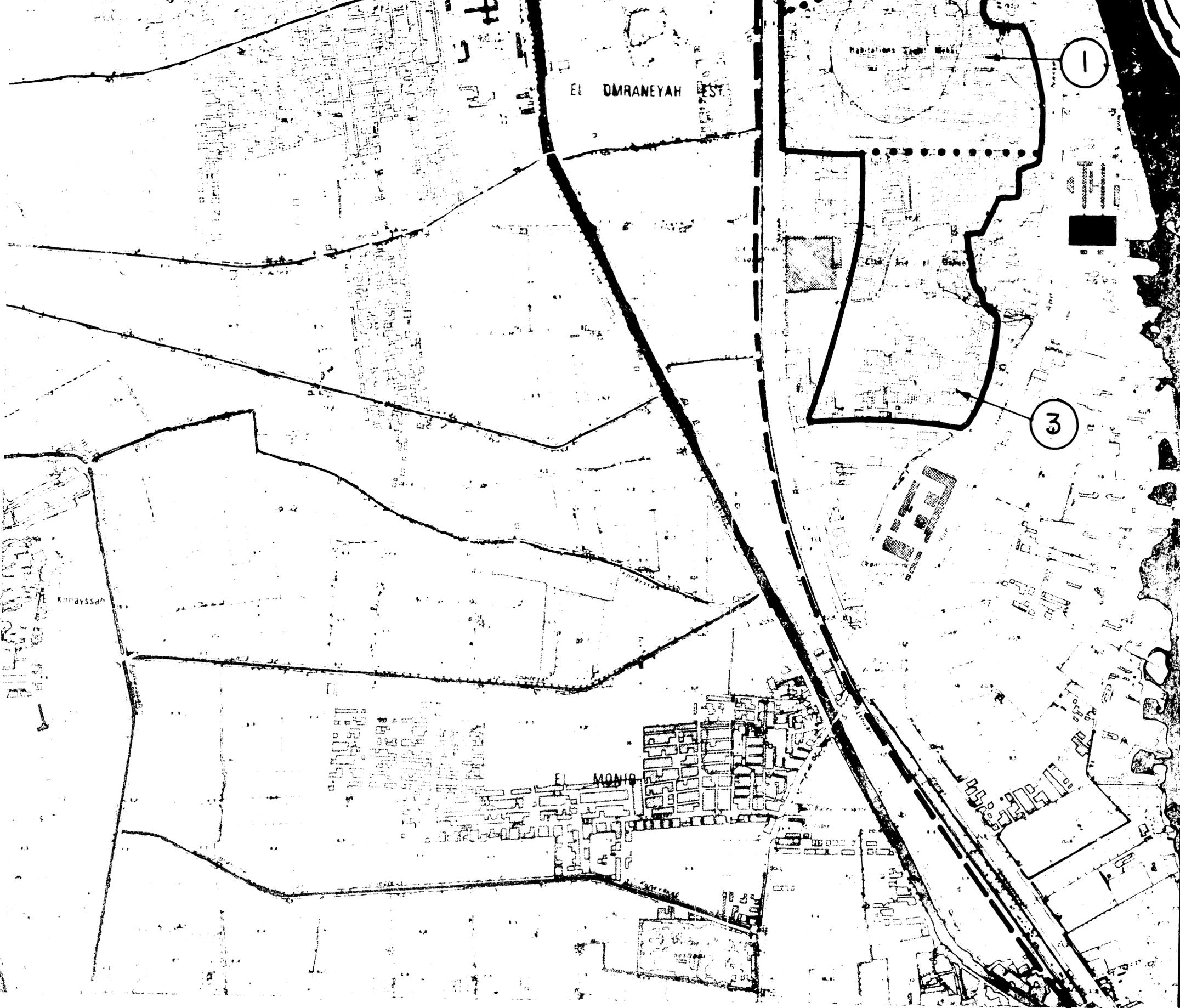
QORSA

2

4



EL AMRANIYA BAY



**LEGEND:**

- STUDY SERVICE AREA
- KISM BOUNDARY
- SHIAKHET BOUNDARY
- STUDY SUBAREA

SCALE 1:10,000

*9 of 10*

**GIZA**  
FIGURE D-8



عزبة ابراهيم بك  
Ezbe Ibrahim Bey



4

2

3

1

5

7

8

BISAME

EZBEI

OSMAN

Menshaya

WARAQ EL 'ARAB

Station des Eaux Shoubrah el Khaimah

El Bahareyah

Menshaya el Harayeh

Terre Agricole

ILE

STATION

Usine de Tissage

Coiffure

WARAQ EL 'ARAB

ILE  
WARAQ  
EL 'ARAB

NIL  
FLEUVE

6

8

SHOUBRÄ EL BALADE

Shoubra el Balade

Habitations

d'Ismailiah

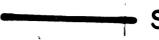
d'Ismailiah

Ezbet  
Wafiba  
Moultah

EZBET

MOHAMED EL QOSSEIR

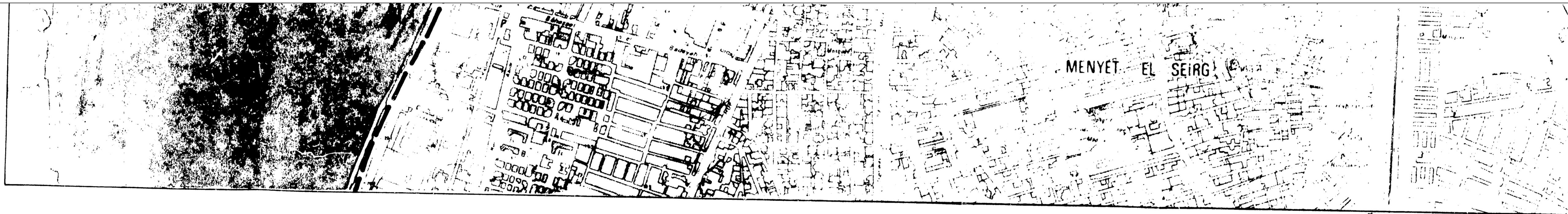
**LEGEND :**

-  STUDY SERVICE AREA
-  KISM BOUNDARY
-  SHIAKHET BOUNDARY
-  STUDY SUBAREA

SCALE 1 : 10,000



10010



10910

# SHOUBRA EL KHEIMA

FIGURE D-9

ES - PARSONS / ECG