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SPATIAL PATTERNS OF POPULATION DYNAMICS  
IN EGYPT, 1947-1970

VOLUME I

by

Wassim A.E.-H. M. Abd El-Aal, B.A., M.A.  
(Graduate Society)

A thesis submitted to  
the Faculty of Social Sciences  
for the degree of Doctor of Philosophy

University of Durham

April 1977

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To Professor J. I. Clarke,  
with grateful thanks.

ABSTRACT

The objective of this study is to analyse spatial patterns of population dynamics in Egypt during the period 1947-70. It is hoped that this may assist in the understanding of the processes underlying demographic change in Egypt and so provide a firmer foundation for future national planning.

The main body of the thesis begins in Chapter Two with an overview of Egypt's population growth, with special emphasis on the regional differentials. In the following chapters the analysis of population change becomes more detailed. In Chapter Three the first component of population growth, namely fertility, has been dealt with. In Chapter Four, mortality, the second component, has been discussed, while Chapter Five deals with age and sex structure.

Chapter Six examines internal migration, which is extremely important because it concerns the ever-growing concentration of people in Egypt's largest cities, especially Cairo, a concentration which gives rise to some of Egypt's most serious social and economic problems. This chapter leads into a more specific discussion of the uneven population distribution within the country. Chapter Eight deals with urbanization showing that Egypt suffers from over-urbanization, as the rural population continues to flood into urban centres. The concluding chapter examines government policy regarding population change and development.

Volume II contains all the basic population data relevant to the thesis.

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ABBREVIATIONS

A.R.E.	Arab Republic of Egypt
C.A.P.M.S.	Central Agency for Public Mobilisation and Statistics
U.A.R.	United Arab Republic
U.N.	United Nations

## CHAPTER ONE

### INTRODUCTION

#### The Aim and Significance of the Study

The general objective of this study is to undertake a demographic and geographic analysis of spatial patterns of population dynamics in Egypt during the period 1947-70.

In specific terms the aim is first of all to fill a gap in the literature. An examination of the bibliography reveals that little of significance has been published by geographers on the population of Egypt during the period covered by this study. This being so, it seems important that a study should be attempted of this period, perhaps to provide a basis for more detailed study in the future.

In the second place, the aim is to present in an organised and intelligible fashion the available data for the period 1947-70, with the addition of information from earlier censuses (e.g. 1927, 1937), and a certain quantity of new data. It should be noted that all governorate data refer to governorate areas as defined for the census taken in 1966.

It is intended, thirdly, to identify and discuss the factors affecting population growth in Egypt, to describe the changes and general trends in population growth in the governorates, and to analyse the role of internal migration in the growth of the proportion of population

living in urban centres, with especial reference to migration to Cairo.

The uneven population distribution in the governorates will also be described. The trends and pattern of urbanization in Egypt will be discussed and the geographical distribution of the cities and the factors affecting this distribution analysed. Finally, the pattern of socio-economic development will be considered in relation to population change.

### Areal Units

Egypt's habitable area is divided administratively into twenty-five governorates, which greatly influence geographical analysis as these are the only units for which the bulk of population data are available. Four of these are sparsely populated border areas (Red Sea, New Valley, Matruh and Sinai), and four are urban governorates, all in Lower Egypt (Cairo, Alexandria, Port Said and Suez). Of the remaining governorates nine are in Lower Egypt and eight in Upper Egypt. (See Figures 1.1, 1.2 and 1.3).

Population size is markedly uneven as between the governorates, thus reducing their demographic comparability. Cairo governorate was the largest with about 5 million inhabitants in 1970, Red Sea governorate the smallest with a population of 48,900. Six of the governorates (Cairo, Alexandria, Daqahliya, Sharqiya, Gharbiya and Beheira) had a population of more than two million in

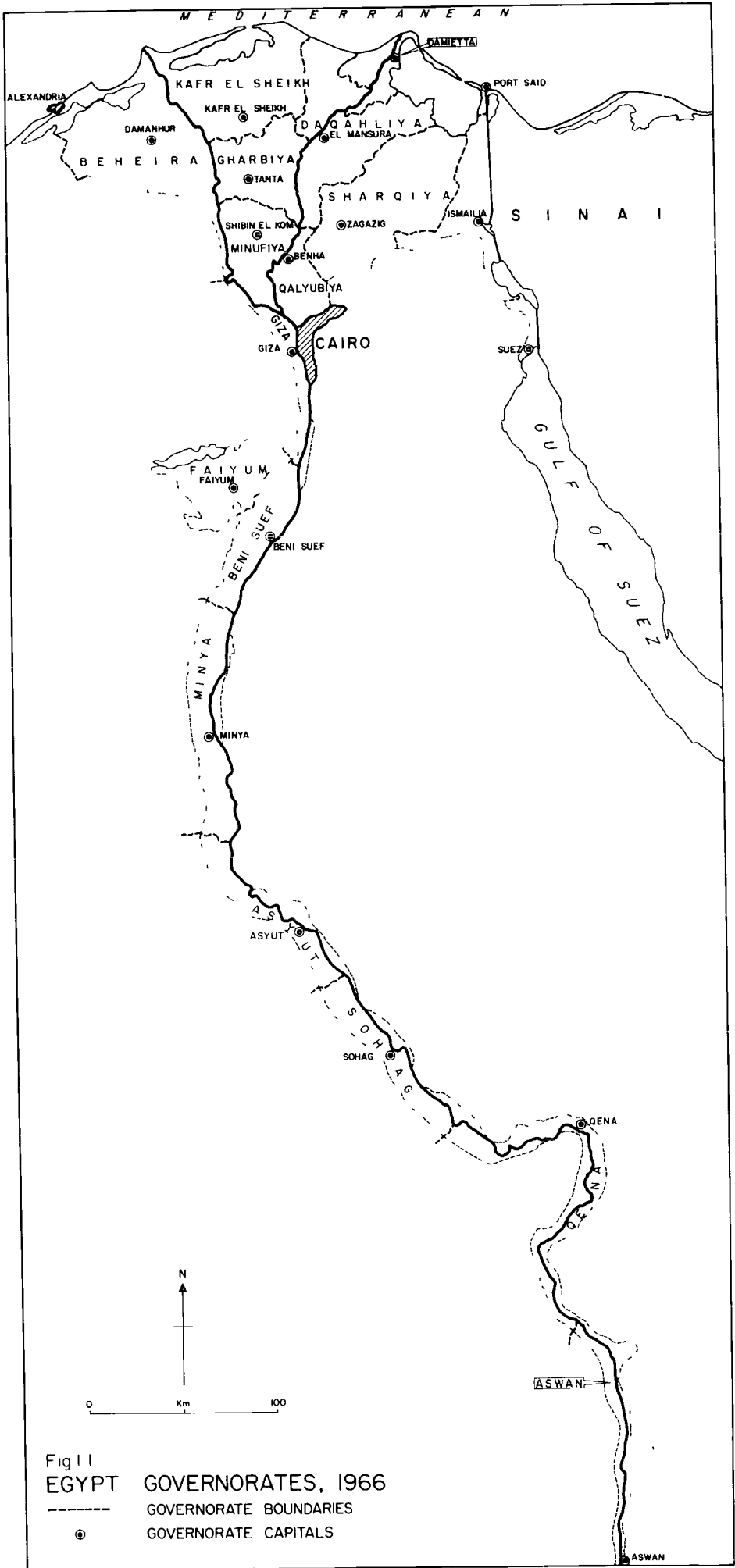
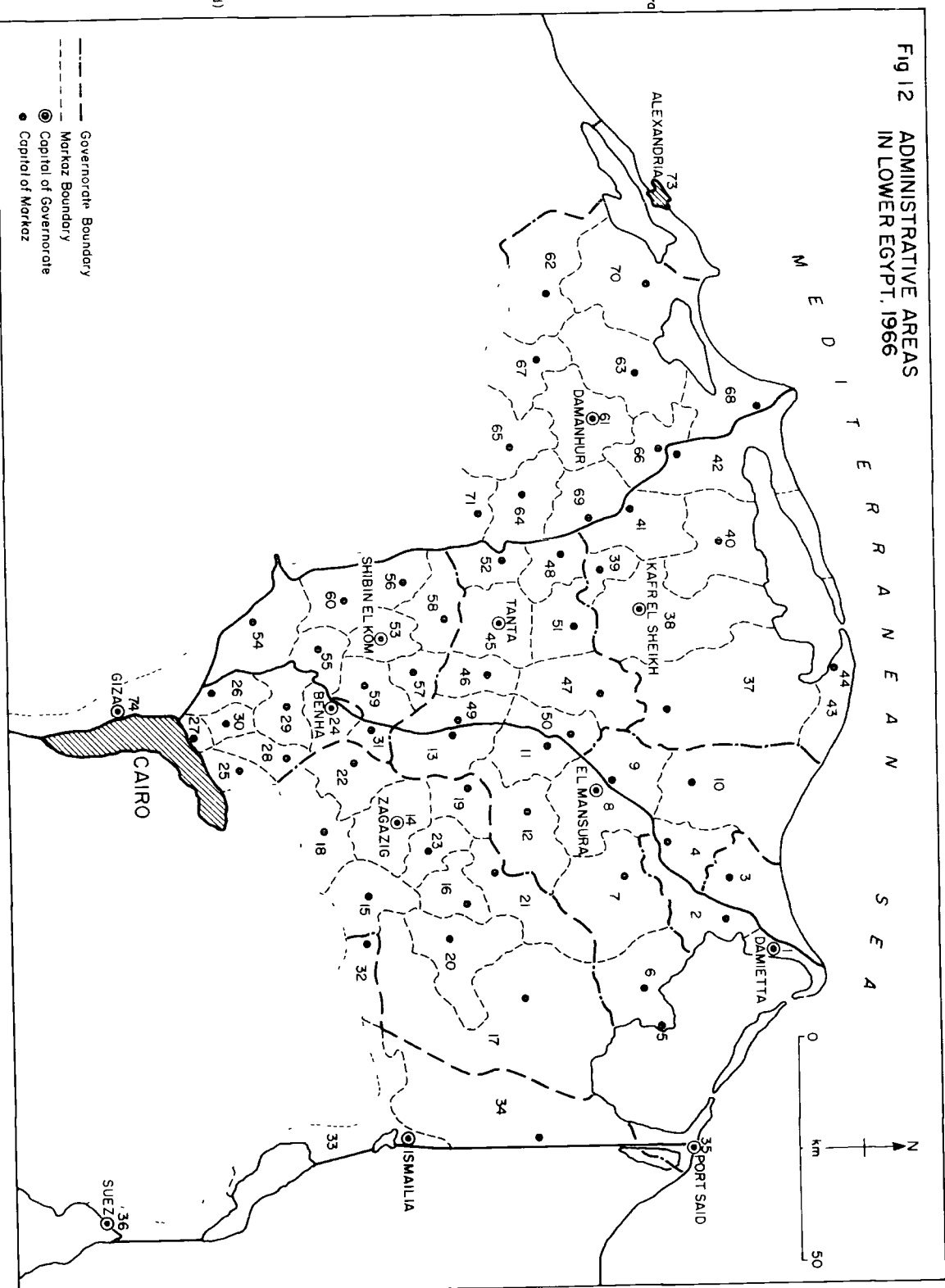


Fig 12 ADMINISTRATIVE AREAS  
IN LOWER EGYPT, 1966



- |    |                        |    |                      |
|----|------------------------|----|----------------------|
| 1  | Damietta               | 38 | Kafr el Sheikh       |
| 2  | Forskur                | 39 | Qallin               |
| 3  | Kafr Sa d              | 40 | Sidi Solim           |
| 4  | Shirbin                | 41 | Disuq                |
| 5  | El Matariya            | 42 | Fuwa                 |
| 6  | El Manzala             | 43 | Burullus             |
| 7  | Dikrnis                | 44 | Bohim                |
| 8  | El Mansura             | 45 | Tanta                |
| 9  | Talkha                 | 46 | El Sanho             |
| 10 | Bilqas                 | 47 | El Mahallie El Kubra |
| 11 | Agq                    | 48 | Basyun               |
| 12 | El Simbillowein        | 49 | Zifta                |
| 13 | Mit ghamr              | 50 | Samonnud             |
| 14 | Zagazig                | 51 | Qutur                |
| 15 | Abu Hammod             | 52 | Kafr el Zayot        |
| 16 | Abu Kibir              | 53 | Shibin el Kom        |
| 17 | El Husseinyo           | 54 | Ashmun               |
| 18 | Bilbeis                | 55 | El Bogur             |
| 19 | Diya rb Nigm           | 56 | El Shuhada           |
| 20 | Foqus                  | 57 | Birket el Sab*       |
| 21 | Kafr Saqr              | 58 | Tala                 |
| 22 | Minyo el Qamh          | 59 | Quweisno             |
| 23 | Hihya                  | 60 | Minuf                |
| 24 | Benha                  | 61 | Damonhur             |
| 25 | El Khanka              | 62 | Abu el Matamir       |
| 26 | El Qanahir El Kharriyo | 63 | Abu Hummus           |
| 27 | Shubra el Kherna       | 64 | Itoy el Borud        |
| 28 | Shibin el Qanahir      | 65 | El Dilingi           |
| 29 | Tukh                   | 66 | El Mahmudiya         |
| 30 | Qalyub                 | 67 | Hosh Isa             |
| 31 | Kafr Shukur            | 68 | Rosetta (Roshid)     |
| 32 | El Tell El Kebir       | 69 | Shubrakhit           |
| 33 | Ismailie               | 70 | Kafr el Dauwar       |
| 34 | El Qanlara Gharb       | 71 | Kom Homada           |
| 35 | Port Said              | 72 | Cairo                |
| 36 | Suez                   | 73 | Alexandria           |
| 37 | Bygia                  | 74 | Gizo                 |

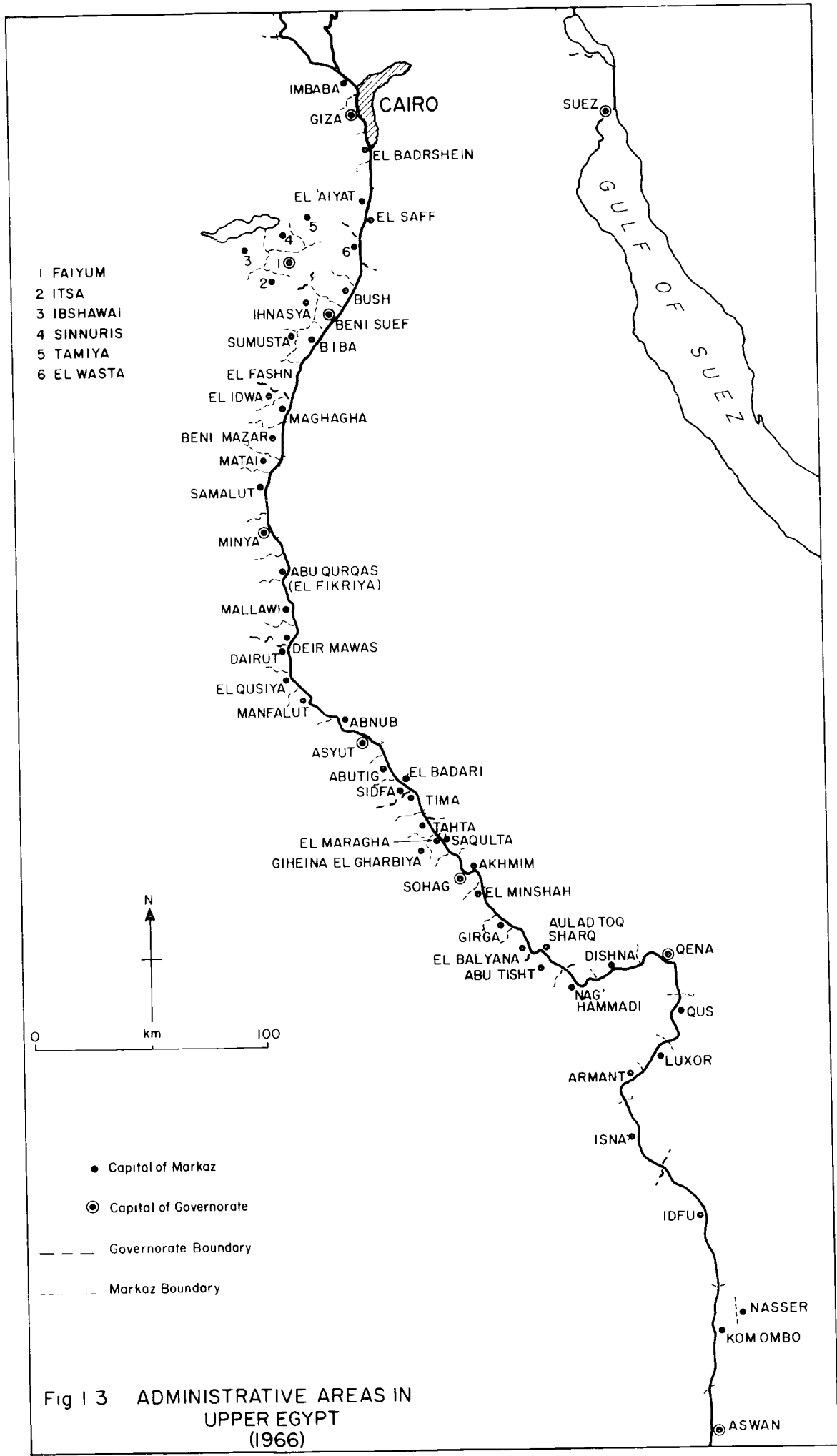


Fig 1 3 ADMINISTRATIVE AREAS IN UPPER EGYPT (1966)

1970; five governorates (Minufiya, Giza, Minya, Sohag and Qena) a population between 1,500,000 and 2 million; four governorates (Qalyubiya, Kafr el Sheikh, Faiyum and Asyut) a population between one million and 1,500,000. There were two governorates (Beni Suef and Aswan) with a population level between 500,000 and 1,000,000. Finally, there were eight governorates (Port Said, Ismailia, Suez, Damietta, Red Sea, New Valley, Matruh and Sinai) with less than 500,000 inhabitants. Obviously these differences in population size influence ratios and rates, which are more irregular and fluctuating among small populations than large populations.

In addition to differences in population sizes of governorates, they also exhibit great differences in areal size. Cairo governorate has the smallest inhabited area of all (214.2 square kilometres or 0.6 per cent of the total inhabited area in Egypt which is 35,580 square kilometres), Sharqiya governorate the largest inhabited area, with about 4,702 square kilometres or 13.2 per cent of the total inhabited area. Three of the governorates (Cairo, Alexandria and Suez) have inhabited areas each of less than 1 per cent of the total inhabited area. Six of the governorates (Port Said, Ismailia, Damietta, Qalyubiya, Giza and Aswan) have inhabited areas each of between 1 per cent and 3 per cent of the total inhabited area. Seven (Gharbiya, Minufiya, Beni Suef, Faiyum, Asyut, Sohag and Qena) have inhabited areas each of between 3 per cent and 6 per cent of the total. Minya

governorate has 6.4 per cent of the total inhabited area. Finally, there are four governorates (Daqahliya, Sharqiya, Kafr el Sheikh and Beheira) with more than 9 per cent each of the total inhabited area.

In 1970, the four urban governorates which accounted for 3.4 per cent of the total inhabited area in Egypt supported 22.87 per cent of the total population. By contrast, 42.43 per cent of the population lived in the nine governorates of Lower Egypt which between them had 62.2 per cent of the total inhabited area; and 33.58 per cent of the population lived in the eight governorates of Upper Egypt which had 33.4 per cent of the total inhabited area. The frontier governorates, with about 1 per cent of the total inhabited area, supported only 1.12 per cent of the population. Any consideration of the overall pattern of population in Egypt must take careful account of such pronounced irregularities as these.

### Egyptian Censuses and Vital Registration Data

#### A. Censuses

It seems necessary to assess the accuracy of the various Egyptian censuses which are our major source of demographic information. Each census must be examined and assessed in turn.

##### 1. The 1882 Census

The first modern census was taken in Egypt on the night of 3rd-4th May, 1882. This was the first time in the country's history that an enumeration of every

citizen was attempted on a single day. However, the widespread illiteracy of the population at this time, and the political chaos and disorder prevailing in 1882 produced, so it seems, a marked underenumeration in the returns. Thus Lewis<sup>(1)</sup> notes: "The time could hardly have been worse chosen for far-reaching operations like the census, indeed it would have been surprising if, in the midst of all this unrest, anything approaching really reliable figures would have been obtained". Kiser<sup>(2)</sup> estimated that this census undercounted the actual population by as much as 11 per cent. Fresco<sup>(3)</sup> has listed some of the administrative and organisational shortcomings of the 1882 census, shortcomings which seriously affect the reliability of its figures:

- (a) The absence of any system of numbering houses.
- (b) Financial difficulties, and the suppression in 1883 of the Central Bureau of Statistics for the second time, the first time being in 1878.
- (c) The enforced cessation of census operations in August 1882, as a consequence of the political turmoil of the time.
- (d) The change of census management when work was resumed in January 1883.
- (e) The fact that the 1882 census was the country's first experience of such an inquiry, the public resenting it mainly for fear of conscription, and as a consequence concealing a good deal of information, especially as regards sex and age.

It would seem to be quite impossible now to revise upwards towards a true figure the results of the 1882 census; the 1917 census publication gives the following depressing remarks: "Census taking in Egypt has always been characterised by a complete absence of continuity in its preparation and method. Owing to the absence until 1905 of a general statistical office, or a proper registrar, familiar with the problems of population, a census office had on each occasion been constituted de novo. On the termination of the work, the office was wound up, the staff dispersed and the documents mostly destroyed, so that those in charge of the next census were altogether deprived of the benefit of the verbal or written tradition of previous experience."<sup>(4)</sup> These comments are equally applicable to the 1897 and 1907 censuses of which mention will now be made.

## 2. The 1897 Census

The second proper census was taken on the 3rd May, 1897. The conditions under which this census was taken were far more favourable than for the preceding one. However, the recorded increase of about three million in the period 1882 to 1897 was largely fictitious, as the informed opinion, cited below, indicates:<sup>(5)</sup>

"This very large increase is probably more apparent than real, for it is impossible, after a consideration of all the facts, to avoid the conclusion that the enumeration of 1882, which took place in the midst of the Arabi rebellion was, in parts of the country, at any rate, defective".

With regard to the accuracy of the 1897 census the position remains unclear. Cleland<sup>(6)</sup> has emphasised that when comparisons are made, "it needs to be kept in mind that all of the censuses - up to 1927 - are perhaps undercounts to a certain extent, with progressively greater accuracy in the later years". Nevertheless, with the original documents presumably now no longer surviving, it is difficult to assess in absolute or percentage terms the actual extent of underenumeration in the 1897 census.

### 3. The 1907 Census

At this time the country was developing rapidly and its inhabitants were becoming more familiar with such administrative undertakings as the taking of censuses. However, one contemporary writer,<sup>(7)</sup> at least, felt that the 1907 census gave erroneous figures for the populations of Cairo and Alexandria. According to calculations by Eid the population of the former should have been 800,000 (rather than 570,000) and of the latter 416,000 (rather than 315,000).<sup>(8)</sup> If this was the case for the two largest agglomerations in the country, it would seem to follow that a marked undercount of the population in general occurred in 1907.

### 4. The 1917 Census

The year 1917 was hardly appropriate for a census of the population of Egypt, because of the First World War. The country, while not being one of the battlegrounds of the war, had been taking an active part in it. So-called

recruits for the labour corps in Palestine and elsewhere were being sought all over the country. A census taken under such circumstances would not have been popular, and it need cause little surprise that many inaccurate statements were made to the enumerators. For there was a strong suspicion that the census was being taken for military purposes.

Yet many improvements were introduced into the census-taking machinery. The central administrative authority undertaking it was re-organized and equipped with all the latest machinery for the purpose. All calculations and tabulations were performed by machine, which reduced considerably the degree of human error. Greater accuracy was thus achieved. A few more questions were added to the census schedule so that light might be shed on certain important topics.

Among the outstanding improvements in the 1917 census was the introduction of questions relating to the nature of domiciles and the number of rooms in occupation. Unfortunately this important item disappeared from the schedule of the 1927 census. Thus we were deprived - at least for ten years - of valuable data bearing on the question of overcrowding and housing conditions in the country at large. The same inquiry, however, was re-introduced in a modified form in the 1937 census schedule.

ANIS<sup>(9)</sup> noted that: "The 1917 census is considered as the first accurate population census". Possibly

it was more accurate than the preceding three censuses, but the evidence points to an underenumeration once again.

#### 5. The 1927 Census

The 1927 census was taken on the same lines as that of 1917. Yet many improvements were introduced, made possible by the experience gained during the intervening period. But the most important contribution to the growth of the body of census data made by the 1927 census was in its introduction of a question concerning the nature of the trade or industrial occupation of the individual concerned, if any.

One group of writers<sup>(10)</sup> have felt "some confidence in the census of 1927". Nour<sup>(11)</sup> is of a similar opinion. One piece of quantitative evidence is cited by Farrag,<sup>(12)</sup> who quoted the opinion that the census authorities judged that there was a 1 per cent underenumeration in the 1927 census.

#### 6. The 1937 Census

The 1937 census introduced many new and significant questions. It re-introduced the questions concerning the nature of domiciles. Five questions were added: habitual residence, the number of persons dependent on the gainfully occupied members of the household, the length and cause of unemployment, deformity, and finally the date and nature of educational qualifications.

Issawi<sup>(13)</sup> asserted that the 1937 census was an

underenumeration, by pointing to what he thought was an 'artificial' slow-down in the rate of growth in Egypt's population in the period 1927-37. Certainly, it is generally assumed, but without detailed empirical proof, that the 1937 census continued the pattern of previous censuses by undercounting the actual population of Egypt.

#### 7. The 1947 Census

There has been a great deal of detailed analysis of the 1947 Egyptian census by various researchers, and it is generally agreed that this population count was an over-enumeration. The 1947 census was particularly influenced by the recent promulgation of two government measures, to introduce rationing and a more stringent application of the taxation laws. The first measure is thought to have encouraged an exaggeration of the census figures. People tended to exaggerate their numbers under the wrong impression that the data collected was for rationing and not for census purposes. Issawi<sup>(14)</sup> calls attention, also, to an abnormal increase in the recorded population in 1947 of Alexandria, and even more so of Cairo: "It is probable that many inhabitants of these cities filled their forms wrongly in the hope of getting extra ration cards."

The fear on the part of some of more stringent taxation might have had a downward effect on the numbers of people counted, but this effect can hardly have been considerable since the vast majority of the population with small incomes would not have been threatened.

Attempts have been made to revise the 1947 figures downwards to what appears to be a more accurate representation of the actual level of the population in 1947. Specifically, El-Badry<sup>(15)</sup> makes an adjustment to the figures for the male and, in particular, the female components of the population. The latter he felt was the most affected by the overenumeration.<sup>(16)</sup> El-Badry adjusts for over-reporting by assuming a continuation of the 1907-37 growth rates, namely 0.01165 for males and 0.01186 for females, which gave a 1947 population of 8,951,000 males and 8,956,000 females, i.e. an over-report amounting to one million, or 5.6 per cent.<sup>(17)</sup>

However, Hansen and Marzouk<sup>(18)</sup> argue that the growth rates for 1937-47 and 1947-60 should be 1.2 per cent (and not 1.8 per cent) and 2.9 per cent (and not 2.4 per cent) respectively. Thus, there is a note of disagreement with El-Badry's correction.

Partial support for Hansen and Marzouk's argument for a higher population level in 1947 than El-Badry would allow is provided by the revisions made by Schultz.<sup>(19)</sup> Basing his arguments on the evidence of three quasi-stable population estimates and estimates of trends in vital rates, Schultz suggests that the 1947 census adjustments proposed by El-Badry "may be somewhat too large."<sup>(20)</sup> Schultz reduces the 1947 census totals by 3 per cent rather than 5.6 per cent.<sup>(21)</sup> He further supports his argument by estimating vital rates with the use of a multivariate regression model. The findings thus made confirm that "El-Badry's

adjustment for 1947 overcount may have been excessive".<sup>(22)</sup>

However, other writers differ about revisions and suggest their own. For example, Besancon<sup>(23)</sup> felt that the population should be revised downwards from 19,021,840 to 18,424,000 (i.e. by 597,840), although he admitted that it still left the figure in excess of the probable real figure. Issawi<sup>(24)</sup> argued that the population was very unlikely to be below 18,000,000. By contrast, Rijad<sup>(25)</sup> thought that the 1947 census overestimated by 5 per cent, while Ducruet<sup>(26)</sup> stated that the population was exaggerated by 600,000.

In direct opposition to all these downward adjustments, Mead<sup>(27)</sup> has asserted that "The problem with accepting the downward revision of the 1947 census is that it would imply a growth rate in the following period (1947-60) of over 2.9 per cent per annum, which seems far out of line with the vital statistics of the period". However, Mead does not seem to recognise that the vital statistics themselves are very likely the result of distinct under-recording. On the whole, therefore, the arguments which suggest that the 1947 census figure was an over-estimate seem acceptable.

#### 8. The 1960 Census

There seems to be no criticism of the 1960 census to be found in the published literature, although it is no doubt fair to assume that in the difficult matter of enumerating so large a population there is bound to be

a certain amount of misreporting. There can be little doubt that the 1960 census unlike previous censuses of the population of Egypt was in all major respects satisfactory, its coverage and accuracy contrasting favourably with censuses taken in other third world countries. The absence of any major criticism of the estimate for total population supports this view.

#### 9. The 1966 Census

The 1966 census was the first to be taken on a sample basis. This consisted of a complete head-count of the chosen sample, in which the number of persons by sex, religion and nationality were recorded household by household. This count was taken on a de facto basis. A list of households provided the framework for the sample. Other characteristics of the population were taken from a sample of households.

The census planned for 1970 as the latest in the series of decennial censuses (the last being that of 1960) was postponed because of the Middle East war. Measures were taken to carry out the postponed census during 1974 to coincide with the World Population Year. Again, however, the census was delayed. This created an increasingly difficult situation for researchers. They have had to content themselves with mid-year population estimates which have steadily diminished in accuracy as the census base population has receded into the past. The position was only relieved on the night of 22nd-23rd

November 1976, when the delayed census was finally held.

## B. Vital Statistics

Legislation attempting to obtain fuller registration of births and deaths was promulgated on 9th June, 1891, and a further decree was enacted on March 12th, 1898.<sup>(28)</sup> Both laws required the recording of vital events of Egyptian nationals only. However, law No. 23 of August 14th, 1912,<sup>(29)</sup> required registration for both Egyptians and resident foreigners in Egypt within 15 days for births and within 24 hours for deaths. By an Act of 1946, the reporting of births became compulsory within 8 days of confinement.<sup>(30)</sup>

There is evidence of serious under-reporting of births and deaths in Egypt. Abu-Lughod<sup>(31)</sup> notes that the above enactments were mandatory but not enforceable. Some sources have reported large errors in the vital statistics. For example, in 1957 it was reported that "Registration for the whole of Egypt is 80 per cent complete regarding births, 77 per cent for deaths and only 70 per cent for infant mortality".<sup>(32)</sup> However, Valaoras in 1972<sup>(33)</sup> has indicated an improvement in registration, suggesting that 80-90 per cent of the total number of live births and deaths are now recorded. He also notes that infant mortality is under-reported by 7.65 per cent for males and 8.12 per cent for females.<sup>(34)</sup>

Moreover, the reliability of registration data, as between towns, between regions, between urban and rural areas, and between years, displays a high variability.

Accuracy is improved where there are health bureaux, and these now cover the whole of the urban population, but 60 per cent of the Egyptian population lives in areas without such registration facilities.<sup>(35)</sup> An interesting relationship, also, has been found between the distances of villages from health bureaux and the degree of coverage of vital events.<sup>(36)</sup> Registration has been remarkably improved by the extension of health bureaux and the increase in the area covered by them.

#### Organization of the Study

The study is divided into nine chapters. Chapter two is concerned with population growth during the period 1882-1970, with special emphasis on the regional differentials in population growth. The high rate of fertility, fertility trends, family planning and urban-rural differentials in fertility are dealt with in chapter three. Chapter four is devoted to mortality trends, spatial patterns and causes of death. The relative youthfulness of the population of Egypt is examined in chapter five. Chapter six deals with migration, showing that Egypt is experiencing a trend of internal migration from rural to urban areas, which produces a great rate of growth in cities. Chapter seven describes the uneven distribution and density of population across the various governorates. Urbanization is examined in chapter eight. Chapter nine deals with the attitude of the government towards population change, describing the attempts made to promote economic and social development. It seems clear that such attempts

are likely to be assisted by the kind of detailed description of the evolving population situation in Egypt which this thesis proposes to provide.

All the basic population data used and referred to in the thesis are to be found in volume two.

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CHAPTER TWOPOPULATION GROWTH IN EGYPT2.1 Population Growth

With a population of about 40.5 million at present (1977), the Arab Republic of Egypt is the second largest country of Africa after Nigeria and of the Middle East after Turkey. In order to explain Egypt's present-day population level, an examination of trends in its population growth during the nineteenth century is essential.

The first modern estimate of population was made during the French expedition in 1800 and put it at 2,460,200;<sup>(1)</sup> the second was calculated from the tax lists in 1821 and totalled 2,536,400.<sup>(2)</sup> This means that, if these figures are accepted as approximating to reality, during this twenty-one year period the population remained almost stable, there being no net gain of births over deaths. This stability may be accounted for by the fact that during that period the country had not yet fully awakened after the regime of the Mamelukes and Ottomans. Besides, Mohamed Ali did not inaugurate his agricultural revolution until 1823, when he constructed the barrages.<sup>(3)</sup>

During the next quarter century, however, between 1821 and 1846, it would appear, if estimates are correct, that there was a high rate of population increase (2.30 per cent annually), and that the population almost doubled to 4.5 million in 1846 (see Table 2a). This period coincided with the more prosperous part of Mohamed Ali's

period of rule. Thus, at this time Egypt was characterized by a degree of prosperity generated by the concentrated efforts to initiate development programmes both in agriculture and industry. More land was brought into cultivation and new crops were introduced. Among the latter, cotton proved to be particularly important as a commercial crop for it resulted in the establishment of the textile industry in Egypt. All these factors, coupled with a general feeling of national security and the stability of the government, provided an atmosphere in which a larger population could be supported.<sup>(4)</sup>

TABLE 2a  
Population Estimates for the Nineteenth Century

Year	Method of Counting	Total Population
1800	Calculated by the French Expedition	2,460,200
1821	Calculated from tax lists	2,536,400
1846	Calculated from Census of Houses	4,476,440
1882	Census of population (May 3)	6,809,727

Source: (a) Cleland, W., The Population Problem in Egypt: A Study of Population Trends and Conditions in Modern Egypt, Science Press Printing Company, Lancaster, Pennsylvania, 1936, Table 1a, p.7.

(b) Department of Statistics and Census, Census of Population 1960, Vol.2, Cairo, 1963, Table 1, p.XI.

The first census of a modern-type of Egypt's population was taken in 1882, and it reported the population as being about 6.8 million. According to this census,

the annual growth rate slowed after the period 1821-1846 from 2.30 per cent to a level of 1.17 per cent during the period 1846-1882. This may possibly be owing to a slow-down in the economy during that period.

Then between 1882 and 1897 there was another rise in the rate of increase to 2.42 per cent annually, the result was that the population rose to 9,748,906 in 1897. Population growth must have been the result of significant changes in mortality and fertility with a surplus of births over deaths and an increase in life expectancy, since the contribution of migration to population change was negligible.<sup>(5)</sup> The decline in mortality after 1882 is to be attributed more to social than to medical advances. Among the factors which contributed to the betterment of social and economic conditions during the last decades of the nineteenth century were the following:<sup>(6)</sup>

1. Improvement in foreign trade after the opening of the Suez Canal in 1869, and the development of railway networks.
2. Agricultural advances and the increased use of perennial irrigation which allowed more than one crop to be grown each year.
3. Improved cotton planting and marketing.
4. Expansion of the educational system.

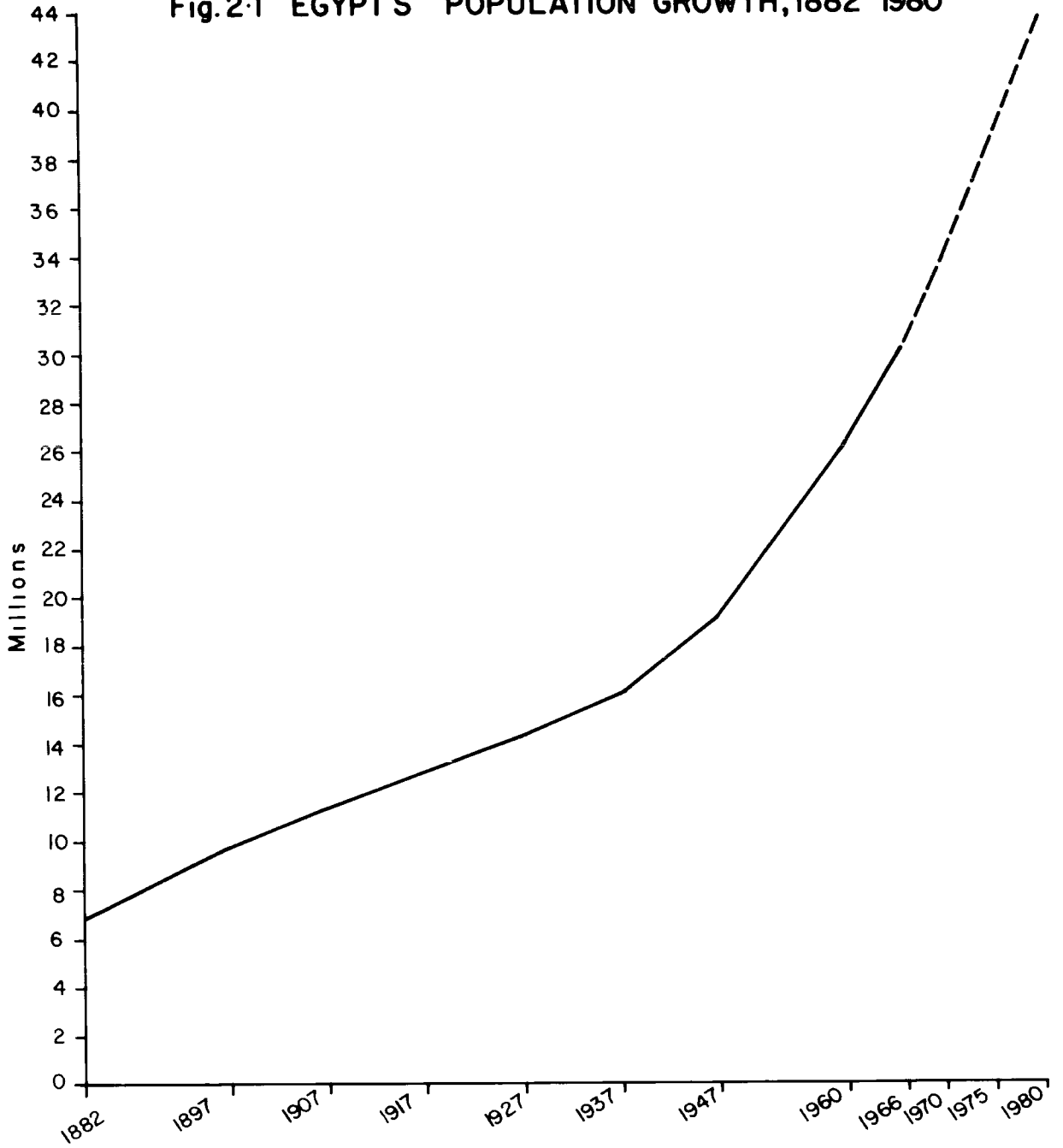
During the 60 years from 1907 to 1966, the population of Egypt increased from 11.5 million to 30.1 million (see Tables 2.1 and 2b and Figure 2.1). The rate of

TABLE 2b

Pattern of Doubling Time of Population, 1821-1970

Period	Duration of Intercensal Period (years)	POPULATION (in thousands)		Percentage Change
		At the beginning of the period	At the end of the period	
1821 - 1846	25	2,536	4,476	176.50
1846 - 1897	51	4,476	9,749	217.81
1897 - 1947	50	9,749	19,022	195.12
1947 - 1966	19	19,022	30,076	158.11
1947 - 1970	23	19,022	33,329	175.21

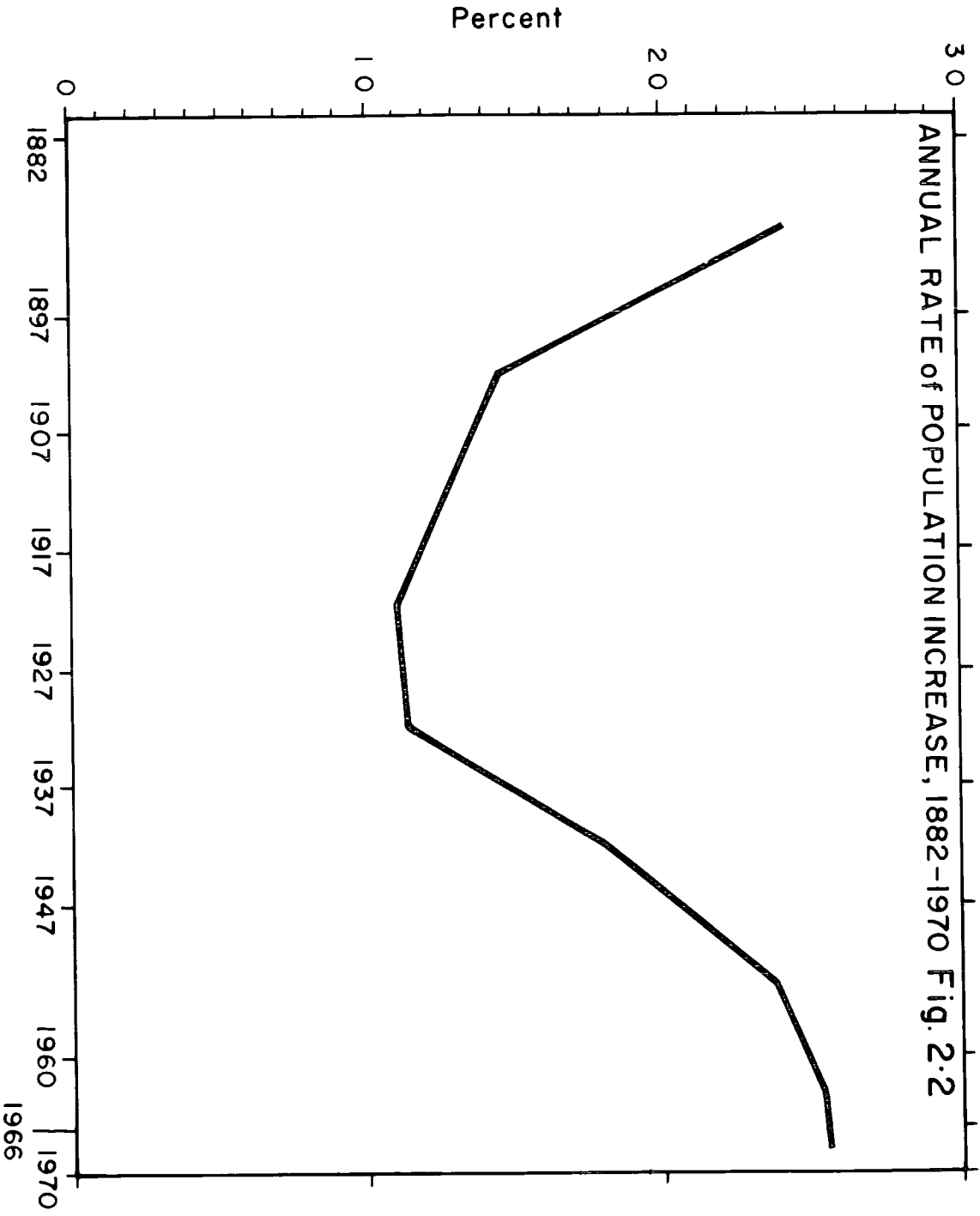
Fig.2-1 EGYPT'S POPULATION GROWTH, 1882-1980



increase may be summarized by saying that while the population increased fourfold during the nineteenth century, from some 2.5 million to about ten million, it doubled during the first fifty years of the twentieth century, from ten million in 1897 to about twenty million in 1947, doubled also in the 43 years between 1917 and 1960, from about 13 million in 1917 to 26 million in 1960, and trebled between 1897 and 1966.

There was a generally downward movement in the rate of increase of population between 1897 and 1927; the annual rate of increase, which was 2.42 per cent in the period 1882 - 1897, dropped in the next ten years to 1.45 per cent and further declined to 1.27 per cent and 1.10 per cent respectively, in the next two decades, and then began to rise in the four decades after 1927 to 1.13 per cent, then to 1.79 per cent, 2.37 per cent and 2.53 per cent respectively (see Table 2.2 and Figure 2.2).

The sudden rise observed for the period 1937-47 has been interpreted by some demographers as being no more than the result of over-enumeration in the 1947 census.<sup>(7)</sup> The annual rate of increase in this period (1.79 per cent) was even higher than it was from 1897 to 1907 - "critical years when the growth of perennial irrigation led to rapid expansion of both the cultivated and crop areas, and a constantly increasing labour requirement".<sup>(8)</sup> The annual rate of increase for 1947-60, which was 2.37 per cent, was high in comparison with the rate of growth of world population (2.1 per cent in 1960-62).<sup>(9)</sup> The rate was



also high compared with that of some other underdeveloped countries such as India (with a rate of 2.3 per cent). Compared with countries having almost the same social structure and religious background, the annual rate of population growth in Egypt is still high, higher, for instance, than the rate for the Moslem population in Pakistan which was 2.1 per cent, and for the population of Tunisia with a rate of 1.4 per cent in the period 1958-62. (10)

The slowest rates of increase during the period 1882 to 1966 were 1.10 per cent annually from 1917-27 and 1.13 per cent annually from 1927-37. The slow rate is readily explained by the marked rise in death rates during World War I, especially during the terrible influenza epidemic of 1918 which pushed the peak of mortality in that year to a reported 39.6 per thousand for the whole country. Fertility was also depressed during the war years, when the birth rate dropped below 40 per thousand.

The variations in growth rate; for other periods between 1882 and 1966 remain to be explained in terms of mortality and fertility differentials, since the excess of births over deaths is practically the sole form of population increase in Egypt, both immigration and emigration having a negligible effect upon the rate of increase of the population. Thus El-Badry considered Egyptian population in his model as "closed". (11)

Between 1906 and 1966 - with the exception of the World War I years and the 1918 influenza epidemic - the

reported birth rates fluctuated between 37.6 and 45.4 per thousand with a low point in 1942 of 37.6 and a peak in 1930 of 45.4. During the same period, the reported death rates remained at above 24.9 per thousand until 1947 when the death rate dropped to 21.4, with a further drop to 14.1 in 1965.

The birth and death rates for 1906-66 show that a demographic gap of nearly 20 points per thousand between the birth rate (43.0) and the death rate (23.6) was already established in 1906. The decisive decline in mortality from a level close to the birth rate to a level persistently 15 to 20 per thousand lower than the birth rate must have occurred before 1906, presumably during the late nineteenth century. Such a decline in mortality while fertility levels remained high would explain the high growth rate between 1882 and 1897.

The progress in health, social and economic affairs during the twentieth century has had an effect on population growth by encouraging a decline in mortality, and perhaps an increase in fertility as well.

The censuses of 1947, 1960 and 1966 revealed that Egypt has entered by far the most critical period in her demographic history. It has brought the highest rates of growth ever recorded in the country, as the average rate of increase for the period 1947-66 is 2.42 per cent. This is the result of a "medical revolution" which has improved health conditions and has lowered crude death rates and has favoured an increase in the effective crude

birth rate. Improved medical care has been especially effective in reducing infant mortality rates. Improvements in public health, particularly in the field of infant care, led to a reduction in infant mortality from an average of 158.4 per thousand in the period 1940-44 to 121.2 per thousand in the period 1965-69. The widespread use of antibiotics supplemented the improvements in sanitation and personal hygiene. The Egyptian experience reflects the effectiveness of public health measures in reducing mortality.

In terms of demographic transition theory, Egypt since the end of the second World War has moved into the heart of the transitional stage, or the stage of demographic explosion, and is still in this stage.

The population of Egypt, estimated in 1975 at about 38.3 million, is expected to rise to about 43.8 million in 1980, and to about 50.1 million in 1985.<sup>(12)</sup> This sizeable advance in population is anticipated for several reasons. In the first place improvements in health and sanitary conditions are expected to continue and should effect a further reduction in death rates. This does not however, affect fertility since disease control does not necessarily involve basic changes in social institutions or education. Moreover, on religious grounds the Moslems, a majority of the population, do not favour birth control. Furthermore, a large percentage of the population is still engaged in agriculture (51.3 per cent of labour force in 1970), an occupation with which attitudes favourable to

large families are associated.

The heavy increase in population has not been balanced by a complementary increase in agricultural land. While the population had increased by about 241.9 per cent between 1897 and 1970, the area of farm land increased by only 17.9 per cent and the crop area by 61 per cent. As a result of this unbalanced increase, the per capita share in the cultivated area has dropped considerably from about half a feddan to less than a fifth. The individual's share of the crop area has dropped from 0.71 to about 0.33 feddan during the last seventy years. For the per capita share of land in 1970 to have remained at the 1897 level (0.71 feddan), the crop area would have had to be increased to 23.3 million feddans, that is, more than double the present area (see Table 2c and Figure 2.3).

The mounting pressure upon agricultural land has been countered by many efforts to increase levels of productivity from existing land. "There has been an intensification of the farming economy, improvement in agricultural techniques, the greater use of artificial fertilizers, the introduction of new crops and new strains of existing crops and, at the same time, the expansion of non-agricultural occupations to help pay for the necessary extra imports of foodstuffs".<sup>(13)</sup>

One of the effects of the population pressure in rural Egypt has been the fragmentation of agricultural holdings, for 70 per cent of the total landowning population own less than one feddan, with an average of less

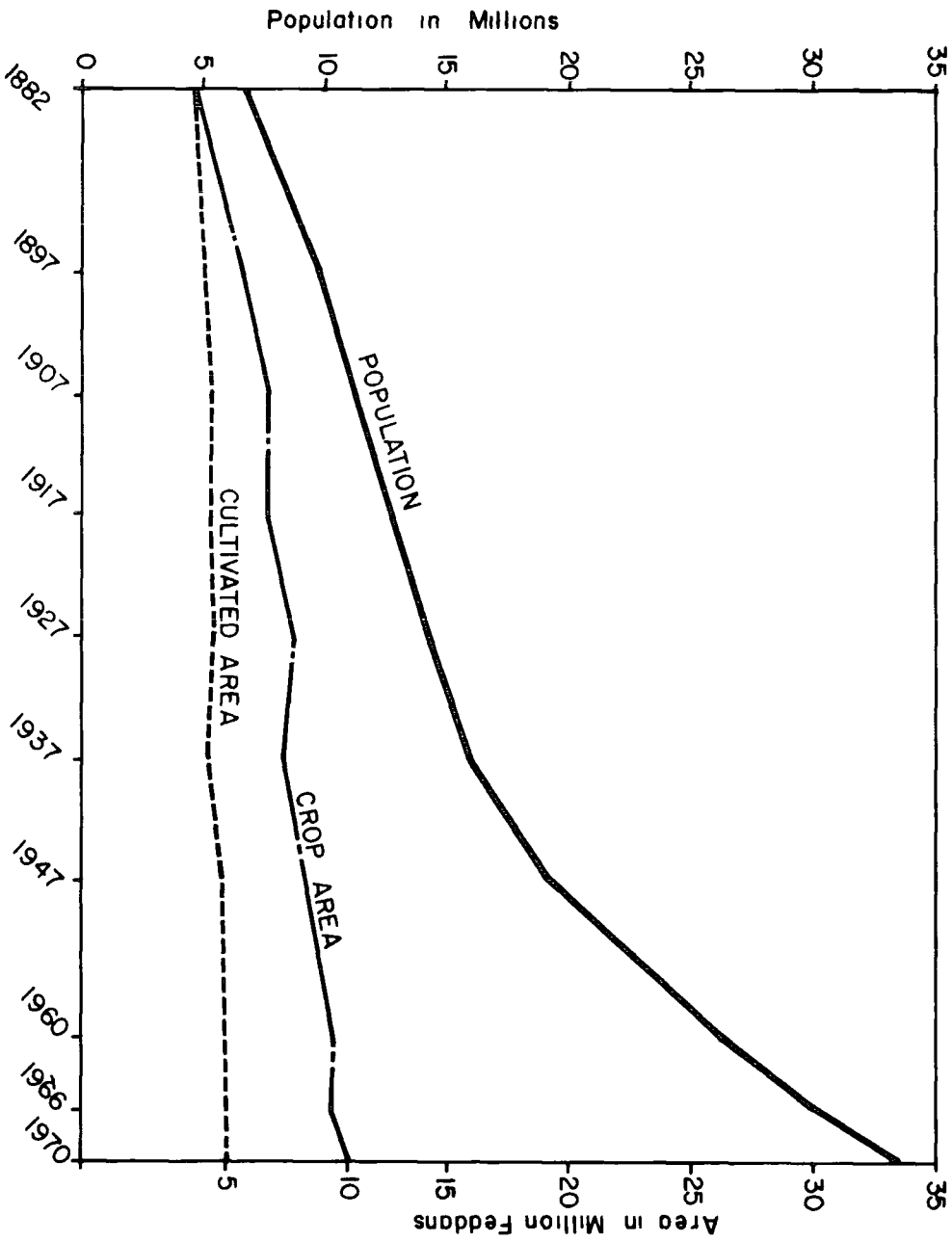
TABLE 2c  
Cultivated Area and Crop Area, 1882-1970

Years	Population (Millions)	Cultivated Area			Crop Area		
		Thousand Feddans	Increase or Decrease	Per Capita	Thousand Feddans	Increase or Decrease	Per Capita
1882	6.8	4,743	-	0.78	4,762	-	0.78
1897	9.7	5,088	+345	0.52	6,764	+2002	0.71
1907	11.3	5,403	+315	0.48	7,662	+ 898	0.68
1917	12.8	5,296	-134	0.41	7,686	+ 24	0.60
1927	14.2	5,544	+275	0.39	8,661	+ 985	0.61
1937	15.9	5,281	-263	0.33	8,358	- 303	0.53
1947	19.0	5,761	+480	0.31	9,167	+ 809	0.48
1960	26.1	5,974	+213	0.23	10,397	+1230	0.39
1966	30.1	6,000	+ 26	0.20	10,400	+ 3	0.34
1970	33.3	6,000		0.18	10,900	+ 500	0.33

Source: Central Agency for Public Mobilisation and Statistics, Population and Development: A Study on the population increase and its challenge to development in Egypt, Cairo, 1973, p.172.

+ 1 Feddan = 1.038 acres

Fig. 2.3 GROWTH OF POPULATION COMPARED WITH GROWTH OF CULTIVATED AREA AND CROP AREA, 1882-1970



than half a feddan for each owner. These pygmy holdings constitute the prevailing pattern of land holding in rural Egypt (see Table 2d).

Besides, another effect of the population pressure on agricultural land is unemployment in its various forms: complete, seasonal and hidden. This had led to the flow of rural-urban migrants who hope for better chances of finding work and of earning a living.

Another illustration of the population pressure on agricultural land, is the inadequacy of most of the food crops to meet the needs of the population. Despite the considerable increase in wheat production (from 5.18 ardabs per feddan in 1952 to 8.69 ardabs in 1972), for example, imports of this crop are constantly increasing and wheat has come to rank first among the imports in Egypt's foreign trade, and indeed to constitute a large proportion of the total of imports. The total value of imported food commodities rose from about L.E. 2.5 million in 1939 to about L.E. 45.7 million in 1960, then to L.E. 130.8 million in 1967. (14)

If the population pressure on the agricultural sector is not thought conclusive evidence that population growth in Egypt is too rapid, then the industrial sector may be considered. Industry in Egypt despite its rapid growth in recent years and despite its potential for growth in the future will probably, it seems, fail to cope with the demands of an increasing population. (15)

Estimates of national income in Egypt since the beg-

TABLE 2d  
Distribution of Land Ownership, 1952 and 1965

Size of Holding (Feddans)	1952 (before the Promulgation of the 1952 Land Reform Law)				1965			
	Land Owners (thousands)	Area Owned (thousand Feddans)	Percentage		Land Owners (thousands)	Area Owned (thousand Feddans)	Percentage	
			Land Owners	Area Owned			Land Owners	Area Owned
Under 5	2,642	2,122	94.3	35.4	3,033	3,693	94.5	57.1
5 - 10	79	526	2.8	8.8	78	614	2.4	9.5
10 - 20	47	638	1.7	10.7	61	527	1.9	8.2
20 - 50	22	654	0.8	10.9	29	815	0.9	12.6
50 - 100	6	430	0.2	7.2	6	392	0.2	6.1
100 - 200	3	437	0.1	7.3	4	421	0.1	6.5
Over 200	2	1,177	0.1	19.7	-	-	-	-
TOTAL	2,801	5,984	100.0	100.0	3,211	6,462	100.0	100.0

Source: Central Agency for Public Mobilisation and Statistics, Statistical Handbook of the Arab Republic of Egypt, Cairo, 1973, pp.60-63 (in Arabic)

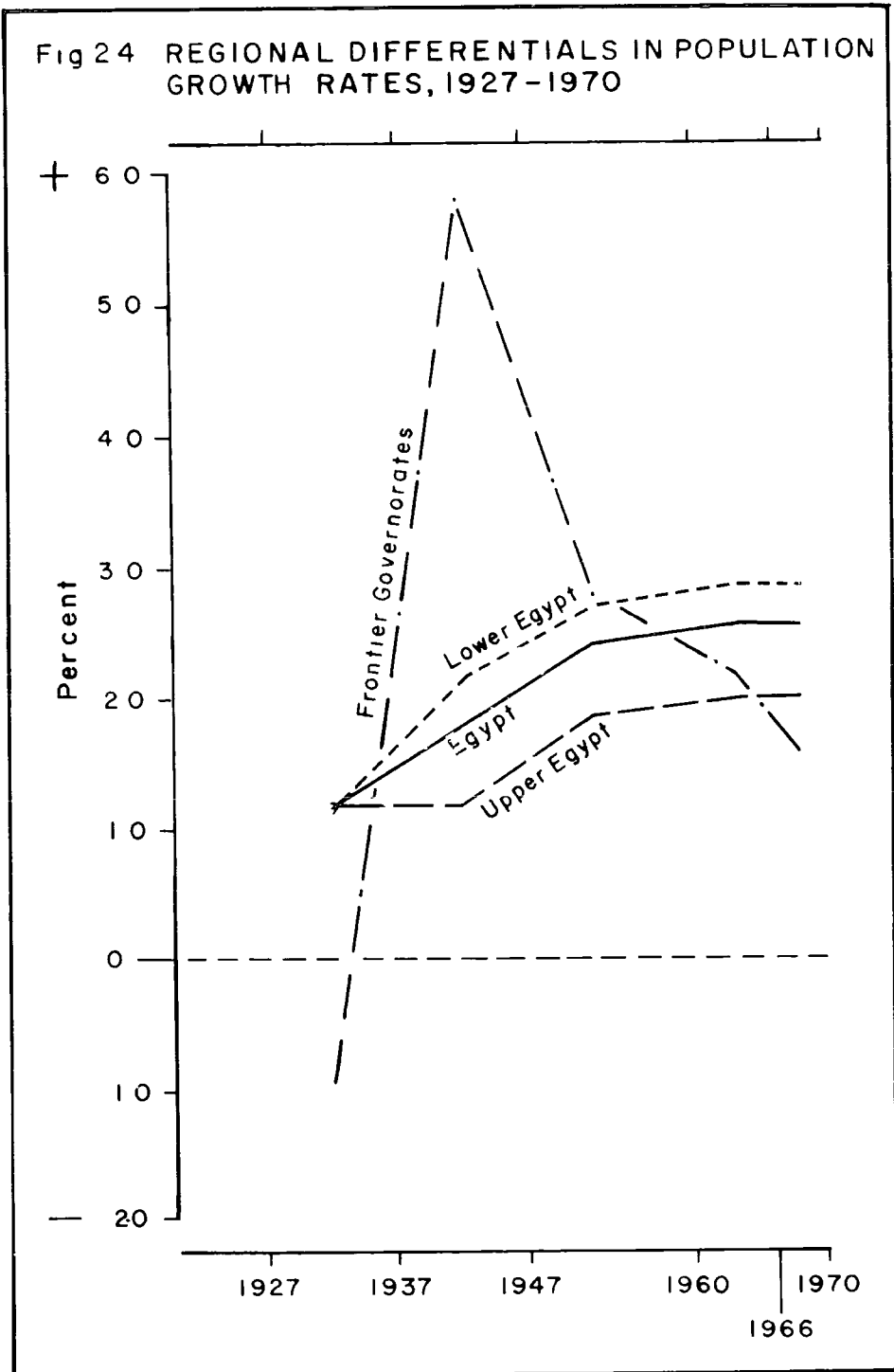
inning of the present century, show that in spite of the increase in the total income from year to year, this increase has always been offset by the increase in population. As a result, the per capita income has tended to remain almost constant. The total national income (at current prices) rose from L.E.806 million in 1952/53 to L.E. 2508.3 million in 1969/70, an increase of 211 per cent. During the same period the per capita income, also at current prices, rose from L.E.37.1 to L.E. 76.2 with an increase of only 105 per cent. (16)

## 2.2 Regional Differentials in Population Growth

The most important fact to emerge from Table 2.3 is the absolute overall growth of the population of the regions of Egypt from 1947 to 1966 and between 1966 and population estimates in 1970.

In Lower Egypt the 1966 population was about 1.67 times that of 19 years earlier. This period saw an absolute increase of 7,819,398, or 40.30 per cent of the population of Lower Egypt as at 1966, whereas in Upper Egypt the 1966 population was about 1.43 times that of 1947 population. This period saw, too, an absolute increase of 3,096,911 or 30.01 per cent of the population of Upper Egypt in the 1966 census. In frontier governorates, the 1966 population was about 1.64 times that of the 1947 population, and the absolute increase was 137,709, or 39.15 per cent of the 1966 population.

The annual rates of increase in population by regions between 1947 and 1970 (Table 2.3 and Figure 2.4) show that



the annual rate of population growth in Upper Egypt has been generally less than that in Lower Egypt. Over the two intercensal periods and for the recent period between 1966 and 1970, the annual growth rates for the whole of Lower Egypt were 2.68 per cent, 2.85 per cent and 2.85 per cent, compared with rates of 1.84 per cent, 1.97 per cent and 2.01 per cent for the whole of Upper Egypt. This suggests that there has been out-migration from Upper Egypt to Lower Egypt.

The annual rate of growth in the frontier governorates (Red Sea, New Valley, Matruh and Sinai) which was 2.82 per cent between 1947 and 1960, dropped in the next six years to 2.17 per cent and from 1966-1970 to 1.58 per cent. This further decline in the annual rate of increase between 1966 and 1970 was the result of the 1967 war, which promoted out-migration from Red Sea and Sinai governorates to other parts of the country.

The most populous part of Egypt is therefore growing more rapidly than the less populous areas. This growing concentration of population in a country which already has a highly localised population, will be observed in more detail throughout this thesis.

### 2.3 Urban-Rural Growth Rate

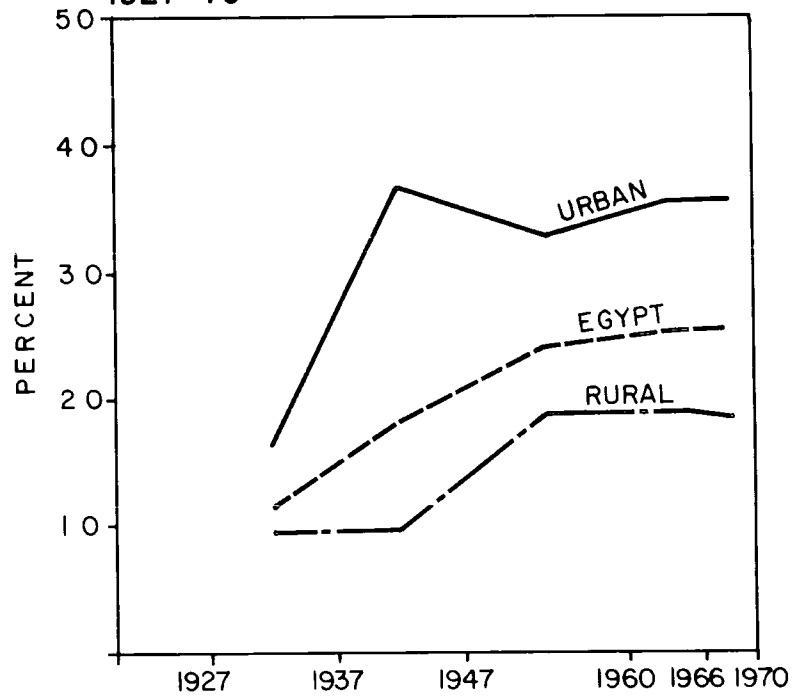
The definition of urban areas used in Egypt is an administrative one. According to that definition, urban areas comprise urban governorates (i.e. Cairo, Alexandria, Port Said and Suez), the capitals of other governorates, and the capitals of the districts (Markaz) within these

non-urban governorates. In addition to these administratively defined urban units, three industrial districts are given urban status: Shubra el Kheima, El Matariya and El Hawamdiya.

Urban population, thus defined, doubled between 1947 and 1966, from 6.4 million in 1947 to 12.1 million in 1966. A part of this increase (about 1 per cent) can be said to be the result of the conversion of some villages into urban units, but the major causes were natural increase and the actual migration of the rural population to urban areas.

The annual rates of increase for the urban and rural populations in Egypt are given in Tables 2.3 and 2.4 and mapped in Figure 2.5. The data show that for each period between 1947 and 1970, Egypt's rural population has increased at a significantly slower rate than that of the country as a whole. The annual intercensal rates of increase for all rural areas were 1.86 per cent (1947-60); 1.89 per cent (1960-66), and 1.85 per cent (1966-70). At no time between 1947 and 1970 did the rural population increase even approach the levels reported for Egypt as a whole, in fact the disparity between rural and total growth rates has grown more pronounced in recent years. This suggests a steady and very substantial rural-to-urban migration. In contrast the urban population increase has greatly exceeded that reported for the total population, the annual urban rates for the same periods were 3.28 per cent, 3.54 per cent and 3.55 per cent. Of particular interest is the increase in the urban rate between the

Fig 25 ANNUAL RATE OF INCREASE OF  
URBAN AND RURAL POPULATIONS,  
1927-70



first two intercensal periods (1947-60 and 1960-66) from 3.28 per cent to 3.54 per cent, and the decline in the rural rate from 1.89 per cent (1960-66) to 1.85 per cent (1966-70).

The percentage change in urban and rural populations between 1927 and 1970 as given in Table 2e indicates that there was a steep climb in the urban rate of change between the first two intercensal periods (1927-37) and (1937-47), 1.8 per cent in the first period, with a rise to 4.4 per cent in the next decade, compared with almost constant rural rates. The rural rates of change, which were about 1.0 per cent between 1927 and 1947, rose to 2.10 by the period 1947-60, and then declined to 1.90 per cent between 1966 and 1970.

#### 2.4 Governorate Population Growth

The annual rate of population growth has varied from one governorate to another with the consequence that some areas of Egypt are currently experiencing population increase at annual rates exceeding the national rates, while others are increasing at rates much slower than the national. During the period 1947-60 eleven governorates - four in Lower Egypt (Sharqiya, Qalyubiya, Gharbiya, and Minufiya) and seven in Upper Egypt (Beni Suef, Faiyum, Minya, Asyut, Sohag, Qena and Aswan)- experienced growth rates of less than the 2.37 per cent, which was the national average. Over the next period (1960-66), a total of eleven governorates - five in Lower Egypt (Damietta, Daqaqliya, Kafr el Sheikh, Gharbiya and Minufiya) and six in Upper Egypt (Beni Suef, Faiyum, Minya, Asyut, Sohag and Qena) - increased at

TABLE 2e  
Percentage Change in Urban and Rural Populations, 1927-70

Year	Duration of Intercensal Period (years)	U R B A N				R U R A L (1)				T O T A L								
		Increase since Preceding date	Average Annual Increase	% change in Pop.	Average Rate of Change of Population	Increase since Preceding date	Average Annual Increase	% change in Pop.	Average Rate of Change of Population	Increase since Preceding date	Average Annual Increase	% change in Pop.	Average Rate of Change of	Urban	Rural	Percentage		
1927	-	3,810,428	-	-	10,407,436	-	-	14,217,864	-	-	-	-	-	-	26.8	73.2		
1937	10.13	4,491,693	681,265	17.9	67,252	1.8	11,441,001	1,033,565	9.03	102,030	0.89	15,932,694	1,714,830	12.1	169,282	1.2	28.2	71.8
1947	10.0	6,445,312	1,953,619	43.5	195,362	4.4	12,576,528	1,135,527	9.93	113,553	0.99	19,021,840	3,089,146	19.4	308,915	1.9	33.9	66.1
1960	13.47	9,959,020	3,513,708	54.5	260,854	4.1	16,126,306	3,549,778	28.23	263,532	2.10	26,085,326	7,063,486	37.1	524,386	2.8	38.2	61.8
1966	5.69	12,139,774	2,180,754	21.9	383,261	3.9	17,936,084	1,809,776	11.22	318,063	1.97	30,075,858	3,590,537	15.3	701,324	2.7	40.4	59.6
1970	4.08	14,001,000	1,861,226	15.3	456,183	3.8	19,328,000	1,391,916	7.76	341,156	1.90	33,329,000	3,253,142	10.8	797,339	2.65	42.0	58.0

(1) Including Nomads in Frontier Governorates

rates of less than 2.53 per cent. By the period 1966-70, however, the regional pattern had become more balanced, with six Lower Egyptian governorates (Port Said, Damietta, Daqahliya, Kafr el Sheikh, Gharbiya and Minufiya) and six Upper Egyptian governorates (Beni Suef, Faiyum, Minya, Asyut, Sohag and Qena) reporting rates of population increase of less than the 2.55 per cent rate for Egypt as a whole (see Table 2.5).

It is clear that population growth in the four urban governorates has consistently exceeded that in the non-urban governorates, in both Lower and Upper Egypt, by a considerable margin, with the exception of Ismailia in Lower Egypt and Giza and Aswan in Upper Egypt. Although the natural growth of population has been high in both rural and urban areas, and probably higher in the latter areas because of lower mortality and higher fertility,<sup>(17)</sup> it seems that rural-urban migration, particularly to the Capital and Canal cities, has been a primary ingredient of urban governorate growth over the past quarter century. Giza, too, being little more than an extension of Cairo, has attracted population as though it were an urban area. Moreover the construction of the High Dam and the ensuing expansion of industry have attracted workers to Aswan from other areas of Egypt. The population has doubled its numbers in those governorates which experienced the high rates of growth between 1947 and 1966 (see Table 2f).

The evidence is clear that all governorates have experienced a net increase both from 1947 to 1966 and in the

TABLE 2f

Indices of Population Size in the Governorates  
of Egypt in Census Years 1947-66  
and Population Estimates in 1970<sup>(1)</sup>

Governorate	1947	1960	1966	1970
Cairo	194	313	394	463
Alexandria	158	253	300	339
Port Said	163	243	280	310
Ismailia	271	435	528	605
Suez	270	509	652	777
Damietta	149	223	253	277
Daqahliya	134	186	210	229
Sharqiya	127	171	198	220
Qalyubiya	128	175	208	237
Kafr el Sheikh	141	201	231	255
Gharbiya	116	153	174	191
Minufiya	107	128	137	144
Beheira	128	178	208	233
Giza	142	224	278	326
Beni Suef	121	143	154	162
Faiyum	121	152	169	182
Minya	124	152	166	177
Asyut	129	166	178	186
Sohag	133	164	175	182
Qena	123	150	163	173
Aswan	109	144	195	244
Red Sea	270	442	731	788
New Valley	128	134	234	250
Matruh	153	211	253	268
Sinai	250	331	869	927
EGYPT	134	183	212	234

(1) Base year 1927 = 100

recent period between 1966 and population estimates in 1970. The rate of increase has varied widely throughout the country, ranging between 5.63 per cent in Aswan governorate and 1.06 per cent in Sohag governorate. Cairo governorate had the highest rate of increase (3.61 per cent) between 1947 and 1960, but Aswan governorate the highest rate during the periods 1960-66 (5.43 per cent) and 1966-70 (5.63 per cent), although its growth rate was only 2.11 per cent from 1947 to 1960. Sohag governorate, in Upper Egypt, had one of the smallest rates of increase from 1947 to 1960: the rate of growth, which 1.54 per cent in this period, dropped in the following period (1960-66) to 1.13, and to 1.06 per cent between 1966 and 1970. Minufiya governorate had the smallest rates of increase in Lower Egypt during the period 1947-70, the annual intercensal growth rates of Minufiya being 1.33 per cent for 1947-60, 1.24 per cent for 1960-66 and 1.17 per cent for 1966-70. Sohag and Minufiya governorates are areas from which migration commonly occurs, because there is pressure of population on the limited acreage of arable land.

The annual rates of increase in urban population for each governorate (Table 2.6) show that during the period 1947-60, the governorates with rates of more than the 3.28 per cent, which was the national average, were seven: Cairo, Alexandria, Suez, Qalyubiya, Beheira in Lower Egypt, Giza and Aswan in Upper Egypt. Over the next period 1960-66, a total of eight governorates (Cairo, Ismailia, Suez,

Sharqiya, Qalyubiya and Kafr el Sheikh in Lower Egypt and Giza and Aswan in Upper Egypt) increased at rates of more than 3.54 per cent, which was the national average. By the period 1966-70, eight governorates, six in Lower Egypt (Cairo, Ismailia, Suez, Sharqiya, Qalyubiya and Kafr el Sheikh) and two in Upper Egypt (Giza and Aswan) reported rates of urban population increase in excess of the 3.55 per cent rate for Egypt as a whole. Giza governorate had the most rapid rate of urban population increase between 1947 and 1960 (6.59 per cent). Aswan governorate, however, had the most rapid rate of urban population growth ever recorded in the country between 1960 and 1970. This rate, which was 4.65 per cent from 1947 to 1960, rose to 8.88 per cent in the period 1960-66 and was 8.84 per cent from 1966 to 1970. On the other hand, Sohag governorate had the slowest rate of urban population increase during the period under consideration (1.52 per cent, 0.99 per cent and 1.19 per cent for the three periods respectively).

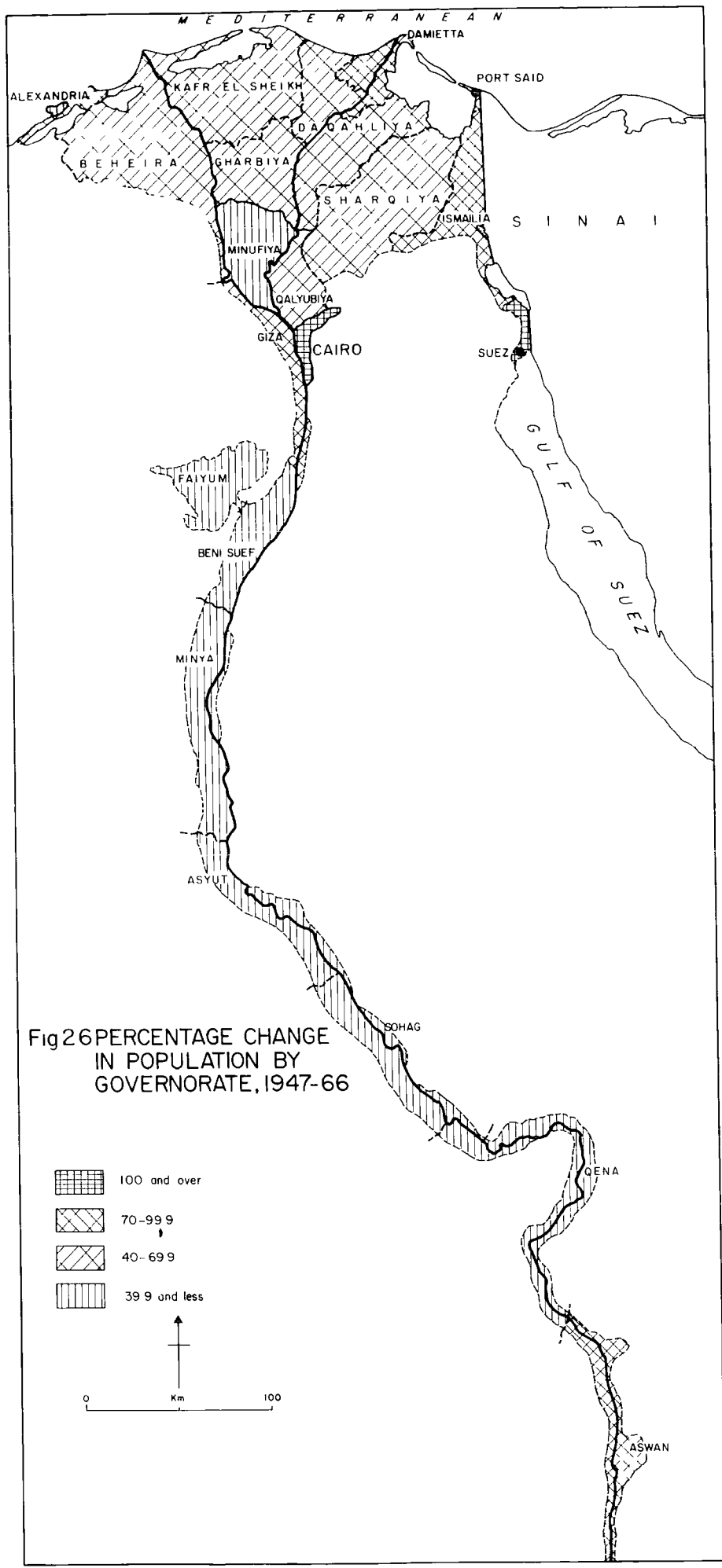
When the annual rates of increase in rural population for each governorate are examined for the periods 1960-66 and 1966-70, it may be seen that all the non-urban governorates in Lower Egypt, with the exception of Damietta and Minufiya, experienced growth rates exceeding the national average of 1.89 per cent and 1.85 per cent respectively. By contrast, during the same periods, all the governorates of Upper Egypt, with the exception of Giza and Aswan, experienced growth rates lower than the national average. Ismailia governorate had the highest rate of increase in rural population during the period 1947-60 (5.25 per cent),

but that rate decreased to 3.04 per cent between 1960 and 1966, and to 2.98 per cent in the period from 1966 to 1970. This decline was the result of the 1967 war, when most of the inhabitants migrated to other parts of the country. Aswan governorate, however, had the most rapid rate of rural population increase between 1960 and 1970, the annual rate of increase being recorded as 1.27 per cent during the period 1947-60, 3.84 per cent in the period 1960-66 and 3.77 per cent in the period 1966-70; this increase was the result of the re-settlement of the Egyptian Nubians from their original homeland into Nasser district at Kom Ombo. By contrast, Beni Suef governorate had the lowest rate of rural population growth from 1947-60 (1.04 per cent annually), the frontier governorates the lowest rate between 1960 and 1966 (0.82 per cent annually), and Asyut governorate the lowest growth rate during the period 1966-70 (0.82 per cent annually) as shown in Table 2.7.

In spite of the wide variations in percentage change (Table 2.8 and Figure 2.6), they can be classified into four groups.

Areas of slight growth (less than 40 per cent) are mainly found in southern Lower Egypt, including Minufiya governorate, and in Upper Egypt, with the exception of Giza governorate in the north and Aswan governorate in the south.

Districts which tend to show moderate gain (40-70 per cent) are to be found in the eastern part of the Delta,



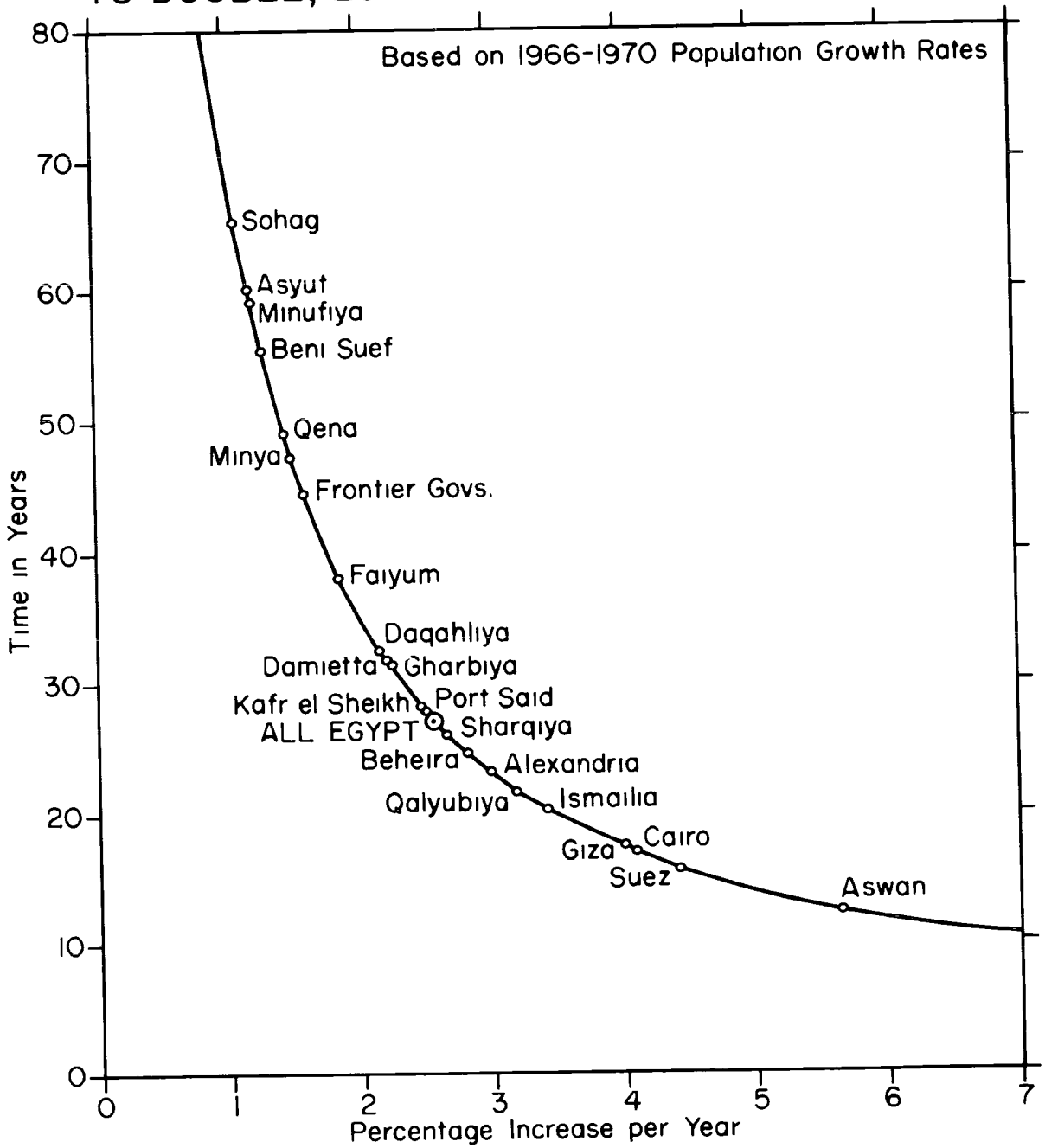
including Daqahliya, Sharqiya and Qalyubiya governorates, in mid-Delta, including Gharbiya and Kafr el Sheikh governorates, and in the western part of the Delta, including Beheira governorate. In other words, most of the districts showing moderate growth are to be found in those parts of the Delta lying outside Minufiya and Damietta governorates.

The districts which have achieved high rates of increase (70-100 per cent) are Alexandria, Port Said, Ismailia, Damietta, Giza, Aswan and New Valley governorates.

Very high percentage changes (more than 100 per cent) are only found in Cairo and Suez governorates, and in the Red Sea and Sinai governorates.

The number of years required for the population of each governorate to double can be calculated using 1966-70 growth rates (Figure 2.7). It is apparent that if present rates of increase continue the urban governorates, especially Suez, Cairo and Alexandria, will double in population in a very short time - 16, 17 and 24 years, respectively. Suez and Alexandria are examples of affluent and developing governorates with opportunities for work and investment. Cairo's rapid growth results from in-migration from all over the country. Among the non-urban governorates of Lower Egypt, Ismailia, Qalyubiya, Beheira and Sharqiya will double in population the most rapidly - in 21, 22, 25 and 27 years, respectively. Most of the Upper Egypt governorates will need a relatively longer time to double,

FIG. 27 YEARS REQUIRED FOR POPULATION TO DOUBLE, EGYPTIAN GOVERNORATES



with the exceptions of Giza and Aswan, the latter, which has the shortest doubling time in the whole of Egypt (13 years) is growing rapidly because of increasing opportunities for work in projects related to the High Dam. The frontier governorates had one of the slowest rates of increase for the period 1966-70, but this pattern may shift in the near future as a result of resettlement plans, industrialization and oil discoveries.

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CHAPTER THREEPATTERNS OF FERTILITY3.1 Traditional High Fertility

The Egyptian population is highly fertile and since external migration is negligible, the rapid growth of the population is almost entirely owing to the excess of births over deaths. The high rate of fertility may be explained by several factors pertaining to the economic structure, social background, religions and ethical values, and cultural patterns.

With a major agricultural sector, Egypt's economic structure favours large families. Egyptian agriculture, with cotton as the major crop, is a labour intensive operation which encourages large families. As to the social background, and religious and ethical values, Kingsley Davis points to a number of relevant factors contributing to high fertility in underdeveloped countries in general.<sup>(1)</sup>

(a) the effect of the composite family and joint household, in which we find the economic factor is a dominant one, (b) the segregation of male and female roles, and (c) family and kinship as a principal determinant of social position. It should be noted that the influential economic factor lies behind these more superficial reasons for high fertility. These factors which Davis singles out all appear to operate in the Egyptian economy.

In the first place, the nuclear family of procreation tends in the rural areas of Egypt to be controlled by the

parental families. That is, the older relatives govern the conduct and economic position of the family. The standing of the family in the community depends largely on its numbers, a circumstance that encourages large families which tend to live close to and remain under the surveillance of the "in-laws". The second factor concerns the segregation of male and female roles in the agrarian societies of Egypt. The institutional reduction of the feminine sphere of influence here reaches an extreme point owing to a misinterpretation by the illiterate people of the teachings of the Moslem religion. Women are confined to the household without any education, since education for women is considered unnecessary. The percentage of the female population which was literate in rural areas in 1957 was 7.7 as compared with 31.1 for urban areas.<sup>(2)</sup> The female role thus is largely identified with the process of reproduction.

Egypt is one of the leading Moslem countries, with 93.2 per cent of its population Moslems in 1966.<sup>(3)</sup> Among the majority of the Moslem population, in Egypt as well as in other Moslem countries, there is found a religious objection to any attempt to control the birth rate. There is, indeed, a strong conviction that a large family is encouraged by the teachings of the Islamic religion. Such attitudes are evident from a study of total fertility rates among the Moslems and Christians in the metropolitan areas of Egypt. The total fertility rate was 6,675 among the Moslems as compared with 4,089 among the Christians.<sup>(4)</sup>

The Islamic religion is usually blamed for the prevalence of such high fertility rates among the Moslems. Moslem religious teaching, if literally interpreted, could be construed to prohibit any limitation of the numbers of children, to prohibit, that is, family planning or population control. Two main factors are responsible for this. Firstly, there is no verse in the Koran that explicitly sanctions or prohibits birth control. Rather, there are some verses in the Koran and the sayings of the prophet that could be interpreted as favouring large families. Secondly, by the end of the thirteenth century, Islamic jurisprudence and interpretation had declined into mere legalism. With the passage of time the scriptural source became so remote from the legal commentary that originally trivial matters regarding birth control soon came to seem important in their own right and fundamental to religious orthodoxy. However, the opinion of modern Moslem jurists on the subject is less unyielding than the older opinion which still holds sway among the people. Modern jurists agree that birth control or family planning is permitted in certain cases.<sup>(5)</sup> Firstly, when a woman might become pregnant immediately following a previous pregnancy, a circumstance that might affect the health of the mother and also the children. Secondly, if either of the parents carries a hereditary disease that might be transmitted to the offspring. Thirdly, in the case where frequent pregnancies might endanger the health of the mother or delay her recovery from an illness. Fourthly, when the family

income is too low to support a large family; in other words, when more children may unduly lower the standard of living of the family.

Some part of the explanation of the high fertility rate is to be found in the status of women in family law (personal statutes law) in Egypt, which is mainly based on the Moslem law (Sharia). The first concerns the age of marriage. The minimum age of marriage as set by the Egyptian law of 1923 is sixteen years for girls and eighteen for boys. Marriage contracted below this age, however, is not void, even though it has no legal reality or consequence, and even though the notary responsible for the registration of such a contract is subject to penalty. There has been discussion in a number of countries about the wisdom of political moves to raise the age of marriage. India and Pakistan have legislated high minimum marriage ages, but with little effect.<sup>(6)</sup> This is a question of great practical importance, since even if two societies succeeded in limiting the number of children born in their families to the same average level, the society in which childbearing occurred at a younger age would have a higher birth rate, a greater growth rate, and a younger population.<sup>(7)</sup>

The average age at marriage of females was 20.1 and for males was 26.3 in 1969. Proposals at the Egyptian National Assembly sessions of April-May 1970, for raising the age of marriage for girls from sixteen to twenty were opposed. It was contended that it would have a minimal effect on birth rates (producing only a reduction of 3 per cent), would lead to behaviour deviance particularly in

rural areas, and would encourage unofficial or clandestine marriage. (8)

There are other aspects of the status of women which are relevant to the discussion, they are the provision for polygamy and easy divorce. A Moslem man can marry up to four wives. The right to marry more than one wife is, according to the Islamic law, subject to two conditions: firstly, justice to all wives ("if you fear injustice marry only one" is a Koranic injunction); secondly, the financial capacity of the husband to maintain all his dependants in the immediate and the extended family. It is left to a man's discretion, however, to make the decision to marry more than one wife. Should a man marry in spite of his inability to maintain his wives, he stands as a sinner before God, but nevertheless his marriage is legally valid. According to reliable authorities, there is nothing in the Moslem religion to prevent the devising of legislation authorizing the court to withhold registration of a plural marriage if the conditions of justice and financial capacity are not met.

The main argument still advanced in favour of polygamy is that, though unsatisfactory, a plural marriage may prove to be the lesser of two evils, when set against the alternative of divorce in the case of a wife's invalidity for example; another argument refers to the interest of the children from the former marriage. Such arguments take into account the unilateral right of the man to repudiate his wife, as well as the relatively low and de-

clining percentage of plural marriages in Egypt. (Plural marriages represented 3.78 per cent of the total Moslem marriages in Egypt in 1960).

A marriage contract under Moslem law can be dissolved in one of three ways: by the husband at his will without the intervention of a court (talaq, a power which can be delegated to the wife); by mutual consent; or by judicial decree through a process of annulment or dissolution. A Moslem man has a right to repudiate his wife three times before the divorce becomes irrevocable. Proposals have been made to restrict this unilateral right of the man, and to introduce new procedures by means of which divorce will have to be officially registered in the presence of two witnesses. Modifications of the legislation concerning the status of women in family law have long been under study. When easy divorce was suggested, in the discussions at the National Assembly family planning session, as a factor contributing to high fertility, the comment of the rapporteur was that divorce has no relevance to or bearing upon the population problem, since it affects, according to the latest statistics, only 5.9 per cent of marriages. Nevertheless, it does seem that easy divorce and polygamy continue to undermine women's sense of security and to drive them to tie their husbands with many children.

Pre-eminent among the high fertility determinants is the pervasively rural orientation of society. Despite the rapid increase in the percentage of the population

residing in urban areas, the dominant character of the society remains rural. 'Rural' fertility behaviour is not necessarily restricted to the 60 per cent or so of Egyptians classified as rural by census definition, not only to those living in villages where the main occupation is agriculture. Rather, rural or traditional fertility performance extends to a sizeable proportion of the remaining 40 per cent of the population which lives in towns and cities. Many urban residents have a rural background, for example rural migrants constitute more than one-fifth of the population of Cairo, and many of the rural values which accompanied them on their move to the city have remained unchanged in the urban environment. The suburbs of Cairo, Alexandria, the Canal cities, and the governorate towns are in a sense microcosms of the villages which their inhabitants left. Within these neighbourhoods, the individual has the intimate, lasting bonds of kinship and values characteristics of traditional village life.<sup>(9)</sup> Hence, a considerable portion of the so-called urban population still holds to the tradition-bound economic and cultural outlook of villagers, and this is reflected in their fertility performance.

Perhaps of even greater consequence for population growth is the fairly immediate impact of improved survival, decreased widowhood, and general lowering of morbidity among the rural inhabitants who have moved to urban areas. In other words, with high 'rural' fertility and declining 'urban' mortality, these transplanted segments of the

society contribute heavily to urban population growth.

While a generally poor health situation would tend to depress fertility, a high level of child mortality might have the opposite effect. This conclusion follows from the fact that the higher the level of such mortality, the greater the average number of births required to achieve a given family size.<sup>(10)</sup> On the other hand, the desired family size may be affected by the probability that a child will survive. Leibenstein<sup>(11)</sup> points out that the higher the survival rate, the greater the expected number of years of utility and economic returns provided by a child and therefore the more children desired.

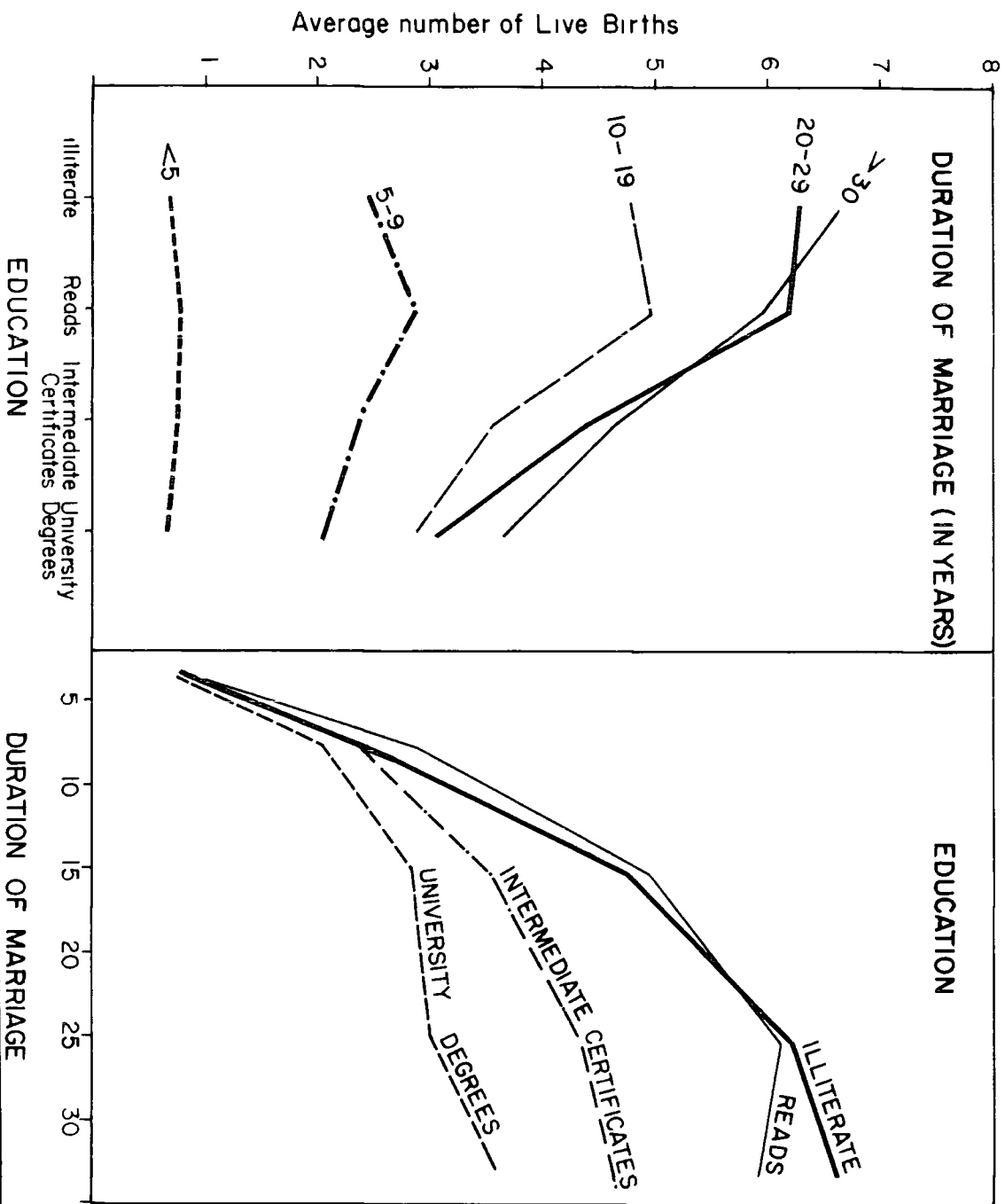
The traditional appreciation of children inherited by modern Egyptian Society rests on strong religious and economic grounds. For centuries, the family has been the cornerstone of Egyptian Society. In addition to the immense cultural and emotional satisfaction children have traditionally brought Egyptian parents, children in Egypt - as in most other agrarian societies - have been considered economic assets and perhaps even necessities. Particularly when cotton completely dominated Egypt's economic system, an additional child meant more of the cheap labour that was essential for cotton cultivation.

In Egypt there is an unmistakable preference for male offspring which is reflected, for example, in the inheritance system, which allocates male offspring double the share of the female. Much of the old tribal culture still

permeates Egyptian Society, attaching as it does great value to the male as the protector of family prestige, honour, and property. There is also great economic dependence on the male members of the family. Because of comparatively high childhood mortality, many families have felt the need to have a 'surplus' of children in order to assure the survival of at least one male child. This inclination is reinforced by the regard for sons as 'social security' for aged parents.

The sweeping changes in the education of the Egyptian population have brought to bear another major influence on fertility in Egypt. The influence of the wife's education on fertility can be seen from Table 3.1 and Figure 3.1 which show that for nearly every duration of marriage group and for all married women, the average number of live births per woman decreases progressively with increased educational attainment, according to 1960 census data. The table shows that illiterate wives and those who could barely read and write had an average of 4.2 and 3.7 live children, respectively, compared to 1.6 live children for University graduates. The differences within each marriage duration group are marked for marriages of ten or more years. The table shows, too, that there is an unmistakable effect of increased marriage duration for each educational level. However, as the duration of marriage increases, those with little or no education have many more children than those with high educational attainment. Illiterate wives, for example, have an average of 6.7 children after 30 or more

Fig. 3 | AVERAGE NUMBER OF CHILDREN BY EDUCATION AND DURATION OF MARRIAGE



years of marriage, while the University graduates have only 3.7 children after 30 years.

Working women have fewer children than non-working women of the same age and marriage duration.<sup>(12)</sup> A tentative study on aspects of women's employment in Egypt in relation to their rate of child bearing during the decade 1957-1967 shows a slight decrease in fertility among the employed.<sup>(13)</sup>

## 3.2 Fertility Trends

### 3.2.1 Trends in the Crude Birth Rate

Until quite recently, the reported birth rates since 1917 have been fluctuating around a relatively high level of more than 40 per thousand, and adjusted rates around 47 or 48 per thousand; there have been three small yet distinct dips in the birth rates between 1917 and 1963. The first occurred in 1918 and 1919 when the reported rates dropped to 38.9 and 37.7 per thousand (adjusted rates of 46.3 and 45.0). This drop coincided with the war conditions and the influenza epidemic following World War I. Although Egypt had an economic depression in the 1930's, there was no decline in birth rates during that period as there was in many other countries. Not until World War II did the birth rate again drop below 40 per thousand (between 1942 and 1944). A slight depression in birth rates occurred in the 1950's and was noted by El-Badry as starting in 1956.<sup>(14)</sup> A close look at the trends shows that the decline actually started in 1953 when the reported birth rate

dropped to 42.6 from 45.2 and the adjusted rate to 45.9 from 48.2. Birth rates started to rise again in 1958, fluctuating slightly until 1964, when a real and progressively declining trend began. The reported rate dropped from 43.0 in 1963 to 41.7 in 1965, to 39.2 in 1967 and to 35.1 in 1970 - the lowest level ever reported in Egypt (see Table 3.2 and Figure 3.2). The corresponding adjusted rates were 44.7, 43.1, 40.4 and 36.5 (see Table 3a). It is conceivable that since the 1950's various large dips in birth rates may have been concealed by improvements in registration of births. Because the National Family Planning Programme was launched in the 1960's, a controversy has arisen as to whether or not the programme can be credited with the decline.

### 3.2.2 General Fertility Rate

The general fertility rates, which are given in Table 3.3 for the census years between 1917 and 1966, show an increase between 1917 and 1937 followed by a drop in 1947, and then a rise from 171.9 children per thousand women at age 15-49 years in 1947 to 190.0 in 1960. Such an increase is probably due to improvement in maternal care and registration of vital events.

The general fertility rates show a downward trend, especially from 1963 to 1969, as they declined from 184 to 159 per thousand, a 13 per cent decrease (see Table 3b).

TABLE 3a

Reported and Adjusted Crude Birth Rates, 1917-70  
(per thousand)

Year	CBR		Year	CBR		Year	CBR	
	Re-ported	Ad-justed		Re-ported	Ad-justed		Re-ported	Ad-justed
1917	40.1	47.6	1936	44.2	49.4	1955	40.3	45.9
18	38.9	46.3	37	43.4	47.0	56	40.7	42.3
19	37.7	45.0	38	43.2	46.0	57	38.0	40.0
1920	42.2	49.4	39	42.0	46.4	58	41.1	42.8
21	41.8	48.9	1940	41.3	46.2	59	42.8	44.8
22	43.1	50.1	41	40.4	45.1	1960	43.1	45.2
23	43.1	50.1	42	37.6	41.0	61	44.1	46.1
24	43.8	50.7	43	38.7	42.2	62	41.5	43.3
1925	43.5	50.3	44	39.8	44.3	63	43.0	44.7
26	44.2	50.9	1945	42.7	47.9	64	42.3	43.8
27	44.0	50.5	46	41.2	45.5	1965	41.7	43.1
28	43.6	50.0	47	43.7	49.1	66	41.2	42.5
29	44.2	50.3	48	42.7	46.3	67	39.2	40.4
1930	45.4	51.2	49	41.8	45.3	68	38.2	39.3
31	44.5	50.1	1950	44.4	47.1	69	37.0	37.8
32	42.5	47.8	51	44.6	48.0	1970	35.1	36.5
33	43.8	48.9	52	45.2	48.2			
34	42.2	48.0	53	42.6	45.9			
1935	41.3	45.9	54	42.6	45.7			

- Source: (a) Department of Statistics and Census, Vital Statistics, Vol.2, Cairo, 1959, pp.2-3.
- (b) C.A.P.M.S., Vital Statistics Since 1930 for the A.R.E., Cairo, 1973, pp.44-47.
- (c) El-Badry, M.A., "Trends in the Components of Population Growth in the Arab Countries of the Middle East: A Survey of Present Information", Demography, Vol.2, 1965, p.144.
- (d) Omran, A.R., "The Fertility Profile", in Omran, A.R. (Ed.), Egypt: Population, Problems & Prospects, Carolina Population Center, University of North Carolina at Chapel Hill, 1973, p.75.

Fig. 3.2 REPORTED AND ADJUSTED BIRTH RATES, 1917-70

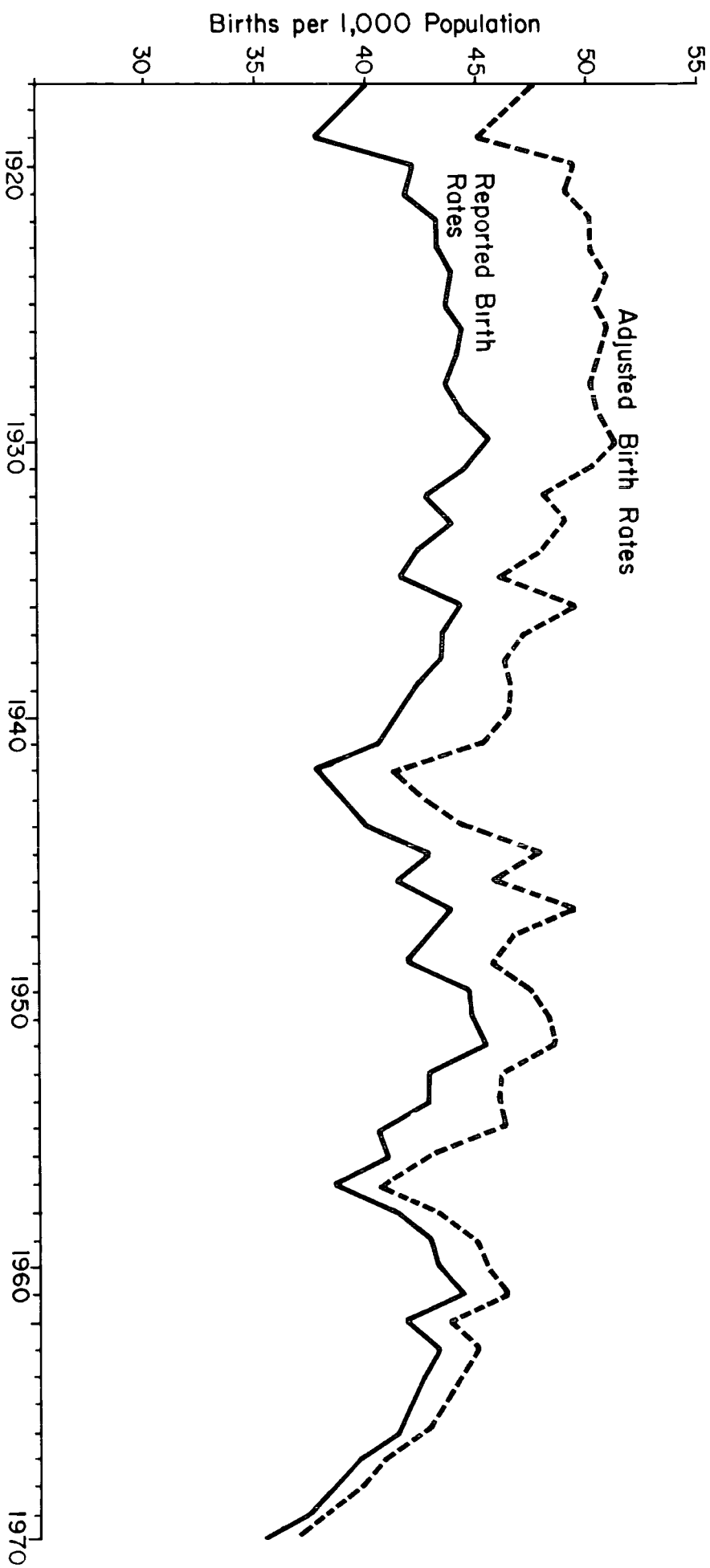


TABLE 3bGeneral Fertility Rates, 1960-69

Year	General Fertility Rate
1960	190
1961	189
1962	178
1963	184
1964	181
1965	179
1966	175
1967	169
1968	164
1969	159

A comparison of the trend of the general fertility rate with that of the crude birth rate shows a slight discrepancy between them, especially prior to the steady declines in both rates after 1963. The comparatively high general fertility rates calculated for the early 1960's may reflect this measure's greater sensitivity to the effects of postwar mortality declines. Declining mortality increased the flood of females reaching reproductive age, but at the same time - as fertility remained high and childhood survival improved - helped to make females of reproductive age a smaller proportion of the total population. (15)

### 3.2.3 Total Fertility Rate

This rate is generally regarded as the best single cross-sectional measure of fertility, because it is rather closely restricted to the childbearing population

and is not influenced by differences in the age composition between childbearing populations. Also, because it assumes that all women survive from birth to the end of the childbearing period, it is independent of mortality. (16)

The total fertility rates calculated from the age specific rates between 1930 and 1967 are given in Table 3c and are expressed as births per woman rather than per thousand women. The trend described by these rates is variable and, prior to the late 1940's, generally fairly high, the record low of 4.9 occurring in 1942; thereafter, the trend is generally upward with even greater annual fluctuations in the 1950's. The highest rate (6.2) is recorded for 1960, 1961 and 1966. In 1967 the trend is downward, reaching a rate of 5.7 births per woman.

#### 3.2.4 Age Specific Fertility Rates

It may be noticed in Table 3.4 that the age specific fertility rates indicate that fertility was at its highest (338) for women in the age group 25-29 in 1947. In the lower age group 20-24 the rate was 256.7, while this rate dropped to 47.8 per thousand women in the youngest age group 15-19.

A comparison of the rates for each age group in 1960 makes it clear that the fertility rate was no longer highest in the age group 25-29; this maximum was shifted to older women of 30-34. However, the rate for the former group shows an increase of 1.6 per cent between 1947 and 1960.

TABLE 3c  
Total Fertility Rates, 1930-67

Year	Rate
1930	5.8
1935	5.3
1937	5.6
1940	5.3
1941	5.2
1942	4.9
1943	5.0
1944	5.2
1945	5.5
1946	5.3
1947	5.7
1948	5.5
1949	5.4
1950	5.8
1951	5.9
1952	6.0
1953	5.7
1954	5.7
1955	5.4
1956	5.5
1957	5.2
1958	5.7
1959	5.9
1960	6.2
1961	6.2
1962	5.8
1963	6.0
1964	5.9
1965	5.8
1966	6.2
1967	5.7

In 1966, the fertility was again at its highest (302) for women in the age group 25-29, and at its lowest in the youngest age group 15-19.

### 3.2.5 Reproduction Rates

The gross reproduction rate rose from 2.71 in 1947 to 2.91 in 1960, and then to 3.0 in 1966. This increase may be due to improvement of registration of female births as signified by the consistent reduction in the sex ratio. Table 3.5 shows the changes in Egypt's sex ratio between 1917 and 1970.

Similarly, the net reproduction rate increased from 1.77 in 1947 to 2.09 in 1960, and then to 2.25 in 1966, i.e. an increase of 7.6 per cent from 1960-1966, which is higher than that noted in connection with the gross reproduction rate (3.1 per cent) during the same period.

According to the United Nations study The Determinants and Consequences of Population Trends, "Countries with birth rates above 30 and gross reproduction rates above 2.0 are considered areas of high fertility",<sup>(17)</sup> and obviously Egypt falls well within this category.

## 3.3 Future Fertility

### 3.3.1 Family Planning

Increased expectation of life, a large highly fertile population, and the large-family centred traditions of an agricultural economy are the major conditions for the rapid growth of population in Egypt. These conditions, when complicated by difficulties in the distribution of goods and services - land use, importation, income,

nutrition, education, and employment - make the need for family planning imperative.

The very first attempt to provide family planning services in Egypt goes back to 1945 when the Child Society of Maadi included family planning among its services. Strong opposition forced the society to abandon the effort, however. (18)

In 1953, the authorities began to respond seriously to the dangers of rapid population growth and a National Commission for Population Problems was established to institute research programmes into demographic aspects of development and, if necessary, to provide advice and guidelines for the creation of a population policy. The committee developed a great interest in the possibilities of birth control, and so that field studies might be undertaken, family planning clinics were established. (19) By 1955 there were eight of these, four in Cairo and four in Alexandria and they were usually organised by voluntary associations. Four more clinics were established in 1956, one in Tanta, one in Asyut, one in El Mahalla el Kubra, and one in Kafr el Dauwar, all large cities. In 1957, family planning services were introduced within six combined health units in rural areas. (20) Initially only those women with at least three living children and with strong cases on health, social and economic grounds could receive treatment in these clinics, but as time went by these restrictions were relaxed. In the same year, the National Commission for Population Problems

became a nongovernmental organization under the name of the "Egyptian Association for Population Studies". The new association continued the work of the Commission, especially in the establishment of new family planning clinics and the introduction of family planning services in existing rural and urban health clinics. By the end of 1965, the number of clinics totalled 98 (49 in both urban and rural areas) largely concentrated in Cairo and Alexandria and their surrounding areas. In 1964 these clinics dealt with 13,390 new cases. (21)

The cause of family planning in Egypt received a stimulus in 1962 when the National Charter called on every citizen to consider planning his family and declared that the increase in population "constitutes the most dangerous obstacle that faces the Egyptian people in their drive towards raising the standard of living in an effective and efficient way." (22) The following year discussions were begun about the possibility of setting up a national programme.

The greatest obstacles to family planning in Egypt are certainly environmental variables, which continue to operate so as to make many children and large families attractive. These include high illiteracy rates, early marriages, an agrarian economy where children are considered economic assets, marriage as social security for women, particularly among the uneducated and non-working, high infant mortality, fear of old age coupled with lack of prospective security, the extended rural family structure, the

idea that a child is a gift of God and fatalism. The picture in Egypt does not differ substantially from that found in other developing countries.

Two private studies undertaken in the 1960's pointed to the great difficulties a birth control programme would face. In a fertility survey undertaken in 1962 in Cairo, Alexandria, El Mahalla el Kubra and the villages of Shuba (Lower Egypt) and Shamaya and Deir el Bersha (Upper Egypt), Rizk<sup>(23)</sup> noted that 17.7 per cent of completed families and 24 per cent of incomplete families in urban areas admitted making an effort to prevent pregnancy, whilst in the rural areas the figure was in both cases 1 per cent. Although the ideal number of births as expressed by wives was smaller than the actual number, and although more than 50 per cent of the wives considered their families too large, it was evident that the vast majority would not or could not limit them to the desired size.<sup>(24)</sup> Ignorance, fear and religious and social taboos were the main reasons given for this state of affairs.

The results of a study undertaken by Shawky in 1964 in a rural community in Sohag (Upper Egypt) and an urban community in Cairo were even more discouraging.<sup>(25)</sup> Of a sample of 735 in the rural community, all were found to be opposed to birth control. Here the social status of women was still strongly linked with fertility, and numerous children were regarded as an economic asset. Moreover, many believed that their religion forbade birth con-

trol and that men of religion opposed it. The hostility to birth control was such that it led Shawky to wonder whether projects by governmental and voluntary bodies aiming at promoting birth control in villages were not a mere waste of money and effort. (26)

In the urban sample, whilst only 15.2 per cent of the mothers showed interest, there was none of the condemnation and absolute refusal which was observed among rural women, and willingness to accept birth control increased with the social class of the family. Upper class families were found to be already practising birth control. Shawky therefore concluded that any national programme would find most success among the middle and lower upper social classes in urban areas. (27)

Apparently faced with a difficult task, the Egyptian National Family Programme was begun in 1965 under the direction of the Supreme Council for Family Planning and administered through an Executive Board. (28) The programme was to be directed at all women with two or three children in the high fertility age ranges, estimated to number approximately two million, well over half of whom were in rural areas. The aim of the programme was to reduce the crude birth rate to 2.1 per cent annually by the end of 1971 (which would have involved reaching over two million women in three years), and to 1.7 per cent annually by 1975. (29) However, the events of 1967 and their economic aftermath greatly disrupted the course of family planning in Egypt, and in 1969 a more realistic aim, to reduce

the crude birth rate consistently over the following ten years, was adopted. (30)

Clinics were rapidly established by the Executive Board for Family Planning, by the National Organization (a body consisting of the Family Planning Associations to be found in each governorate) and by voluntary bodies. By February 1966 there were almost two thousand clinics in operation, and by April 1968 2,631 centres had been established. Of these 255 were in urban centres, 2,337 in rural centres, and 39 were in centres in the frontier Zone.

The large majority of these clinics were organized by the Executive Board, but a significant number (372) belonged to the National Organisation. Until recently it has not been the policy of the Executive Board to create mobile clinics, for it is their belief that between two-thirds and three-quarters of the population live within immediate proximity of a hospital, dispensary or health centre offering family planning services. (31) However, in 1965 the National Organization began experimenting with a mobile unit in Beheira and Sharqiya governorates, (32) and the success of this unit led the Executive Board to introduce mobile units into its clinical programme. (33)

The government programme is run largely by health personnel who perform family planning services as only part of their duties. By the end of 1971 3,200 doctors, 5,600 nurses and midwives and 1,800 social workers were working in family planning clinics. In 1970

the programme gained 206,000 acceptors, an increase of 58,000 over the results of the previous year. The large majority of these (115,000) chose the pill. Cumulative data is published only with respect to I.U.D., and by the end of 1970 200,000 I.U.D.'s had been inserted. Information regarding the numbers of users of family planning is given in Tables 3d and 3e.

TABLE 3d  
Contraceptive Users in Egypt, 1973  
(thousands)

Year	All program methods	I.U.D.'s	Oral contraceptives	Sterilization	Other Program Method
1967	141	51	90	0	0
1968	134	47	87	0	0
1969	148	55	93	0	0
1970	206	57	115	0	34
1971	221	69	87	0	65
1972	237	85	77	0	75
1973	150	75	55	0	20

- Source: (a) Nortman, D., "Programmes de Population et de Planning Familial: Un tour d'horizon", Bulletins de Démographie et de Planning Familial, January, 1972, p.61.
- (b) Ibid., September, 1973, p.96.
- (c) Ibid., June, 1974, p.103.
- (d) Nortman, D., "Population and Family Planning Programs: A factbook", Reports on Population/Family Planning, December, 1974, p.59.

TABLE 3e  
Contraceptive Users in Egypt, 1970  
(thousands)

	All Sources	Government Clinics	Private <sup>(a)</sup> Sector
All Methods	461	291	170 <sup>(b)</sup>
I.U.D.	179	129	50
Oral Contraceptives	262	142	120

(a) Includes National Organization and voluntary bodies.

(b) Estimate for January 1970.

Source: Nortman, D., "Programmes de Population et de Planning Familial. Un tour d'horizon". Bulletins de Démographie et de Planning Familial, January 1972, p.61.

The importance of the private sector, especially with regard to the supply of oral pills to the public, is apparent. However, the work of the National Organization should not be underestimated. In 1968, whilst having only 14.3 per cent of the Nation's Clinics, it accounted for 20.3 per cent of all patients attending family planning centres. Its success seems to result from its willingness to adapt its methods to maintain efficiency. It is the first body in Egypt to supply a "cafeteria service",<sup>(34)</sup> where the patient can choose from a wide variety of contraceptive techniques, a move which is proving very popular. Government clinics at present only offer the I.U.D. and the oral pill.

Whilst family planning has made progress in

Egypt (in 1970 just under 9 per cent of women in the 15-44 age group used one kind of modern contraceptive techniques),<sup>(35)</sup> many problems have yet to be met. Drop-out rates from the programme are very high (almost 40 per cent), and a large proportion of the population is not being reached. This is largely owing to the inaccessibility of centres to a large proportion of the population, a problem accentuated by the poor state of communications in many parts of the country. Over 50 per cent of the villages in Egypt have no family planning centre, and hence many rural women cannot make contact with family planning services.<sup>(36)</sup> There is a definite need for the introduction of mobile clinics to serve the rural areas in which, as previously stated, the majority of the female population to be reached by the programme is found.

There has been, in general, a lack of co-ordination in the execution of the programme. Government centres have been located without regard to the location of those belonging to the National Organization; and whilst use has been made of the mass media to promote family planning, there has been a shortage of social workers to provide motivation in the field and for follow-up work. Use could have been made of the Social Union Local Committees (a nation-wide movement represented in the vast majority of Egyptian villages) for a similar purpose. There is a need for other forms of social legislation to be brought into line with the aims of the family planning programme.

At present large families receive priority in the allocation of housing, and unlimited family allowances provide little incentive to the individual to restrict or even plan his family.<sup>(37)</sup> Although a bill was drawn up in 1970 to increase the legal age of marriage, this bill has yet to be passed.

The national population and family planning policy in Egypt between 1973 and 1982 is intended to strengthen Egyptian Society's ability to confront the population problem, which is a threat to its present as well as to its future development, by endeavouring to achieve an equilibrium between population growth and overall socio-economic development by the year 1982. This is hopefully to be achieved through reducing the birth rate from about 34 per thousand in 1973 to about 24 per thousand in 1982 at the rate of one per thousand annually. The target birth rate, coupled with a death rate of around 13 per thousand, would lead to an annual growth rate of about 11 per thousand.<sup>(38)</sup>

Many factors are on Egypt's side in the struggle for population control. First, the country is of small size relative to India or Pakistan, where tremendous efforts have been made over many years to bring radical reductions in birth rates. Second, the national programme was started at a time when the country was rapidly changing its social and economic system, a process which continues to be reflected in mass education, industrialization, urbanization, rising expectations and the

emancipation of women with an increasing tendency for them to work outside the homes. Third, an extensive network of existing socio-medical services covers most of the country. Material, child and social services are scattered throughout the country, a fact which makes the administrative task of large-scale dispersion of family planning services relatively easy. Fourth, there are numerous doctors and paramedical and social workers involved or ready to be involved in the programme. Fifth, sustained interest and active participation is evident on the part of specialists, demographers, University professors and gynaecologists. Sixth, the programme began at a time when more reliable and acceptable modern contraceptives had been developed. Egypt, then, does not have to pass through the discouraging phases where only less effective birth control methods could be used. Seventh, Egypt could easily utilize international aid generously offered in the field of family planning, if it so desired.

All such factors enhance the programme's chance of success as much as environmental and traditional cultural factors work against it. Modern social science certainly has a most important role to play. It should develop techniques to create accelerated and guided change in attitudes and practices amidst adverse conditions of life. People of the developing countries cannot continue to have many children until radical economic improvement takes place in their respective countries.

### 3.3.2 Fertility Projections

Fertility projection was made by the Central Agency for Public Mobilisation and Statistics in 1973 under three alternative assumptions.<sup>(39)</sup> (See Tables 3.6 and 3.7). It seems most likely that the future fertility levels in Egypt will be lower than that observed for 1965. For the high projection the gross reproduction rate is assumed to decline slightly, by about half per cent yearly. The value of the GRR in 2000 is expected to be 2.54, compared with 2.95 at 1965. In the medium projection the assumed rate of decline in the GRR is double that in the high projection, so the GRR would decline to 2.17 by 2000. A much faster rate of decline in the GRR is assumed to be 2 per cent during the first ten years, 1.5 per cent during the next ten years period and 1 per cent during the last ten years, thus it would decline to 1.84 by 2000.

### 3.4 Spatial Patterns

#### 3.4.1 Urban-Rural Differences

That urban people are less fertile than rural is one of the widely observed and widely-discussed phenomena in the field of fertility. It has often been suggested that urbanization is closely connected with the decline in fertility.<sup>(40)</sup> The evidence that families are larger among rural than urban populations has been cited in support of this contention. Many social scientists believe that modern large cities have provided a partic-

ularly favourable environment for the development of attitudes motivating family planning and the means to implement that motivation. Family life in urban areas is less cohesive and children are not regarded as an economic asset in the city as they are in the villages.

The process of urbanization in developing countries has not been quite similar to the corresponding process in the currently developed countries. One major difference is in the way of life of the new urban population. It has been suggested that in developing countries, geographic mobility from the rural to the urban does not bring about any appreciable social mobility and the way of life of the new arrivals in the city remains 'rural' for a long time.<sup>(41)</sup>

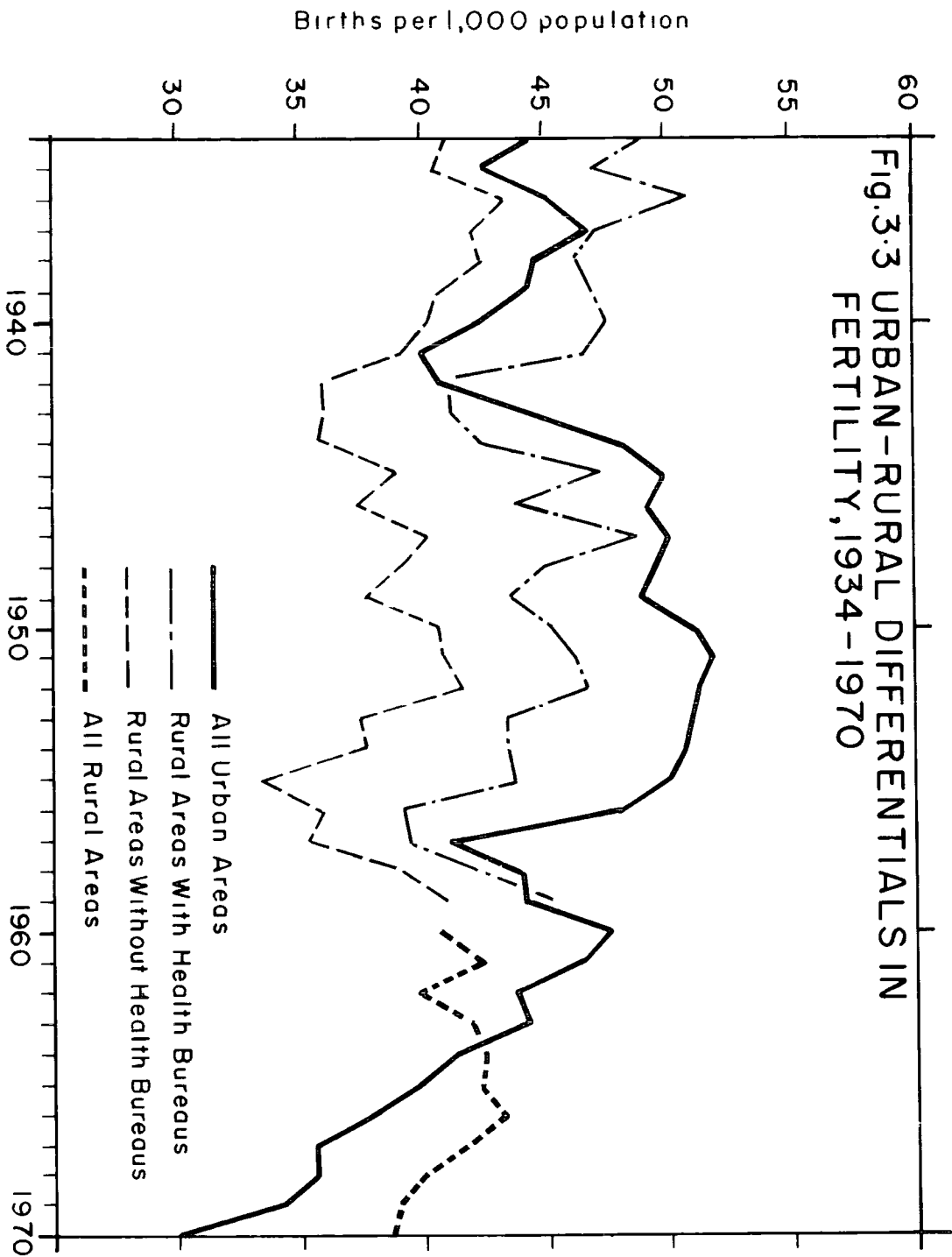
The 1947 population census in Egypt was the first to include data on reproduction by age of mother and duration of marriage. El-Badry attempted to utilize these results as well as those offered by the vital statistics to investigate whether there are any fertility differentials between urban and rural populations.<sup>(42)</sup> One of the major findings of his study was that at that stage there was no evidence to support the hypothesis of lower fertility in urban than in rural Egypt. El-Badry in another study utilized 1960 population census data and found that urban-rural fertility differences in 1960 were strikingly similar to those of 1947.<sup>(43)</sup>

It was found in 1960, that the age-sex adjusted birth

rate in urban areas was 46.6 against 47.2 for rural areas.<sup>(44)</sup> The slight difference of only 0.6 births per thousand perhaps measured correctly the nature of urban-rural differences in the country. It is clear, however, from Table 3.8 that in the late 1960's birth rates were higher in rural areas than in urban areas.

In comparing urban and rural birth rates, it is necessary to distinguish between rural areas without health and/or vital registration bureaux and rural areas with such bureaux where registration of vital events is more complete. Since 1934, the birth rates reported for rural areas with health bureaux have been consistently higher than those reported for rural areas without bureaux. The trend for both areas, shown in Figure 3.3, describes the characteristic variations in birth rates over a period of time. From relatively high levels in 1930's, the rates dropped briefly during the war years, especially in 1942 and 1943, and then persisted at a high level with some annual fluctuations through the 1950's, except for another brief depression in the mid-fifties. The reported rates since 1960 combine all rural areas and show a downward trend with some fluctuations from year to year.

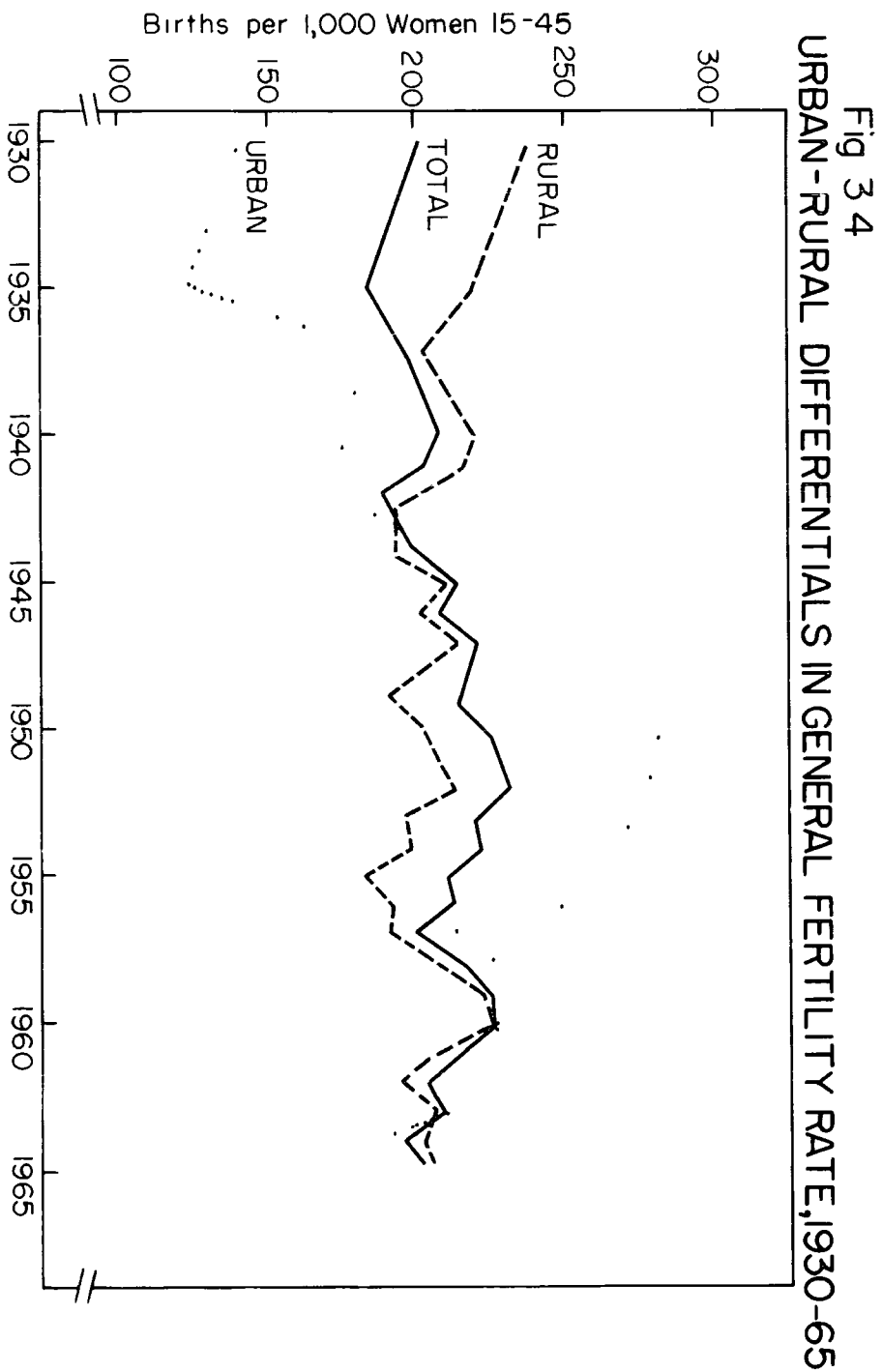
The urban rates are generally lower than those reported for rural areas with health bureaux but higher than those reported for other rural areas. As shown in the figure, the urban rates rose well above rural rates in the early 1940's and reached a peak of 51.8 births per thousand in 1951, after which they levelled off somewhat. Birth



rates reported for urban areas since 1960 have shown a steady decline, dropping below the rural rates again in 1964 to 35.5 births per thousand in 1967 and 30.0 in 1970.

The urban general fertility rates are lower than rural rates between 1930 and 1942, as shown in Figure 3.4. After 1942 the curve representing urban rates crosses the curve representing rural rates with the summit around 1950. The urban general fertility rates then declined very slowly until 1957, as did the crude birth rates, and it was not until 1963 that the general fertility rate for urban areas again fell below that for rural areas. Throughout the period encompassed by the figure, the rural general fertility rate demonstrated far greater stability than the urban rate, fluctuating around 200 births per thousand women.

The peak age of fertility in urban areas is different from that in rural areas as the maximum fertility rate is in the age group 30-34 years in rural areas, while it is in the age group 25-29 years in urban areas (Table 3.9). In urban areas women seem to have their children earlier and the ages below 34 years are responsible for about 78 per cent of the total live births in urban areas, while mothers in these ages in rural areas are responsible for only 69 per cent of the births, which means that rural women continue to give birth after this age. This may be due to differentials in the educational status between urban and rural areas. At the time of



the 1966 census 71 per cent of all married women in these areas were illiterate, but the corresponding percentage for rural women was 96 per cent. Moreover most working women in urban areas go out to work far from their homes and this causes difficulties in child-rearing. Some rural women take part in the agricultural work on their husband's holdings, and child-rearing in these circumstances presents less difficulty. There is nothing, then, to prevent a continuous series of births. People are more convinced, as a consequence, of the value of family planning in urban areas than in rural areas.

The level of the specific birth rates in rural areas is higher than those in urban areas on the whole, except for the age group under 20 years; in this connection the percentage of married women was 35 per cent in rural areas at the time of the 1966 census, while the corresponding percentage for urban areas was only 20 per cent. Moreover the average age at first marriage during 1969 was 19 years in rural areas, while in urban areas it was about 22 years. This may be due to under-registration in rural areas.

#### 3.4.2 Governorate Differentials

There is considerable evidence to show that fertility is higher in Lower Egypt than in Middle and Upper Egypt (see Table 3f). In 1960 the child-woman ratio for children aged 0-4 in Lower Egypt was higher by 56 or 7.6 per cent than that of Middle Egypt, and by 14 or 1.8

per cent than that of Upper Egypt. The child-woman ratio based on children aged 5-9 showed the same type of geographic variations, where Lower Egypt was higher than Middle Egypt by 146 or 21.4 per cent, and by 96 or 13.1 per cent when compared with Upper Egypt. The adjusted birth rate and general fertility rate showed the same variation between Lower Egypt on the one hand, and the other two regions on the other. The adjusted birth rate in Lower Egypt was higher by 10.5 per cent when compared with Middle Egypt and by 19.4 per cent when compared with Upper Egypt. The corresponding percentage differences when the general fertility rate is used as the index were 10.6 per cent and 30.9 per cent respectively.

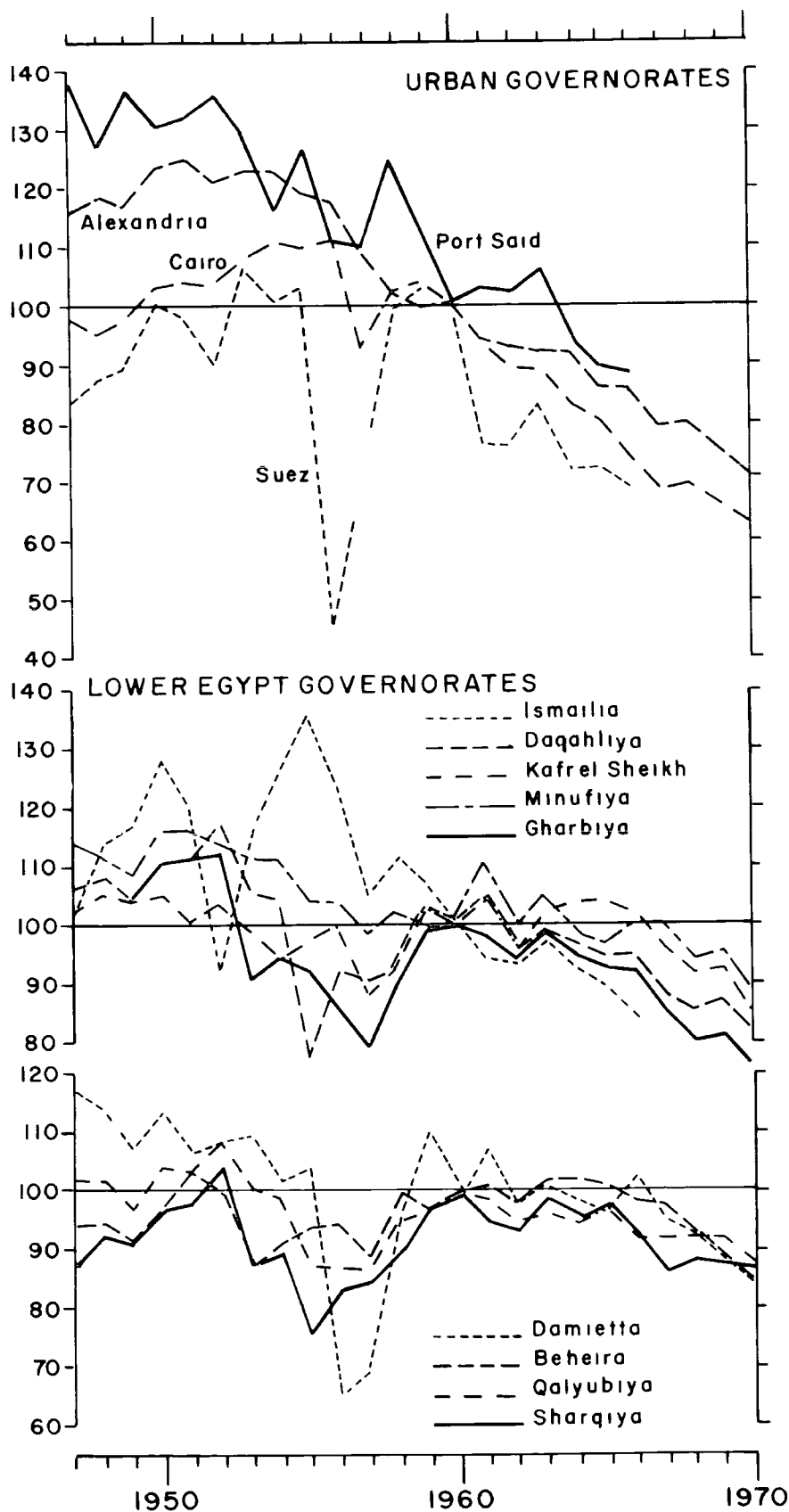
TABLE 3f

Geographic Variations in Fertility by Regions, 1960

Region	Child-woman Ratio for Children aged		Age-Specific adjusted birth rate	General Fertility Rate
	0-4	5-9		
Lower Egypt	792	829	49.3	199
Middle Egypt	736	683	44.6	180
Upper Egypt	778	733	41.3	152

The series of annual crude birth rates is available for each of the Egyptian governorates for the years 1947-70 (see Tables 3.10 and 3.11). The graphs in Figure 3.5 are based on the birth rate data indexed to equal 100 in 1960; these graphs make possible a comparison of the trends between 1947 and 1970 for the various groups of

Fig 3 5 CRUDE BIRTH RATES BY GOVERNORATE, 1947-1970  
(indexed to 1960)



UPPER EGYPT GOVERNORATES

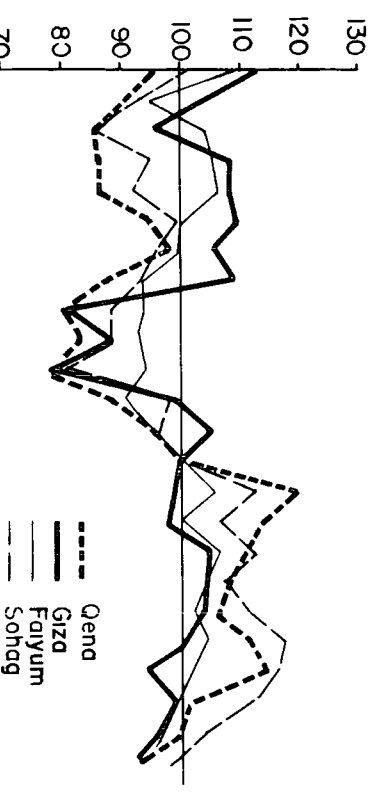
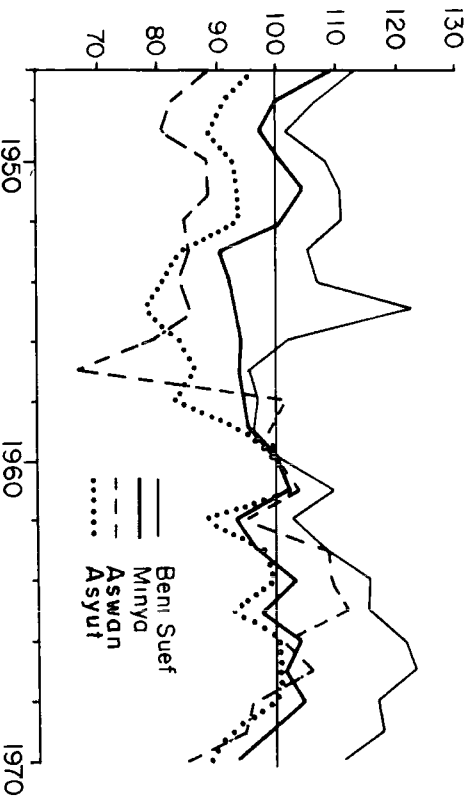
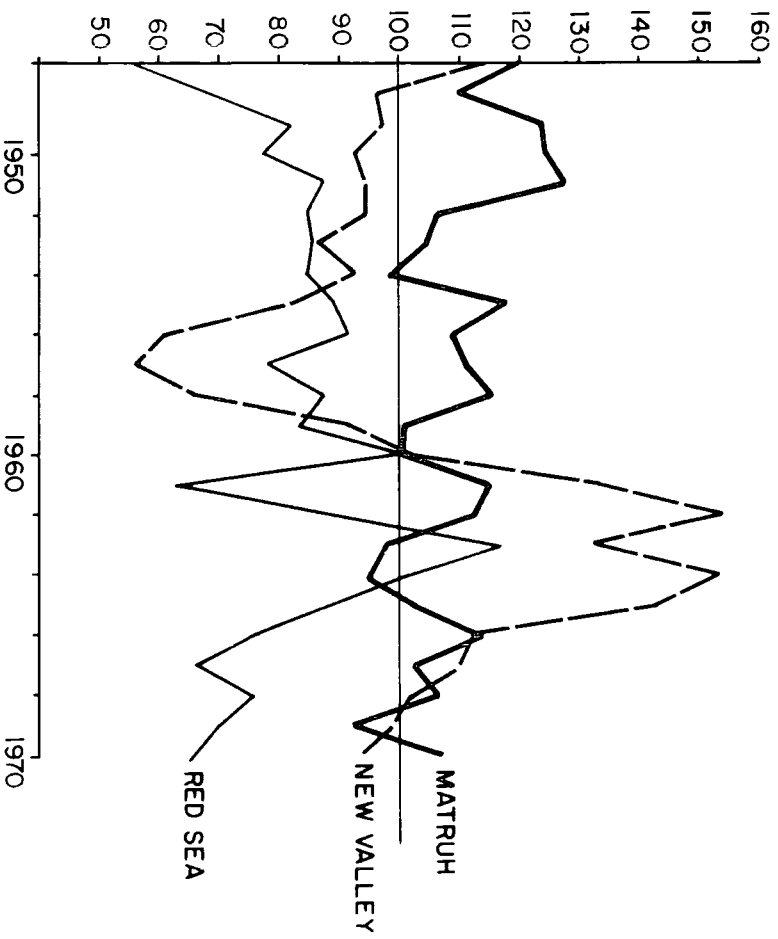


Fig. 3.5

FRONTIER GOVERNORATES



governorates, namely the urban, Lower Egypt, Upper Egypt and frontier governorates.

In almost every governorate, the birth rates were high until 1960's, when they turned downward. Fluctuations in birth rates have been especially violent in the urban and booming frontier governorates, including Cairo, Alexandria, Port Said and Suez, as well as in the New Valley, Red Sea and Matruh. In Lower Egypt, too, fluctuations have generally been violent, especially in Damietta, Qalyubiya and Daqahliya. In Upper Egypt, fluctuations have been more moderate, except in Aswan which is one of the booming governorates where higher birth rates are characteristic as in the urban governorates. In Lower Egypt the highest levels have been reported for Ismailia, Minufiya, Damietta and Daqahliya; the lowest for Beheira. In Upper Egypt, the highest levels have been reported for Giza and Faiyum; the lowest for Qena. Exceptionally high and sudden upward fluctuations in the birth rate have been reported for certain governorates. Peaks in excess of 60 births per thousand population have been registered by governorates with great population mobility, such as New Valley, Ismailia, Suez and Sinai. This is probably due to violent fluctuations in population movements such that in the years when birth rates in excess of 60 per thousand population were reported, the births of in-migrants were included in the numerator of the rate but the in-migrant population itself was not fully accounted for in the denominator, thus inflating the rate. Also, many

of the in-migrants are young couples of high fertility potential and thus may make a greater than average contribution to the numerator (the number of births).

Since 1960 the most decisive fertility declines are apparent for the urban governorates. The decline in birth rates for the Lower Egypt governorates has been generally later and less dramatic than the decline in the urban governorates. In contrast, there has been great variation among the birth rates reported for Upper Egypt governorates and at least moderate increases in the rates for each governorate after 1960; Beni Suef in particular had a rather steady upward trend between 1960 and 1967.

The governorates which prior to 1960 were characterized by excessively high fertility levels were the ones which showed the most unmistakable declines by 1967. In contrast, the governorates which had once registered relatively low fertility were demonstrating unprecedentedly high fertility levels. Thus while the urban governorates experienced considerable declines, as in Cairo, where the 1970 birth rate was 62.8 per cent of its 1960 birth rate, and Alexandria, where the 1970 rate was 70.4 per cent of the 1960 rate, the governorates of Lower Egypt showed only modest falls, and those of Upper Egypt showed increases in the birth rate. In Upper Egypt, except for Giza which is greatly influenced by Cairo, all governorates had increases in the birth rate above their

1960 levels. For example, Beni Suef's birth rate in 1967 was 122.3 per cent of its 1960 rate; and Sohag, where the 1967 rate was 116.1 per cent of the 1960 rate, as well as in Qena's rate, though here below the level of 40 births per thousand population, jumped from 33.4 in 1960 to 38.1 in 1967. It must be emphasized that had the Upper Egyptian governorates recorded declines of the same order as the urban ones, the downward trend for all Egypt would have been much more pronounced. Fortunately, however, the governorates with the highest population counts and densities, namely the urban governorates, also showed the largest and most conclusive declines in fertility.

The general fertility rates in the governorates in the census years 1927-1966 showed a marked increase especially in the period from 1947 to 1960 (see Table 3.12). Fertility rates rose by 1960 to the maximum limit and are not expected to show a further increase in the future. In 1966, the general fertility rates for Cairo, Alexandria, Port Said and Qena governorates were less than the national rate. In addition, 1966 rates for urban governorates in general were lower than they were in 1947 and 1960. Damietta governorate had the highest rate in 1966, while Cairo had the lowest rate.

It is evident from Table 3.13 that there is a declining trend in the total fertility rate in all governorates during the period 1966-69 except in Daqahliya and Sharqiya. This last could be due to the increasing number

of migrants from the Canal governorates flowing into these governorates after the 1967 war, their births being registered among the births of these governorates without any adjustment having been made to the number of estimated females in the reproductive period, because of the unavailability of data about the exact number of these migrants.

It is too early to judge whether the downward trend in fertility is a continuous trend caused by social and economic factors awakening the consciousness of family planning, or a temporary trend affected by the war, which will disappear after its end.

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## CHAPTER FOUR

### PATTERNS OF MORTALITY

#### 4.1 Mortality Trends

Until recently the death rate in Egypt was among the highest in the world, varying from 24.9 to 28.8 per thousand in the period between 1920 and 1940, and from 25.7 to 28.3 per thousand from 1940-1945. This rate showed no sign of significant decrease until after the Second World War, when from 1945 to 1947 it dropped from 27.7 to 21.4 per thousand. By 1957 it had fallen to 17.8 per thousand, by 1963 to 15.5 per thousand and by 1970 to only 15.1 per thousand, that is, 55 per cent of its 1945 value. The high peak in 1918-1919 represented the effect of the influenza epidemic as shown in Figure 4.1. These trends are seen in the reported figures and the adjusted figures (Tables 4.1 and 4a).

This decline in mortality was largely due to improved sanitation and housing, better food and water supplies, rising standards of living and working conditions, and the improvement in medical services and public health, particularly in the field of infant care.

During the last two decades, great efforts have been devoted to achieving a higher standard of living. The rise in the national income has been of prime significance in improving health conditions. The national income in 1965/66 was more than 2.5 times higher than in 1952/53. This economic progress made possible advances in public

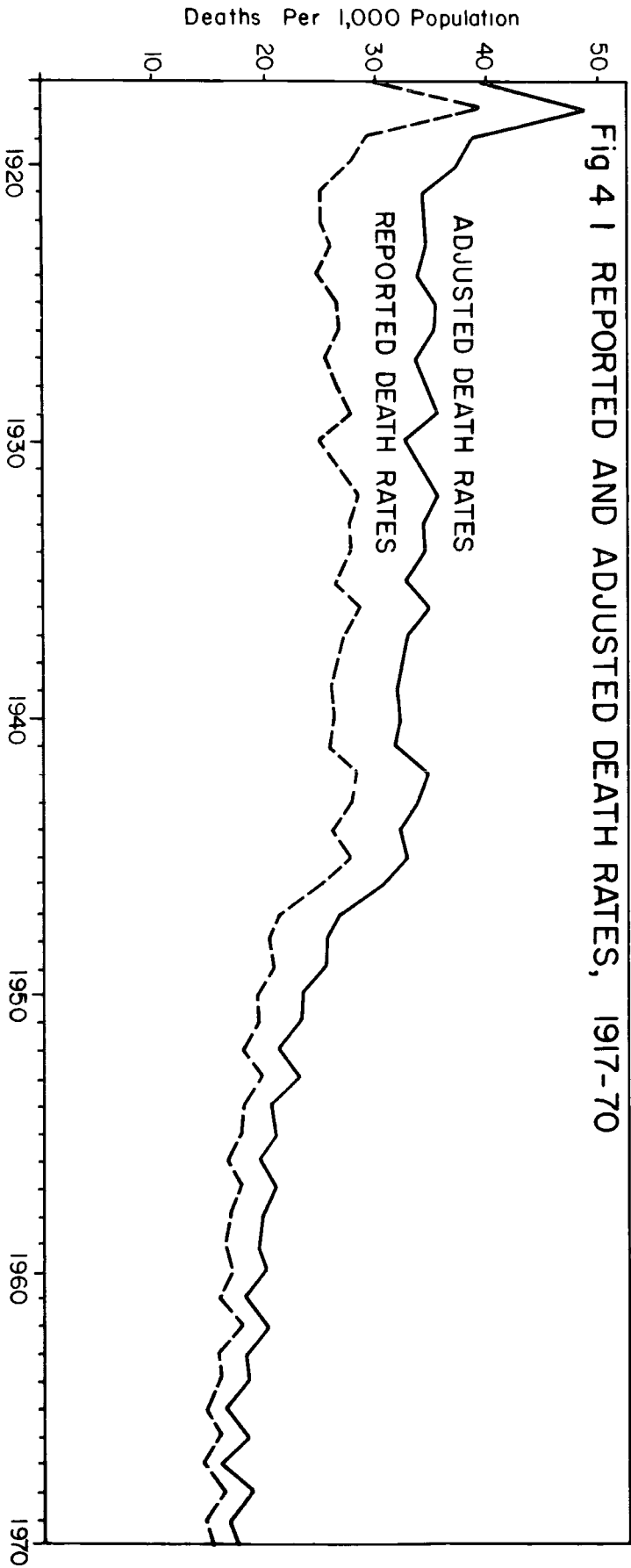


TABLE 4a

Reported and Adjusted Crude Death Rates, 1917 - 70

Year	Crude Death Rate		Year	Crude Death Rate	
	Reported	Adjusted		Reported	Adjusted
1917	29.4	38.9	1944	26.0	32.1
18	39.6	49.0	45	27.7	32.6
19	29.4	38.8	46	25.0	30.6
1920	28.0	37.4	47	21.4	26.8
21	25.0	34.3	48	20.4	25.4
22	25.1	34.3	49	20.6	25.3
23	25.8	34.9	1950	19.1	23.4
24	24.9	33.9	51	19.2	23.1
1925	26.5	35.4	52	17.8	21.2
26	26.7	35.4	53	19.6	23.0
27	25.2	33.7	54	17.9	20.3
28	26.3	34.5	1955	17.6	20.8
29	27.6	35.5	56	16.4	19.4
1930	24.9	32.6	57	17.8	20.8
31	26.6	34.0	58	16.6	19.6
32	28.5	35.5	59	16.3	19.1
33	27.5	34.2	1960	16.9	19.9
34	27.8	34.2	61	15.8	18.4
1935	26.4	32.6	62	17.9	20.0
36	28.8	34.8	63	15.5	18.1
37	27.1	32.9	64	15.7	18.3
38	26.3	32.1	1965	14.1	16.4
39	25.9	31.8	66	15.9	18.4
1940	26.3	32.1	67	14.2	15.8
41	25.7	31.8	68	16.1	18.6
42	28.3	34.5	69	14.5	16.6
43	27.7	33.9	1970	15.1	17.3

- Source: (a) Department of Statistics and Census, Vital Statistics, Vol.2, Cairo, 1959, pp.2-3.
- (b) C.A.P.M.S., Vital Statistics Since 1930 for the A.R.E., Cairo, 1973, pp.93-96.
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health, medical and social services, and free education.

There has been a relative increase in the number of doctors. The average number of inhabitants per physician, which was 4,265 in 1950, was reduced to about half that figure by 1960.<sup>(1)</sup> More than one thousand physicians have graduated annually from schools of medicine in the last few years.<sup>(2)</sup> The number of beds in hospitals has risen to over 73,000, an increase of 150 per cent during the period 1952-72.<sup>(3)</sup> There are now 2.2 beds per thousand citizens. Moreover patients in government hospitals are supplied with the necessary medicines free of charge, while other citizens can also get them cheaply and easily.

The increasing family income which resulted from the rise in workers' wages has made possible better standards of nutrition. The per capita consumption of food is steadily increasing: in 1951/52 the per capita daily consumption of food totalled 933 g., by 1969/70 it had increased to 1,301g. The per capita daily food supply of proteins increased from 68.5 g. in 1951/52 to 85.1g. in 1969/70. The per capita consumption of fats increased from 34.7 g. per day in 1951/52 to 45.4g. in 1969/70. The per capita intake of calories per day was 2,324 in 1951/52, and had increased to 2,963 calories by 1969/70.<sup>(4)</sup>

The state has enacted the legislation needed to improve the levels of public health. Egyptian laws provide solid protection for the interests of working mothers

and children. Provision is made for compulsory paid leave of 30 days after childbirth. Immunization against infectious childhood diseases has been made compulsory.

Each city is provided with a public hospital where free medical services are available, and in addition there are maternity and infant care centres. The number of children born in maternity and infant care centres rises yearly; these births amounted to 214,000 in 1969, that is, about 1.7 times the number in 1952.<sup>(5)</sup> Specialized doctors supervise all deliveries at private hospitals. Most midwives are now well trained and all are obliged to be registered by the state.

Public water supplies have been provided for most of the villages, so that contamination is avoided. Maternity and infant care units have been widely established in rural areas within health and social centres of various kinds. The total number of maternity and infant care units in rural areas, which was 574 in 1959/60 rose threefold to 1,743 in 1968/69 (Table 4b) and the Ministry of Health continues to develop various rural health projects.

For the period 1965/70, the crude death rate for Egypt was about 15 per thousand, only slightly higher than that for the world as a whole (14 per thousand),<sup>(6)</sup> but well below the African average (21 per thousand).<sup>(7)</sup>

TABLE 4b

Sections for Maternity and Infant Care  
in Rural Areas, 1959/60 - 1968/69

	59/ 60	60/ 61	61/ 62	62/ 63	63/ 64	64/ 65	65/ 66	66/ 67	67/ 68	68/ 69
In health centres	256	260	264	264	263	262	264	262	261	257
In combined centres	213	234	249	263	283	298	305	310	313	318
In social centres	105	109	122	127	126	109	101	96	93	56
In rural health centres	-	-	4	199	399	646	862	981	1052	1112
Total	574	603	639	853	1071	1315	1532	1649	1719	1743

Source: C.A.P.M.S., "Trends of Infant Mortality Rates by Sex and Age, Urban and Rural; Arab Republic of Egypt", Population Researches and Studies, Vol.1, No.1, Cairo, 1971, p.20

The mortality level in Egypt is still quite high compared with Western standards, despite the considerable decrease that has taken place since the end of World War II, but the figures indicate that Egypt is now one of the group of countries whose death rate is dropping without being accompanied by a corresponding decline in the birth rate, with a consequent steady increase of the rate of population growth.

#### 4.2 Infant Mortality

A main contributor to the overall high level of the

death rate in Egypt is infant mortality.<sup>(8)</sup> The infant mortality rate in Egypt has been extremely high, representing close to one-third of mortality at all ages. Despite the considerable decline from 186 per thousand in 1917-21 to 122 per thousand in 1966-70 (Table 4.2 and Figure 4.2), infant mortality remains unnecessarily high and in the 1960's was still responsible for about 33 per cent of all deaths. There is considerable scope for greater improvement in infant mortality rates which are still high when compared with those of modern industrial nations.

The declining trend in neonatal mortality rates is not typically parallel with postneonatal mortality rates. In some years neonatal rates increase while postneonatal rates decrease, and the reverse may be the case in other years as shown in Figure 4.3. This can be explained by the fact that neonatal mortality is affected more directly by biological factors, while postneonatal mortality is closely related to environmental, social, medical and other exogenous factors.<sup>(9)</sup>

As shown in Table 4c and Figure 4.4, neonatal mortality rates for both males and females residing in urban areas have declined, while in rural areas a substantial increase has occurred. The average rate for urban areas for the years 1966-69 declined by 14 per cent from its level in 1950-53. By contrast there has been a remarkable rise in rates for the rural areas, by 44 per cent for males and 37 per cent for females. It thus appears

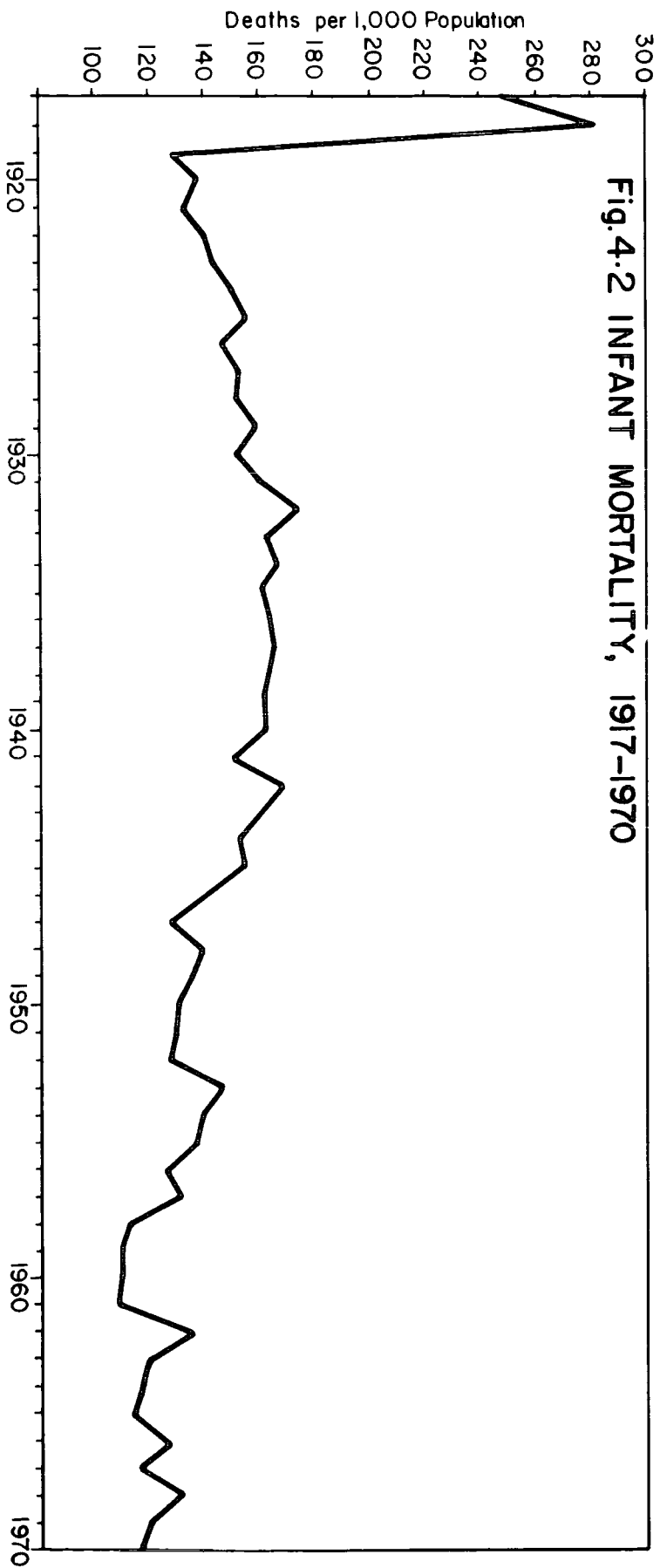
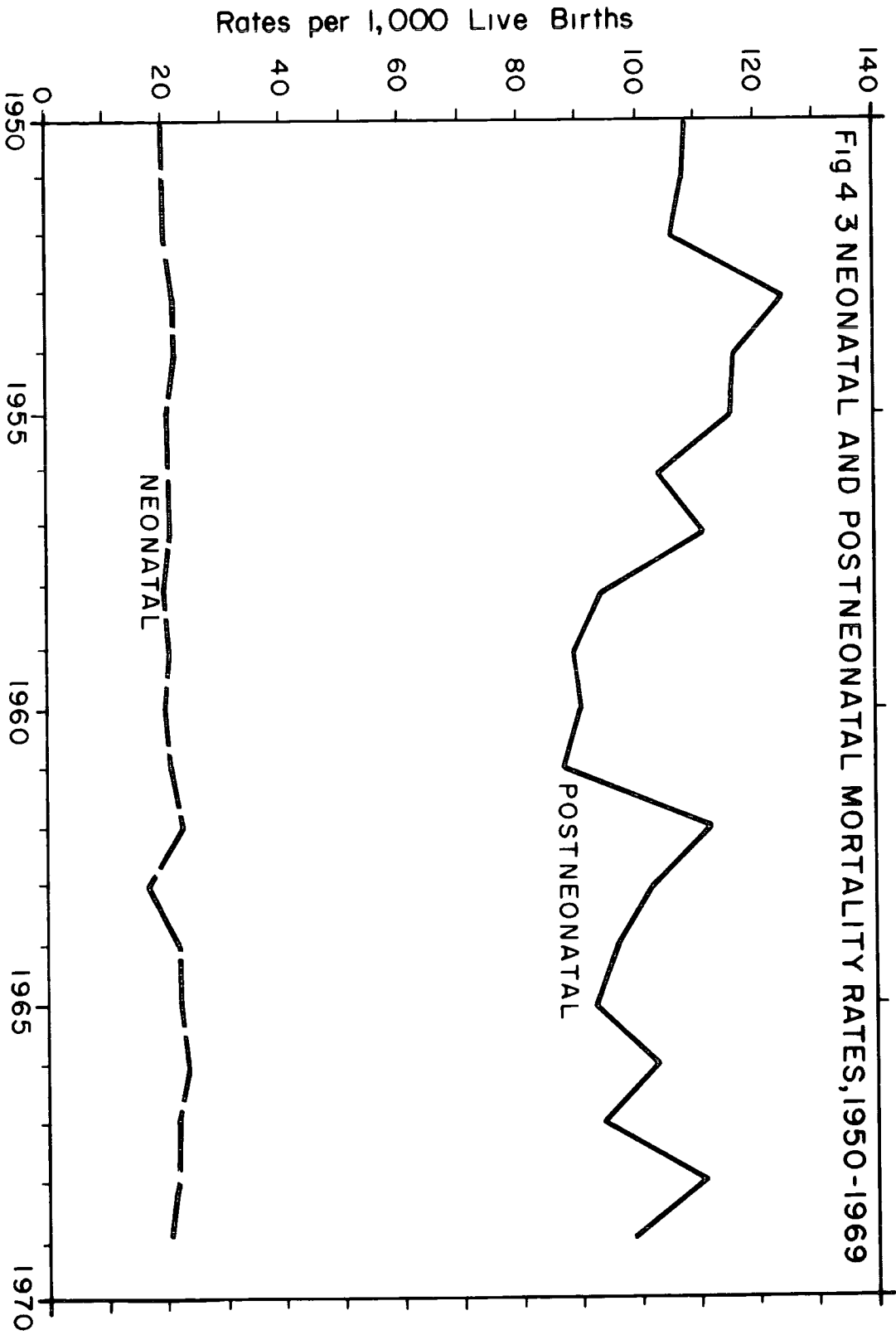


Fig. 4.2 INFANT MORTALITY, 1917-1970



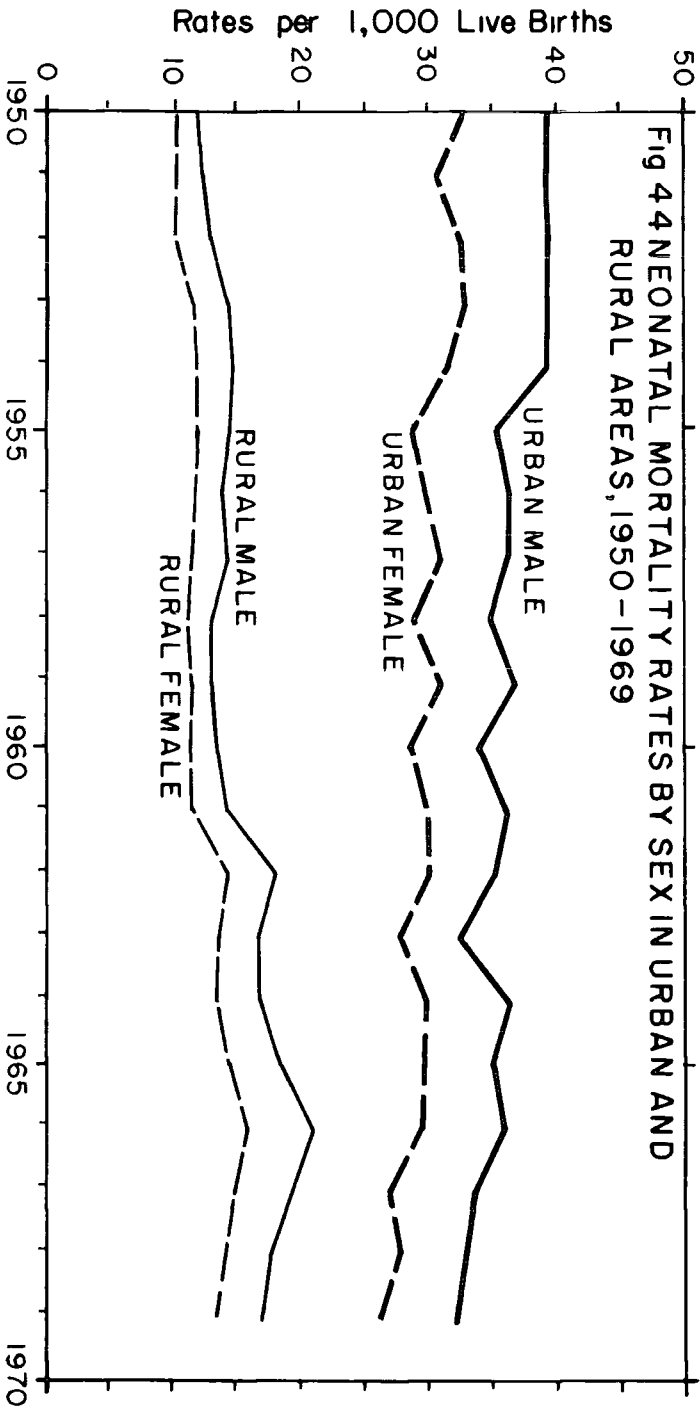


Fig 44 NEONATAL MORTALITY RATES BY SEX IN URBAN AND RURAL AREAS, 1950-1969

that the neonatal mortality rates in rural areas have not reflected advances in medical and social knowledge.

TABLE 4c

Neonatal Mortality Rates by Sex, for  
Urban and Rural Areas, Four Year Averages, 1950-69

(Rates per 1000 live births)

	1950-53	1954-57	1958-61	1962-65	1966-69
Urban: Male	39.4	36.8	35.4	34.7	33.7
Female	31.8	30.2	29.5	29.0	27.3
Rural Male	12.9	15.5	13.3	17.3	18.6
Female	10.6	11.8	11.4	13.9	14.5

However, the incidence of under-registration in rural areas is evidenced by the suspiciously low neonatal mortality rates in comparison with those for urban areas. Two factors influence recorded mortality rates, in opposite directions: the development in vital registration, and improvements in health conditions. The rise in neonatal mortality rates in rural areas as a result of the first factor may have exceeded the reduction of rates caused by the second.

The gap between neonatal mortality rates in urban and rural areas is narrowing, as shown in Figure 4.4. The difference between urban and rural rates which was in 1950 27.5 per thousand for males and 22.6 per thousand for females, declined to 15.4 per thousand and 12.7 per thousand respectively by 1969. The urban rate, which was more than three times the rural rate in 1950, was less

than twice this rate in 1969 (see Table 4.3).

Both early and late neonatal mortality rates appear to be sensitive to developments in registration, and maternity and infant care services. Mortality rates for children under one day old are extremely low compared with rates for developed countries. Table 4d presents neonatal mortality rates by sex and age in Egypt compared with the United States and England and Wales in 1962. It shows that the infant mortality rate for children under one day old in the United States was more than eleven times the rate in Egypt. If one considers that most births in the United States take place in hospital, while in Egypt, midwives deliver a large proportion of babies at home, then it is perhaps reasonable to assume that the best explanation for the very low infant mortality rate in the first day of life in Egypt is high under-registration and lack of experience in noting evidence of life in the newly born child before its actual death.

TABLE 4d

Neonatal Mortality Rates by Age and Sex,  
Egypt, United States and England and Wales, 1962  
(Rates per 1000 live births)

Age	Egypt		United States		England	
	M.	F.	M.	F.	M.	F.
Under 1 day	0.9	0.8	11.7	8.9	8.4	6.3
1 - 6 days	9.4	7.1	7.1	5.1	6.5	4.6
7 - 27 days	14.3	12.7	2.1	1.7	2.3	1.9
All under 28 days	24.6	20.6	20.9	15.7	17.2	12.8

Source: Ibid., p.23

Four year averages were computed for male and female postneonatal mortality rates in urban and rural areas (Table 4e). The average rate declined continuously till it reached its minimum in the period 1958-61. The trend was then reversed in rural areas while the declining trend continued in urban areas, with the exception of the years 1962-65, when the average rose slightly. As shown in Table 4.4 and Figure 4.5, the postneonatal mortality rate is higher in urban than in rural areas, but the difference between the rates is decreasing, probably because of higher under-registration in rural areas. Postneonatal mortality rates for females are higher than those for males. This is evident in urban and rural areas for the period 1950-69, with the exception of rural rates for the years 1950-52. The very high sex ratio at birth in rural areas (Table 4f and Figure 4.6) may reflect higher under-registration of live births for females than for males and consequently the denominator in the rates is considerably distorted.

It is common knowledge that rural under-registration of neonatal and postneonatal mortality is much higher than urban under-registration. This is evidenced, too, by the sex ratios at birth which are much higher in rural than urban areas. Under-registration of deaths during the first day of life seems also to be very high. Moreover, the deficiency in registration of female births may exceed the deficiency in registration of their deaths, particularly when death occurs at an advanced age. It

TABLE 4e

Postneonatal Mortality Rates by Sex,  
for Urban and Rural Areas, Four Year Averages, 1950-69.

(Rates per 100 live births)

		1950-53	1954-57	1958-61	1962-65	1966-69
Urban	Male	133.3	125.4	105.5	108.0	101.8
	Female	141.8	139.3	119.3	123.0	116.9
Rural	Male	97.8	93.9	71.7	83.1	89.9
	Female	95.2	99.0	81.3	94.2	104.4

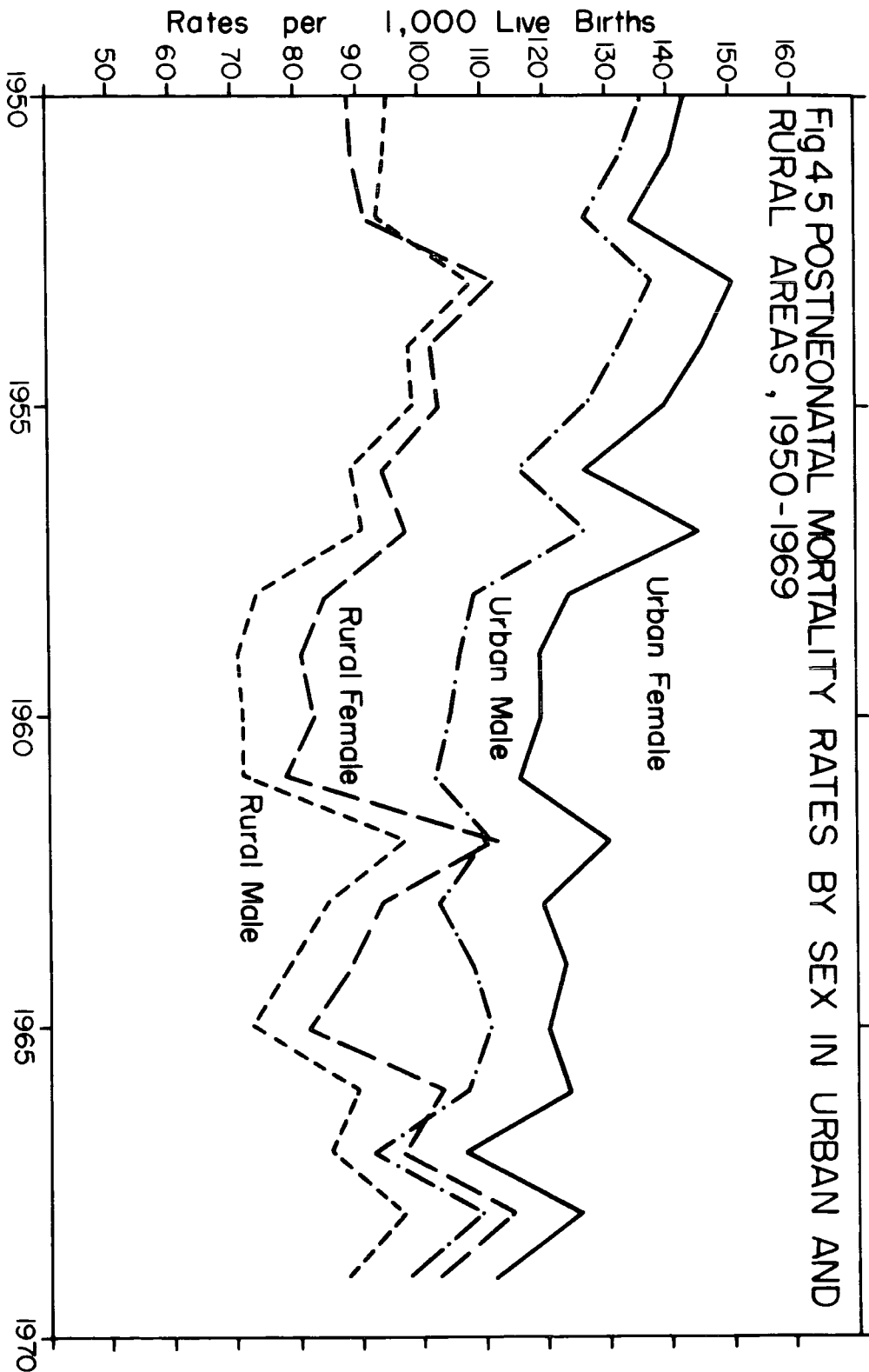
TABLE 4f

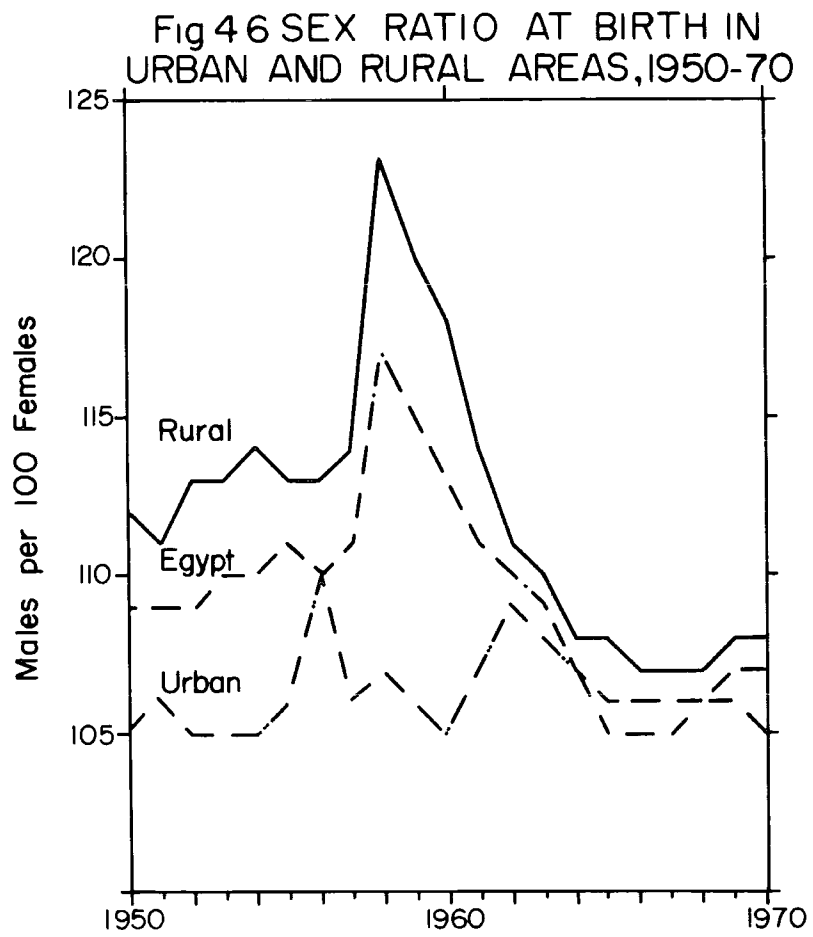
Sex Ratio at Birth by Urban-Rural Residence,  
Four Year Averages, 1950-69.

(Males per 100 Females)

Period	All Egypt	Urban	Rural
1950 - 1953	109.5	105.3	112.2
1954 - 1957	110.3	106.8	113.7
1958 - 1961	113.7	106.0	119.0
1962 - 1965	108.3	107.1	109.2
1966 - 1969	106.4	105.3	107.1

Source: Ibid., p.31





may be for this reason that female postneonatal mortality rates exceed male rates. While infant mortality for females is almost invariably less than that for males, Egypt was among the very few countries recently reporting higher infant mortality for females than for males.<sup>(10)</sup>

Low socio-economic status, particularly low-income earnings, tends generally to be the "primary cause" of excess mortality.<sup>(11)</sup> A sample survey made by Labib<sup>(12)</sup> in Minshat el Bakary, a village near the pyramids of Giza, during February 1967, found that deaths of children occurred more often in families where the husbands were not working (lowest income) and this reduced greatly the number of living children in those families. The same occurred but to a less pronounced extent in the families of labourers and was steadily less evident the larger the family income as indicated by the husband's occupation. The husband's education was also a factor, as shown clearly in families where the husband was in a clerical job with a relatively good income and higher education. Child deaths in such families were limited, and the number of living children consequently greater.

#### 4.3 Trends in Death Rates by Age Groups

During the period 1937-70 there has been an obvious and gradual drop in the death rates among the different age groups, especially in the younger age group and particularly among infants, resulting from increased medical care, preventive hygiene and improved nutrition for mothers and children. The highest absolute decline occurred among

males aged 0-5 and 70 and over; the rate for the former dropped from 120.0 in 1937 to 45.0 per thousand in 1970, and for the latter from 134.7 in 1937 to 102.8 per thousand in 1965. For females the absolute drop for those two age groups was 55.1 and 35.9 points per thousand, respectively. Despite the absolute drop in mortality rates for these groups, they remain higher than any other group (see Table 4.5).

A very remarkable decline in death rates occurred in the age group 0-4 during the period 1960-69. The average death rate, which was 60.74 per thousand for the years 1960-64 declined to 54.03 per thousand for the years 1965-69. The period 1960-64 was characterised by an average death rate for the age group 5-9 of 2.09 per thousand, followed by a decline to 1.87 per thousand in the period 1965-69, showing a decrease of 10.5 per cent. For the age group 10-14 the average death rates were reduced by over 8 per cent between 1960 and 1969. They were 1.82 per thousand and 1.67 per thousand in the periods 1960-64 and 1965-69, respectively. On the other hand, the death rates for the age group 15-39 rose slightly, ranging between 2.5 and 2.8 per thousand during the decade 1960-69, while the death rates for the age group 40-44 ranged between 4.6 and 5.5 per thousand for the same period. In 1969, the death rates reached 7.5, 10.9, 17.6 and 23.2 per thousand for the age groups 45-49, 50-54, 55-59 and 60-64, respectively. For the age group 65 and over there was a remarkable decline in the death rate, from 115.5 per thousand in

1960 to 98.7 per thousand in 1969 (see Tables 4g, 4h and 4i).

The adjusted expectations of life calculated for the population of Egypt in the census years 1947, 1960 and 1966 indicate a significant increase in life expectancy at birth for both males and females (Table 4.6). In 1947, the expectation of life at birth was 39.6 years for males and 42.5 for females; in 1966, 48.5 years for males and 51.3 years for females. As elsewhere, the longevity record for females has always been better than that for males.

#### 4.4 Spatial Patterns

The reported annual number of deaths and crude death rates for each governorate since 1947 are given in Tables 4.7 and 4.8. These reported rates indicate that the governorates of Minufiya, Faiyum, Qalyubiya, Beni Suef and New Valley had high death rates during the period 1947-70; while Qena, Red Sea and Matruh governorates had low rates during the same period. The frontier governorates (except New Valley) also had low rates; this phenomenon may be the result either of under-reporting or of the type of people who settle in these areas (usually young adults). The high rates in the urban governorates, with the exception of Fort Said, reflect the better reporting of deaths. The high rates in most of the Upper Egypt governorates may be a reflection of genuinely higher risks of mortality owing to the substantial rural component in the population and generally low standards of living.

TABLE 4g  
Age Specific Death Rates, 1960-69

(per thousand)

Age Groups	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
0	60.74	57.20	70.17	56.46	59.12	51.00	59.93	49.93	60.71	48.58
5	2.30	1.98	2.27	1.85	2.05	1.64	1.83	1.83	2.07	1.97
10	1.86	1.97	1.85	1.70	1.71	1.61	1.65	1.68	1.69	1.72
15	1.97	2.06	1.96	2.02	1.99	2.00	2.18	2.21	2.39	2.44
20	2.08	2.22	2.22	2.14	2.05	2.06	2.20	2.27	2.31	2.52
25	2.67	2.74	2.59	2.50	2.36	2.22	2.29	2.44	2.35	2.39
30	3.30	3.27	3.45	3.34	2.98	2.85	2.88	2.92	2.88	2.88
35	3.39	3.93	3.89	3.65	3.33	3.53	3.70	3.71	3.66	3.62
40	4.38	5.18	5.24	4.94	4.96	4.56	4.86	4.95	4.98	4.95
45	5.49	6.04	6.54	6.23	5.96	5.92	6.62	6.71	6.88	7.47
50	6.56	10.83	11.47	11.10	10.50	9.87	10.40	10.48	10.79	10.95
55	12.80	12.23	14.43	14.01	13.89	14.36	16.09	16.06	16.70	17.60
60	11.34	19.75	22.33	21.83	21.36	18.96	20.36	20.89	21.81	23.16
65	24.27	39.39	39.95	39.42	38.63	42.47	47.44	50.39	52.92	56.52
70	36.60	56.36	54.90	53.98	51.80	46.40	49.82	51.17	52.90	57.44
75 & over	74.57	240.99	222.30	217.12	211.92	191.93	203.01	193.21	191.60	197.60
Crude Rates (Egypt)	16.9	15.8	17.9	15.5	15.7	14.1	15.9	14.2	16.1	14.5

Source: C.A.P.M.S., "Differential Death Rates by Age Groups and Governorates in A.R.E. (1960-1969)", Population Researches and Studies, Vol.1, No.2, 1972, p.40 (in Arabic).

TABLE 4h

Age Specific Death Rates,  
Five Year Averages, 1960-69.

(per thousand)

Age Groups	1960 - 64	1965 - 69	Percentage of Change
0 - 4	60.74	54.03	-11.05
5 - 9	2.09	1.87	-10.5
10 - 14	1.82	1.67	- 8.2
15 - 19	2.00	2.24	+12.0
20 - 24	2.14	2.27	+ 6.1
25 - 29	2.57	2.34	- 8.9
30 - 34	3.27	2.88	-11.9
35 - 39	3.84	3.64	- 5.2
40 - 44	5.16	4.86	- 5.8
45 - 49	6.27	6.72	+ 7.2
50 - 54	11.34	10.49	- 7.5
55 - 59	13.18	16.16	+22.6
60 - 64	21.91	21.04	- 4.0
65 - 69	38.80	49.95	+28.7
70 - 74	58.32	51.55	-11.6
75 +	232.53	195.47	-15.9

TABLE 41  
Age Specific Death Rates for the Age Groups (15-65+), 1960-69  
(per thousand)

Age Groups	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
15 - 39	2.8	2.8	2.8	2.7	2.5	2.5	2.6	2.7	2.7	2.7
40 - 64	10.5	9.6	10.5	10.2	9.9	9.4	10.2	10.3	10.5	11.1
65 +	115.5	105.0	99.2	97.1	94.5	88.1	94.3	93.1	94.1	98.7

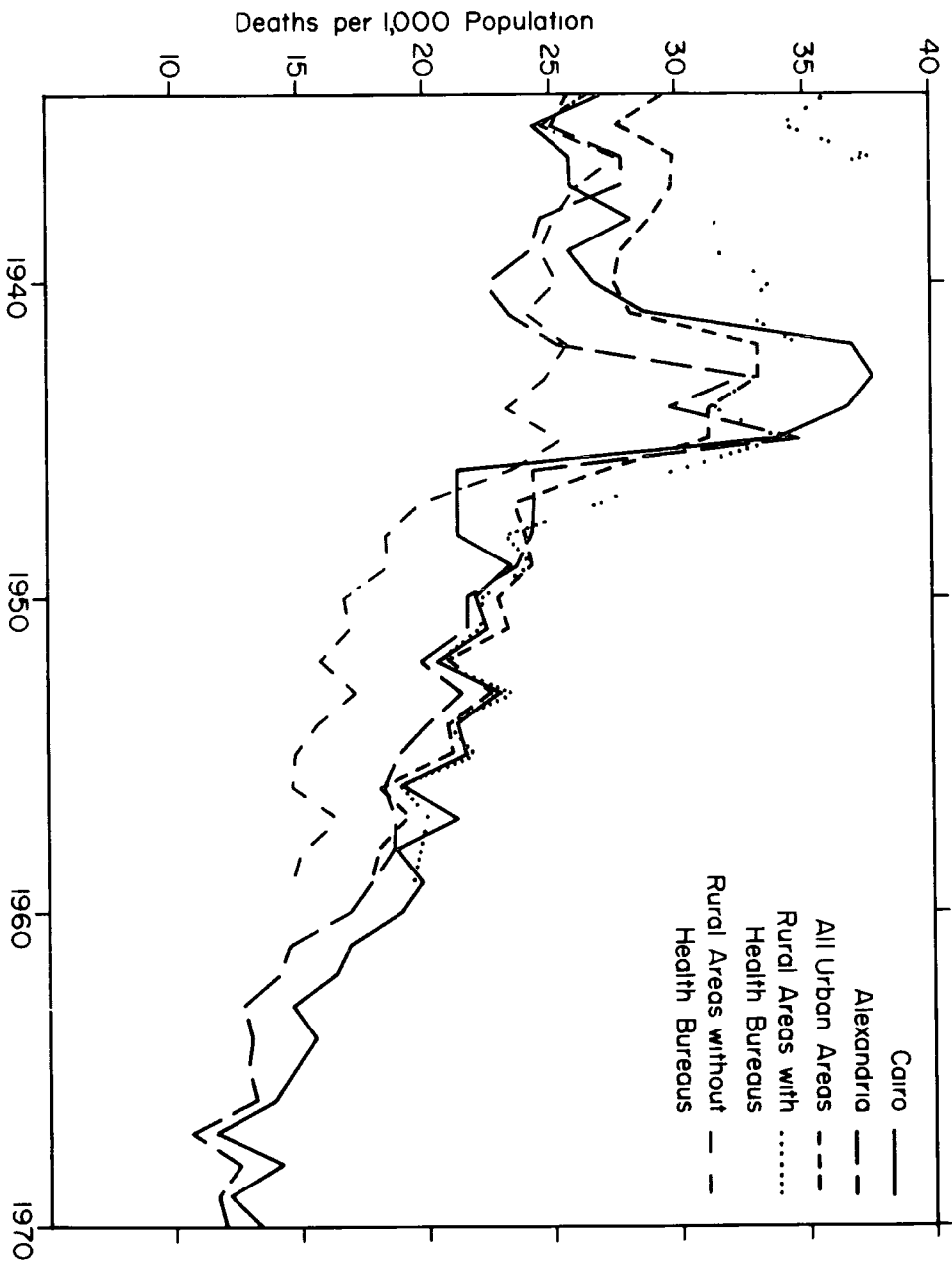
Source: Ibid., p.13

One phenomenon is common to all governorates, namely the progressive decline in death rates in the 1950's and thereafter; this decrease has persisted steadily since 1947.

Urban mortality rates are substantially below those in rural areas. This fact is to be expected in any country where public health services, medical facilities, and hospitals are still lacking in rural areas and where communication does not permit the rural population to reach the cities quickly and easily.<sup>(13)</sup> In the late nineteenth century, there was a significant shift of mortality from a rate higher in the cities than in rural areas to a rate much lower in the cities than in rural areas. The reason for this shift lies in the type and quality of urban and rural environments and the accessibility of medical services. In the early periods, cities were most unhealthy, with deplorable sanitary conditions, high population densities, a high cost of living, and ineffective medical care. Rural areas, although they also had a poor sanitary environment and lacked medical services, were less crowded, and their people had better access to subsistence agriculture than city residents.<sup>(14)</sup>

The modernization process, however, has favoured the cities over the villages, and cities have gradually become cleaner, with pure water supplies, sewerage systems and environmental control, higher standards of living and education, and better access to modern hospitals and preventive health services.<sup>(15)</sup> Figure 4.7 shows modern

Fig 4 7  
URBAN-RURAL DIFFERENTIALS IN MORTALITY, 1934-70



mortality trends in urban and rural areas. Before 1945 rural death rates were extremely high, followed by the rates of urban areas. After 1945, there was a substantial drop in mortality in all areas with a significant decrease in mortality differentials, but rural areas continued to return the higher death rates.

The standardized death rates computed for each of the governorates, as an average for the years 1965-69 reveal great differences (Table 4.9). The governorates may be classified to four levels. At the first level with death rates of less than 15 per thousand, are the following governorates: Cairo, Alexandria, Port Said, Ismailia, Damietta, Daqahliya, Sharqiya, Kafr el Sheikh, Beheira, Sohag and Qena. The death rates at the second level range between 15 and 17 thousand, are found in Suez, Gharbiya, Asyut and Aswan governorates. At the third level, with rates of over 17 and less than 19 per thousand, are found Qalyubiya, Manufiya, Giza, Faiyum and Minya governorates. The mortality rates at the fourth level are over 19 per thousand; only the governorate of Beni Suef is found in this last category.

The study of differential mortality rates by governorates and age groups for the period 1960-69 indicates that the general trend of mortality has been downward, with a 14 per cent decline between 1960 and 1969. There is clear evidence that the age specific death rate had declined for most ages, and especially at the stages of infancy and preschool childhood (0-4 years), where the

reduction has been of the order of 20 per cent. Mortality rates have declined noticeably for most of the age groups and particularly the ages 0-4 and 5-9; this may be due to the amelioration of health services. In some governorates such as Ismailia, Beni Suef, Qena and Aswan, the mortality rates tend to increase; this may be due to the improvement of registration. The death rate in the age group 10-14 is reaching a minimal level. The standardized death rate was very low in Port Said and Ismailia governorates, by comparison with the rates in other governorates.

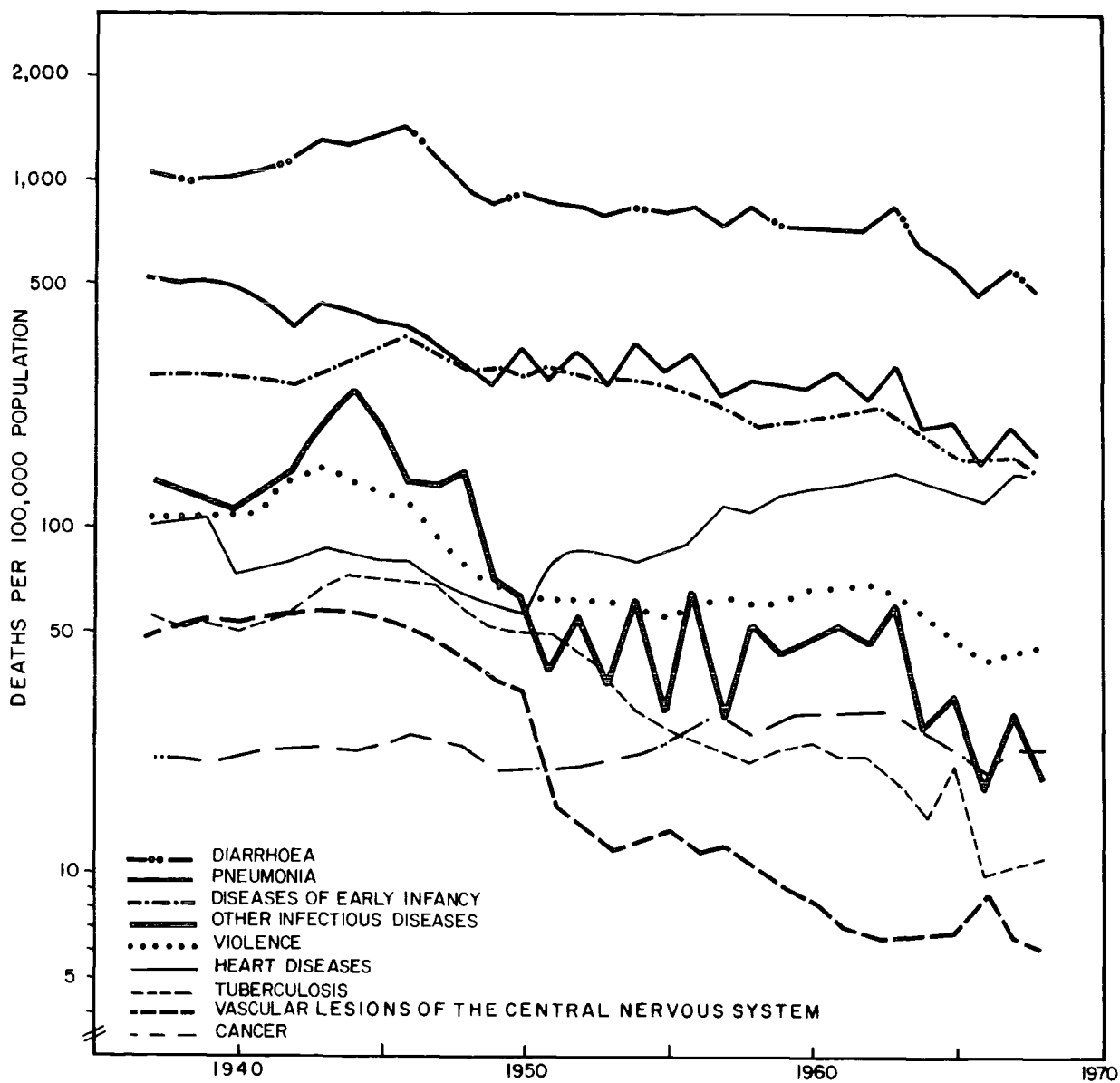
If the mortality rates are to be improved still further, it is essential for local authorities to expand their medical services and improve those social and economic conditions which affect health and life expectancy. Improvement can best be achieved by increasing and spreading health units, especially in rural areas. Serious attention therefore should be devoted to the improvement of medical care, preventive hygiene and nutrition for mother and child. If real effort is made in this field, a fall in mortality among children can be anticipated, accompanied of course by a decline in the overall mortality rates. A reduction in mortality level will reduce the motivation for high fertility rates and may therefore reduce rather than raise the rate of population growth. (16)

#### 4.5 Causes of Death

Trends in major causes of death are depicted in Figure 4.8 for the period 1936 to 1967. The highest death rates throughout the years have been registered for diarrhoea and enteritis. Diarrhoea is reported on an astoundingly high proportion of death certificates because it encompasses other infectious diseases that are reported as diarrhoea rather than by their generic names; this is done to avoid the inevitable inconvenience of the measures required by the infectious disease law following notification of certain diseases. People in Egypt have always been suspicious of the practices of sanitary authorities in such cases, for precautions taken to curtail the spread of infectious diseases included such policing measures as surveillance of family numbers, disinfection of the household, the isolation of the patient who, before the era of antibiotics, usually died in the hospital, and above all, the social stigma of being quarantined. Some physicians have reluctantly declined to report infectious diseases in order not to lose their patients. People soon learned that reporting a disease as diarrhoea would obviate all these formalities and, in the case of death, speed the issuing of the required burial permit. Thus, diarrhoea will probably continue for some time to be reported in place of many other actual causes of death.

Mortality from this diarrhoea category rose during the war but showed a significant absolute decline from 1947 onwards. There were 1,055.9 deaths from diarrhoea

Fig. 4 8 TRENDS IN MAJOR CAUSES OF DEATH, 1936-67



per 100,000 population in 1936 but only 454.3 in 1967, a drop of nearly 60 per cent in 31 years. It must be noted, however, that some part of this drop may be the result of improved reporting in recent years with more infections being notified in their appropriate categories rather than in the diarrhoea category.

There are two other disease categories which have consistently taken a higher toll than all the others except diarrhoea, but these, too, have decreased considerably since 1936. One category includes pneumonia, influenza, and bronchitis; deaths from this group of diseases declined from 518.9 per 100,000 in 1936 to 159.9 in 1967, a drop of about 70 per cent. Similarly deaths from diseases of early infancy dropped from 271.0 to 141.3 per 100,000, a drop of nearly 50 per cent.

Death rates for the group of 'other notifiable' infectious diseases were the fourth highest prior to 1947; deaths from these diseases rose markedly during the war but since then have dropped appreciably. Reported tuberculosis deaths are at a moderate level, with a decline after the war, but the actual death rates are believed to be higher.

Death rates from accidents are relatively high, although they too show some decline after the war. Within this group, motor vehicle accidents have increased while domestic and other accidents have decreased somewhat.

In contrast with the infectious diseases, mortality from heart diseases was moderate before the war (104.9 per 100,000 in 1936), but since the late 1940's it has risen and was 140.9 per 100,000 in 1967. The sudden rise shown after 1949 may in part reflect changes in the World Health Organisation's 'International Classification of Diseases' from the 1948 list to the revised 1955 list. There was also a change in the relative importance among the categories of heart diseases, as shown in Table 4j. It is apparent from this table and from Figure 4.9 that most of the rise occurred in the deaths from arteriosclerotic diseases while deaths from the rheumatic diseases declined. Because this is a significant transitional phenomenon, Omran proposed a new index to be called the A-Rh ratio in heart diseases.<sup>(17)</sup> This index relates the number of deaths from arteriosclerotic diseases to those from rheumatic heart diseases. This ratio increases as a society moves from the third to the fourth stage of the epidemiologic transition. Egypt is still in the third stage of the transition, but deaths from arteriosclerotic diseases have begun to increase noticeably.

Deaths due to vascular lesions of the central nervous system (strokes) were fairly high prior to 1948, then dropped suddenly and sharply for one year before beginning a slow decline. Again, the most feasible explanation for the seeming dramatic change in a major cause of death is found in the shift in disease classification between the two international lists, since the category of vascular lesions of

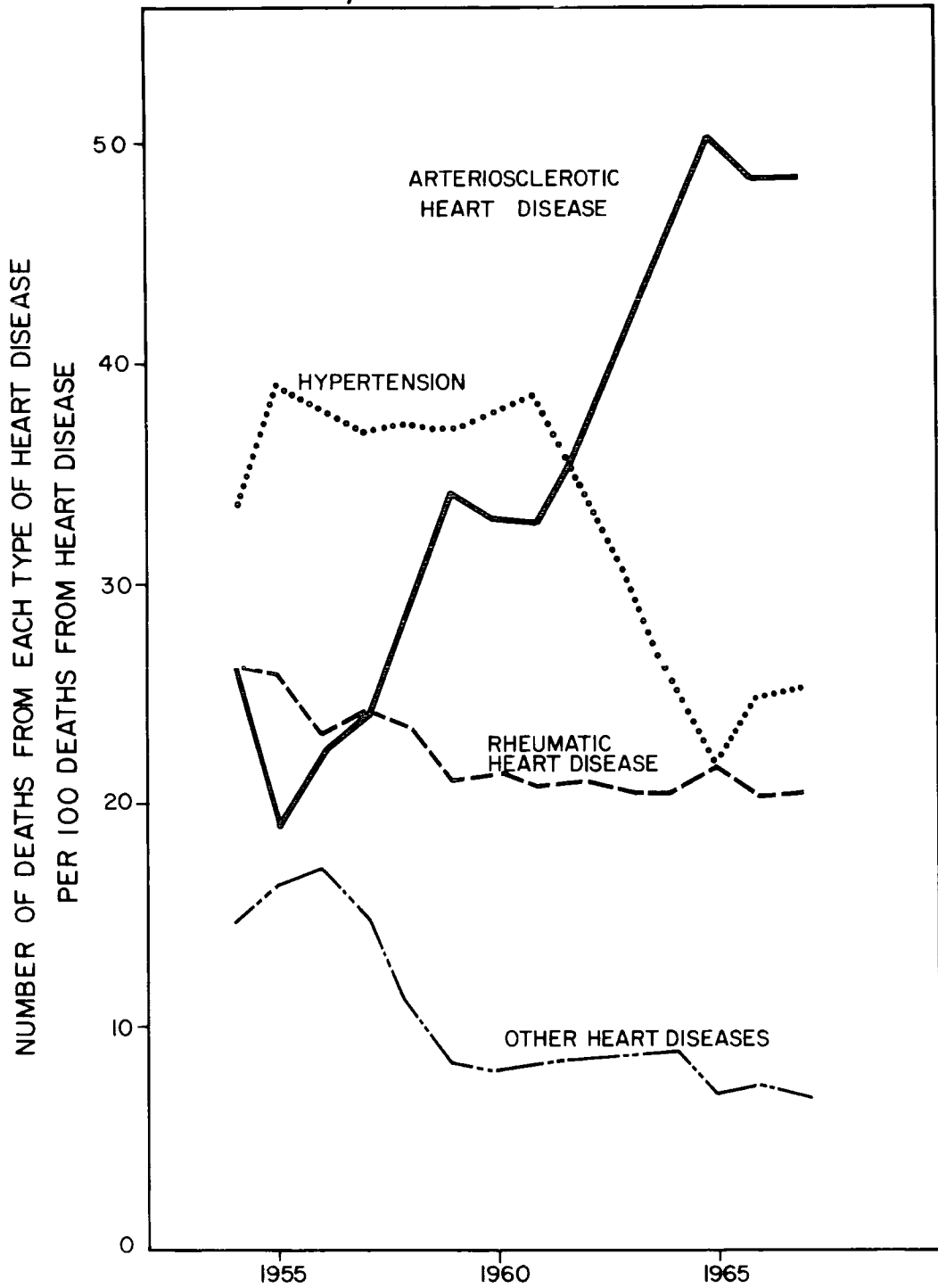
TABLE 4j

Ratios of Deaths from Various Types of Heart Disease to Total Deaths from Heart Disease and the Arteriosclerotic/Rheumatic Index, 1954-67

Year	Rheumatic Total (1)	Arterio- sclerotic Total (2)	Hyper- tensive Total (3)	Arterio- sclerotic/ Rheumatic Index ( $\frac{2}{1} \times 100$ )
1954	26.2	26.0	33.2	99.2
1956	22.8	22.4	37.8	98.2
1960	21.3	32.5	38.5	152.6
1961	20.7	32.5	38.4	157.0
1962	20.9	36.4	34.4	174.2
1964	20.1	45.5	25.5	226.4
1966	20.0	48.3	24.6	241.5
1967	20.2	48.2	25.0	238.6

Source: Omran, A.R., "The Mortality Profile", in Omran, A.R. (Ed.), Egypt: Population, Problems & Prospects, Carolina Population Center, University of North Carolina at Chapel Hill, 1973, p.57

Fig.4.9 RATIOS OF DEATHS FROM VARIOUS TYPES OF HEART DISEASE TO TOTAL DEATHS FROM HEART DISEASE, 1954-1967



the central nervous system is one that encompasses numerous diseases that can be shifted to other categories. This is one of the disease categories that usually rises during the transition, but is one that is very much affected by diagnostic custom and requires considerable accuracy and sophistication for proper classification. (18)

Reported deaths from cancer are still few in Egypt, although in recent years there has been a slow rise. The actual numbers may be higher than reported, since quite a few of the cases may not be discovered and death may therefore be attributed to other, more obvious causes.

By far the most important single cause or category of causes of infant mortality has been gastroenteritis. As in the case of some other categories, this one may include other causes of death. Since many of the diseases of childhood (such as measles, whooping cough, bronchopneumonia and undernutrition) are associated with diarrhoea, it is sometimes difficult to decide which was the actual cause of death and which was the secondary cause. Although infant mortality from gastroenteritis remains high, the rate has declined from 83.7 deaths per thousand live births in 1935 to 59.2 in 1965, a drop of 24.5 points per thousand.

Congenital malformation is second on the list of causes of infant mortality; this category includes a number of diseases of early infancy. The rates dropped somewhat from 44.3 to 34.5 per thousand live births between 1935 and 1965.

Pneumonia and bronchitis are third and have dropped from 21.8 to 14.3 deaths per thousand births. The remaining deaths are attributed to a variety of other causes, including infectious diseases and accidents. It is noteworthy that measles caused only a small proportion of deaths. Since Egypt is an area where measles is endemic, infants are born with passive immunity acquired from their mothers who were infected with measles early in life.

Two main conclusions of demographic significance can be drawn from this discussion of infant mortality; firstly, most infant deaths are preventable. The same can be said for deaths of children under five years. Since deaths before age five constitute a high proportion of total deaths, their prevention will certainly widen the demographic gap. Secondly, it may nevertheless be necessary to reduce infant deaths to a considerably greater degree before couples are willing to practise birth control.

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CHAPTER FIVE  
AGE AND SEX STRUCTURE

One cannot proceed very far in the study of population growth or migration without examination of age and sex structure. Furthermore, age and sex structure is directly influenced by three variables: mortality, fertility and migration. These variables are not entirely independent, and any change in one may eventually influence the other two. (1)

For the purpose of analysis of age and sex structure, a long period of time has been studied, beginning with the 1927 population census and ending at the complete census undertaken in 1960. In addition, the estimated age-sex distribution in 1970 has been considered. It should be noted that census data concerning the period from 1927 onwards were deficient in many ways, so that the data used in this analysis have been taken from adjusted census tables, slightly modified as a result of the reclassification of age groups to a norm of five year intervals in all censuses considered.

From the beginning of the twentieth century and up to the Second World War, both fertility and mortality levels were high and constant. This phase of demographic stability led to the stability of the age composition. After the war years, the death rate declined sharply, while the birth rate was still high, this led to a second demographic phase of quasi-stability (the transitional phase). This

phase resulted in the expansion of the base of the population pyramid, i.e. the two youngest groups in the population (0-4 and 5-14) increased, while the proportion of the adult population 15-59 decreased. As shown in Table 5a, one notices that the proportion of population in the age group 0-14 during the period 1927-47 remained fairly constant, around 38-39 per cent of the total population, but increased to 42.7 per cent in 1960 and 42.4 per cent in 1970. By contrast, the proportion of persons in the age group 15-59, which ranged around 54 per cent of the total population in 1927 and 1937, increased to 55.7 per cent in 1947 and fell to 52.4 per cent in 1970. At the other end of the age cycle, the small percentage of persons over 60 decreased from 6.9 per cent in 1927 to 6.1 per cent in 1960 and to 5.2 in 1970. As a result of continued high fertility and the sharp decline in mortality rates after 1947, the Egyptian population has become steadily younger.

In 1947 there were 38.0 per cent of the population in the age group 0-14 and 6.3 per cent in the aged age group (60 and over), thus leaving 55.7 per cent of the population in the age bracket which usually supplies the labour force of the country. In 1960 the proportion of children (under 15 years of age) increased to 42.7 per cent, while the proportion of the population between 15 and 59 decreased to 51.2 per cent. The proportion of the population in the oldest age group was 6.1 per cent. The proportion of children under 5 years of age increased between 1947 and 1960 from 13.6 per cent to 15.9 per cent. The age group

TABLE 5a  
 Percentage Distribution of Population  
 by Age, 1927-70

Age Groups	1927	1937	1947	1960	1970
0 - 4	14.4	13.2	13.6	15.9	16.8
5 - 9	13.1	13.9	12.7	14.6	13.8
10 - 14	11.1	12.0	11.7	12.2	11.8
0 - 14	38.6	39.1	38.0	42.7	42.4
15 - 19	9.1	8.5	10.0	8.3	10.2
20 - 24	7.8	6.9	7.3	6.9	8.7
25 - 29	8.6	8.2	7.8	7.4	7.5
30 - 34	7.5	7.5	6.9	6.4	6.4
35 - 39	6.6	7.3	6.9	6.6	5.4
40 - 44	5.6	5.8	6.0	4.9	4.6
45 - 49	3.7	4.1	4.4	4.4	3.8
50 - 54	4.0	4.2	4.6	3.8	3.2
55 - 59	1.6	1.8	1.8	2.5	2.6
15 - 59	54.5	54.3	55.7	51.2	52.4
60 - 64	2.8	2.7	2.9	2.6	2.0
65 - 69	0.9	0.9	0.9	1.3	1.5
70 and over	3.2	3.0	2.5	2.2	1.7
60 and over	6.9	6.6	6.3	6.1	5.2
Total	100.0	100.0	100.0	100.0	100.0

5-14 increased also from 24.4 per cent in 1947 to 26.8 per cent in 1960. The age group 65-69 increased from 0.9 per cent in 1947 to 1.3 per cent in 1960, while the age group 70 and over decreased from 2.5 per cent in 1947 to 2.2 per cent in 1960 (See Figure 5.1).

When considering the age-structure estimated for 1970, one finds that the proportion of individuals in the age groups 45-64 was lower than in 1960. However, since the proportion of the population in the age group 45-64 fell by less than the increase in the proportion in the 15-44 age group, it must be concluded that the percentage of the total population in the age group 15-64 rose in 1970 above the 1960 level.

In general, it should be noted that the age-structure of the population of Egypt remained more or less constant throughout the period 1927-70, with minor fluctuations. This rather stable pattern of age distribution is typically observed in all developing countries with rather high and constant birth rates and gradually decreasing death rates.

The slight changes noted in the relative age distribution affect the levels of the median age of population (see Table 5b). Fluctuations in the median age are consistent with those occurring in the relative age distribution during the same period. In 1970, the median age was at its lowest level of 18.7 years, because the proportion of children reached a maximum, the proportion of adults a minimum, and the proportion of the aged very nearly a minimum.

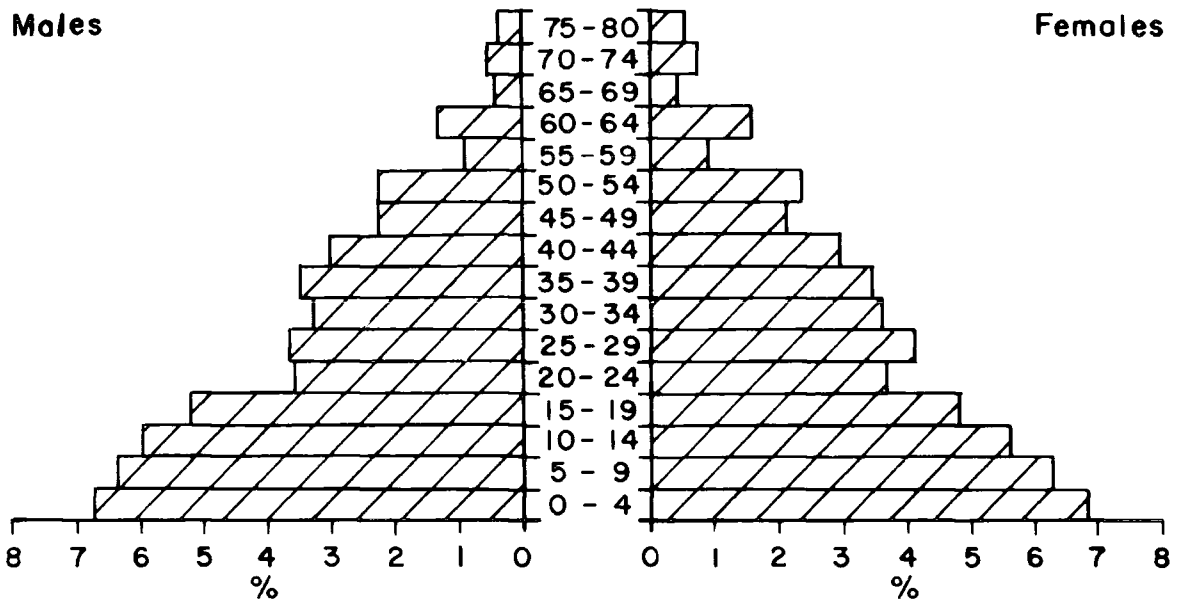
**Fig 5-1**  
**POPULATION PYRAMIDS OF EGYPT ACCORDING TO THE**  
**1947 and 1960 CENSUSES**  
**(five year groups)**

**1947**

**Males**

**Age**

**Females**



**1960**

**Males**

**Age**

**Females**

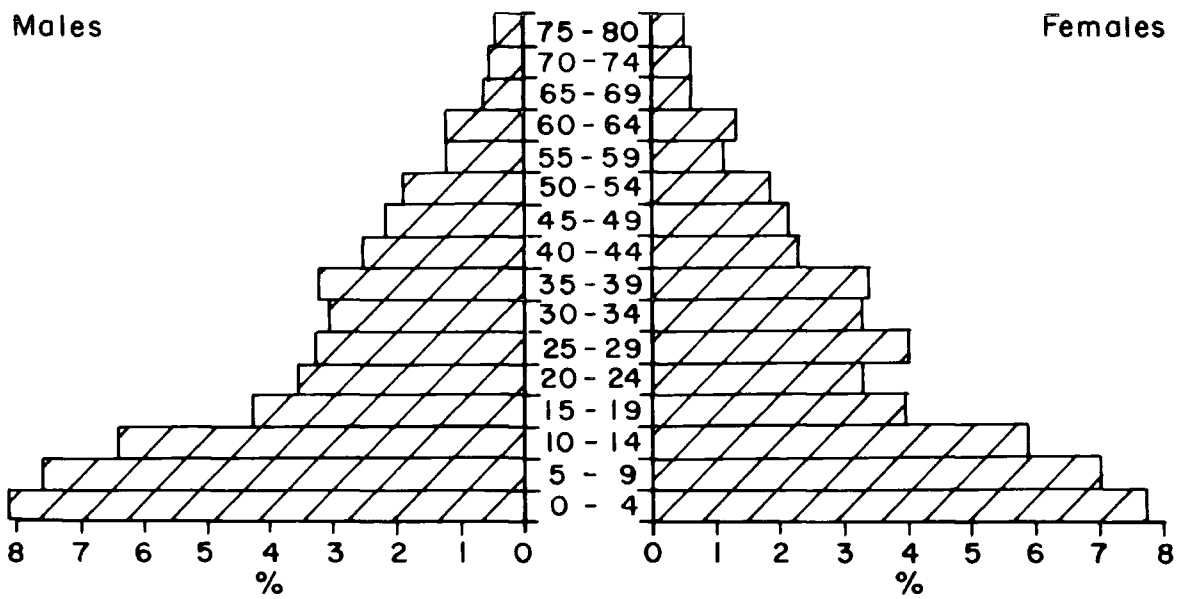


TABLE 5b

Median Age, 1927-70

Years	Median Age
1927	21.5
1937	21.7
1947	21.4
1960	19.4
1970	18.7

It is evident from Table 5c that out of a total population increase of 7.0 million persons between 1947 and 1960, 3.9 million (or 55.7 per cent) were under 15, and 2.7 million (or 38.6 per cent) were between 15 and 59. Persons in the age group 60 and over increased by 0.4 million, or 5.7 per cent. This pattern of age distribution shows that the population of Egypt is characterized by a large number of children who are dependent on the adult population. There were between eight and nine children under 15 years of age to every ten persons between 15 and 59 years old in 1960, whereas the figure for 1947 was only seven children per ten adults. This compared with a ratio in the economically most advanced countries of Europe and North America of about four or five children for every ten active adults.<sup>(2)</sup>

Dependency ratios for both total and male populations increased over the last three censuses. In 1960 the overall dependency ratio reached a level of 90.5 by comparison with 67.7 in 1947 and 74.8 in 1937, while the

TABLE 5c

Percentage Distribution of Population  
by Age-groups, 1947 and 1960<sup>(1)</sup>

Age - groups	1947		1960	
	Number	%	Number	%
0 - 14	7,198,355	37.95	11,109,748	42.76
15 - 59	10,573,039	55.75	13,296,320	51.17
60 and over	1,195,373	6.30	1,578,033	6.07
Total	18,966,767	100.00	25,984,101	100.00

(1) Excluding nomads in frontier governorates.

ratio for males alone rose from 64.4 in 1937 to 70.9 in 1947 and 91.6 in 1960.

When considering the relative age distribution of population by sex during the period 1927-60, it is noticeable that the proportion of female children under 15 years of age remained steadily below the corresponding proportion of male children. By contrast, the proportion of male adults 15-59 was always below the corresponding proportion of female adults. The aged age group (60 and over) included a marked majority of females (Table 5d).

As shown in Table 5e, the sex ratio (males per 100 females) for the young age group 0-14 was 107 in 1960. On the other hand, the proportion of female adults (15-64 years old) was higher than the corresponding proportion of male adults. The percentage of old women was always higher than that of old men, but fluctuated less than in other age groups. Consequently, the female population



always had a median age higher than that of the male population, though the median for both sexes has dropped throughout the period studied.

TABLE 5e

Sex Ratios by Age-group, 1960

(Males per 100 Females)

Age Groups	Urban	Rural	Total
Less than 15	104	109	107
15 - 44	102	96	98
45 - 64	111	91	97
65 and over	96	82	86
All ages	104	100	101

The age-structure of the population in rural areas differs from the structure in urban areas. Thus the proportion of population under 15 years of age is smaller in rural areas, by 1.3 per cent, than in urban areas, which is associated with the slightly lower proportion of females in rural areas in comparison with urban areas. This may result (a) from defects in census records, (b) from the consequence of the fact that less care is taken of female babies than of males in some parts of the country (where the people still feel that male babies are more important than females), and (c) from emigration of females to the cities for work in household service.

The proportion of population in the 15-44 age group is likewise smaller in rural areas than in urban areas,

being 39.86 per cent in rural areas in 1960 against 41.47 in urban areas. This is also probably due to the surplus migration of males of working age from rural areas to towns (see Table 5f).

The sex ratios for census years since 1927 and for 1970 are given in Table 5g. The sex ratio during the first year of life is positive throughout (except for 1937 when the balance was even); it generally drops, however, in the age group 1-4 (except for 1960). The drop in the second age group may be due to selective underenumeration or selective survival or both. In 1960, with better reporting, the ratio of males to females in the 1-4 age group was 105. A positive ratio between the ages of 5 and 19 may be due to improved reporting of males or better care of males than females. For the 20-24 age group males became much more prominent over the period, possibly because of better reporting. In the next group (25-34) females are generally predominant. This may be due to a tendency amongst middle-aged women to underestimate their ages. For the 35-39 and 45-49 age groups there is a considerable drop in the male/female ratio, while for 40-44 the opposite trend prevails. In the older age groups there is some ambiguity. For both the 50-54 and 60 and over age groups females generally predominate, but in the 55-59 age group there are more males. The former may be owing to the better survival rate of females; the latter to female underestimation of ages.

In the 1947 census, the sex ratio was below 100 in

TABLE 5f

Percentage Distribution of Population by  
Age and Sex in Urban and Rural Areas, 1960.

Age Groups	Males	Females	Total
0 - 14 (Rural)	44.08	40.44	42.26
(Urban)	43.58	43.57	43.57
(Total)	43.88	41.61	42.76
15 - 44 (Rural)	39.07	40.66	39.86
(Urban)	41.15	41.79	41.47
(Total)	39.87	41.08	40.47
45 - 64 (Rural)	13.35	14.66	14.01
(Urban)	12.55	11.69	12.13
(Total)	13.05	13.55	13.29
65 + (Rural)	3.50	4.24	3.87
(Urban)	2.72	2.95	2.83
(Total)	3.20	3.76	3.48
Rural	100.00	100.00	100.00
Urban	100.00	100.00	100.00
Total	100.00	100.00	100.00

TABLE 5g

Sex Ratios by Age-groups, 1927-70

(Males per 100 Females)

Age Groups	1927	1937	1947	1960	1970
0 - 1	102	100	103	104	} 105
1 - 4	94	93	97	105	
5 - 9	102	101	101	108	108
10 - 14	120	117	107	108	108
15 - 19	111	113	107	107	107
20 - 24	90	95	96	105	106
25 - 29	88	89	87	82	82
30 - 34	87	88	90	96	97
35 - 39	111	111	101	96	98
40 - 44	92	101	100	108	110
45 - 49	117	110	103	98	100
50 - 54	89	98	94	98	99
55 - 59	114	108	99	102	104
60 and over	86	85	84	88	89

most of the governorates. During the period 1960-70 the sex ratio in the governorates of Lower Egypt was never below 100, with the exception of Kafr el Sheikh, Gharbiya and Beheira. The sex ratio in Upper Egypt was below 100 in Beni Suef and Faiyum governorates between 1960 and 1970, and below 100 in Sohag, Qena and Aswan in 1960 (see Table 5h). The higher male ratios in urban governorates is due to internal migration of males from rural governorates. The frontier governorates have always had a higher sex ratio by comparison with the overall ratio because a larger part of their population is made up of male migrants who leave their families behind and spend some time working in various industrial and quarrying establishments in the desert.

During the period 1947-70, the overall sex ratio fluctuated between 98.1 and 102.0. Egypt, then, did not experience any problem of sex discrepancy, as did some other countries. (3)

The relative youthfulness of the population of Egypt is the result of high birth rates and declining death rates. This youthful pattern entails an unfavourable dependency load on the labour force. Such a large unproductive sector is a huge drain on the country's economic resources and acts to aggravate the current poverty.

TABLE 5h

Sex Ratios by Governorate, 1947-70  
(Males per 100 Females)

Governorate	1947	1960	1966	1970
Cairo	103.8	104.9	104.6	104.8
Alexandria	102.0	103.1	104.5	104.6
Port Said	109.5	104.7	103.5	103.5
Ismailia	117.9	103.5	102.6	102.7
Suez	115.9	107.8	107.2	106.8
Damietta	99.8	104.4	104.3	104.4
Daqahliya	96.2	101.0	100.8	100.8
Sharqiya	96.3	100.9	100.9	101.0
Qalyubiya	99.0	103.8	104.5	104.7
Kafr el Sheikh	93.9	98.5	97.9	97.9
Gharbiya	93.9	99.3	99.6	99.6
Minufiya	95.6	100.7	101.4	101.5
Beheira	92.6	97.8	98.1	98.1
Giza	98.7	101.6	103.3	103.3
Beni Suef	94.2	96.7	97.4	97.5
Faiyum	95.2	98.3	99.9	99.9
Minya	97.7	101.2	101.3	101.3
Asyut	100.7	103.7	104.1	104.2
Sohag	99.5	99.5	101.2	101.3
Qena	100.0	99.5	100.8	100.8
Aswan	87.3	96.0	103.1	104.0
Red Sea	164.9	166.0	140.7	129.6
New Valley	93.1	96.3	106.5	108.2
Matruh	105.7	94.1	104.5	104.6
Sinai	118.9	118.7	105.5	105.0
Egypt	98.1	101.2	101.9	102.0

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CHAPTER SIX

INTERNAL MIGRATION

6.1 Techniques Used in the Measurement of Internal Migration

(a) Vital Statistics Method: where, as in Egypt, reliable statistics of births and deaths to the residents of each governorate are available, it is possible to estimate the natural increase between two census dates or between any two dates for which the population is known. The estimate of net migration is then obtained by subtracting the natural increase from the total population change. This "balancing equation" can be put in the following simple form:<sup>(1)</sup>

$$\text{Net M} = (P_{t+n}) - P_t - (B - D)$$

where for any given area Net M = net migration,  $P_t$  is the population at the earlier census,  $P_{t+n}$  is the population at the later census, B is the number of births that occurred to residents of the area during the intercensal period, and D is the number of deaths that occurred to residents of the area during the same period. An application of the formula is given in Tables 6.1 - 6.6.

(b) National Growth Rate Method: it can be used when census data do not allow the use of more complex methods. A difference between the rate of growth in a given area compared with a national average is interpreted as the result of migration.<sup>(2)</sup>

$$\text{Net } M_1 = \frac{P_{i,t+n} - P_{i,t}}{P_{i,t}} - \frac{P_{t+n} - P_t}{P_t}$$

where P is the national population at the beginning ( $P_t$ ) and at the end of a period ( $P_{t+n}$ ), and  $P_i$  is the population of an area (i) respectively at two censuses ( $P_{i,t}$  and  $P_{i,t+n}$ ). The method is illustrated for Egypt in Tables 6.7 - 6.12.

(c) Place of Birth: the main source of information on internal migration is the population census, which has included a question on "place of birth" since the 1937 census. Answers to this question have been tabulated by distributing the enumerated population in each governorate according to governorate of birth. It is well known that such tabulations give only the net lifetime migration. They also throw no light on the characteristics of these migrants by age, occupation, type of place of origin, or duration of residence. However, despite their limitations, the data enable us to make a number of important remarks on the intergovernorate movement of the population. Out-migration from a governorate will be measured here by an index to the percentage of those reported as born in the governorate who were enumerated outside it. Similarly, we shall use as an index of in-migration the percentage of those born outside the governorate who were enumerated inside it (see Tables 6.13 - 6.76).

## 6.2 Migration Between Governorates

Internal migration plays an important part in the re-distribution of population in Egypt. The dominating trend in internal migration in Egypt is of individual and spontan-

eous movement, the only exception to this being the re-settlement of the Egyptian Nubians from their original homeland into Nasser District at Kom Ombo. This process was planned and carried out by the governorate and has taken a collective and planned form. The reason for this migration was the inundation of the Nubia by the Nile waters stored by the Aswan High Dam.

Migration from Lower Egypt to urban governorates seems to have been of the family type. This is not the case in the four governorates in South Upper Egypt, namely Aswan, Qena, Sohag and Asyut. In this part of the country, particularly around Aswan, there has been considerable out-migration of the individual type, particularly by males. This situation is the result of the tendency among Nubian males to work in services in Cairo and Alexandria rather than in the construction and mining operations which they leave behind to workmen coming from Qena.

The governorates of South Upper Egypt have a high rate of out-migration compared with other parts of the country. The governorates of North Upper Egypt - Matruh, Faiyum, Beni Suef and Giza - on the other hand, have some of the lowest out-migration rates. In Lower Egypt, Minufiya, Gharbiya, Qalyubiya and Damietta recorded high percentages of out-migration, while Kafr el Sheikh and Beheira had low indices.

The excess in the rates of out-migration from South Upper Egypt over those of the North Upper Egypt can be explained by economic conditions. Until recently South Upper Egypt had no resources except the land, most of which, in

contrast to the rest of the country, can be irrigated only once a year. So population pressure on the land is a main cause of this out-migration (see Table 6a). The crop area exceeded the cultivated area by 77 per cent in North Upper Egypt and only 56 per cent in South Upper Egypt. In Aswan, in particular, the crop area exceeded the cultivated area by just two per thousand. Population density in South Upper Egypt in 1960 reached 990 persons per square kilometre of cultivated land and 635 persons per square kilometre of crop area. The corresponding densities in North Upper Egypt were lower, only 750 and 420 respectively. Population pressure on the land seems also to be a main factor behind out-migration from those governorates of the Delta which have heavy out-migration. This pressure is very great in Qalyubiya where the cultivated area per capita is 0.16 feddan. Minufiya governorate is the one with the largest outflow of migrants in the country as a whole. The factors behind this state of affairs are: (a) its high population density (898 persons per square kilometre in 1966), (b) the pattern of land ownership, only 0.22 feddan on the average, which has occasioned the migration of agricultural manpower, and (c) the high educational level, which encourages the migration of students to other governorates particularly to Cairo. It is extremely significant that Minufiya was one of the principal areas from which inhabitants were chosen for Mudiriyet Al Tahrir (The Tahrir province), which is one of the agricultural reclamation areas in the west of the Delta.

TABLE 6a

Cultivated Area Per Capita in Rural Governorates, 1966

Governorates	Population	Cultivated Area (Feddans)	Cultivated Area (Per Capita)
Ismailia	344,789	54,056	0.16
Damietta	431,596	96,498	0.22
Daqahliya	2,285,332	646,829	0.28
Sharqiya	2,107,971	645,017	0.31
Qalyubiya	1,211,764	196,428	0.16
Kafrel Sheikh	1,118,495	432,078	0.39
Gharbiya	1,901,117	438,554	0.23
Minufiya	1,458,048	324,979	0.22
Beheira	1,978,889	716,591	0.36
Giza	1,650,381	181,266	0.11
Beni Suef	927,910	271,450	0.29
Faiyum	935,281	326,323	0.35
Minya	1,705,602	457,018	0.27
Asyut	1,418,164	330,268	0.23
Sohag	1,689,397	335,626	0.20
Qena	1,470,812	364,124	0.25
Aswan	520,567	115,903	0.22

The percentage of migrants to urban governorates among all out-migrants is given in Table 6b which shows that, with the exception of Cairo itself, these percentages were generally above 50. This index of migration to urban governorates is largest in Aswan where it has varied between 72 and 88 among males and between 79 and 80 among females. These migrants are the Nubians who travel to seek employment in services, particularly in Cairo and Alexandria. Three-quarters of the net migration from Aswan was to these two cities. On the other hand, Qena governorate has one of the lowest indices of migration to urban governorates. This is due mainly to the migration into Aswan and the mining "border areas" of a considerable part of the out-migrants from Qena. Aswan is therefore experiencing not only heavy out-migration but a fairly sizeable in-migration. Most of the out-migration from the three governorates surrounding Cairo - Giza, Qalyubiya and Minufiya - is directed towards the capital. Thus Cairo's share of male out-migrants from her three neighbouring governorates, according to the 1966 census, varied between 71.3 per cent from Giza and 58.3 per cent from Minufiya. The corresponding percentages among female out-migrants were 73 and 59. Similarly, most of the out-migration from Beheira is directed towards Alexandria, with this city's net share of male out-migrants amounting to 56.8 per cent and 54.4 per cent of the females in 1966. The highest percentages of out-migrants from one urban governorate to another are to be observed in the governorates lying along the Suez Canal, where these percentages were between

TABLE 6b

Percentage of Migrants to the Urban Governorates  
among all out-Migrants, 1947, 1960 and 1966

Governorate of Birth	Males			Females		
	1947	1960	1966	1947	1960	1966
Cairo	19	24	19	29	21	18
Alexandria	59	49	35	59	55	53
Port Said )	45	65	53	47	67	49
Ismailia )		64	63		63	62
Suez	82	61	60	84	63	55
Damietta	82	68	68	83	69	65
Daqahliya	59	55	60	62	55	60
Sharqiya	72	68	60	74	70	57
Qalyubiya	79	74	77	80	76	77
Kafr el Sheikh )	67	50	57	70	48	56
Gharbiya )		61	65		63	64
Minufiya	69	71	72	72	72	73
Beheira	33	75	80	79	75	77
Giza	85	77	78	70	80	80
Beni Suef	61	58	63	30	59	59
Faiyum	63	61	69	42	63	67
Minya	62	59	60	41	60	57
Asyut	75	72	72	66	71	70
Sohag	72	73	73	68	74	71
Qena	52	56	53	42	52	52
Aswan	88	72	79	79	80	80
Red Sea	24	63	65	16	62	69
New Valley	91	67	82	94	67	76
Matruh	66	22	87	58	22	75
Sinai	82	57	56	81	57	55

53 and 60 among males and between 49 and 55 among females in 1966. Cairo is the governorate exporting the fewest people to other governorates; Alexandria exports the second fewest. The reason lies in the fact that these two cities offer all that urban areas can offer in the way of employment, education, medical care, and other urban facilities.

Approximately 50 per cent of all migrants went to Cairo and Giza. The size and relative share of the total out-migration moving to the capital show the tremendous attraction the city has as a migration centre. Alexandria's share of all out-migrants was around 14 per cent in 1966, which put her in second place as a major urban centre receiving migrants.

With the exceptions of Giza and Aswan, in-movement to rural governorates is minimal. Most of the movements into Giza governorate have been to the town of Giza across the river from Cairo, which is now a rapidly expanding suburb. In 1966, 18 per cent of the population of Giza governorate were born outside that governorate. Substantial in-migration to Aswan governorate may seem paradoxical in view of the high rate of out-migration, but this is explained by the location in the governorate of many major building operations, chief among them the work on the High Dam, and the growth of factories making use of cheap hydro-electric power from the Dam, besides the expansion of the iron ore mines; all these offering employment.

On the basis of the statistical data available, the Egyptian governorates can be classified as follows: first,

'destination' governorates, represented by the metropolitan areas - Cairo, Alexandria and the Canal Zone - and those governorates which are particularly well supplied with opportunities for work, especially Giza, Aswan and to some extent Red Sea and Matruh governorates. Second, 'source' governorates, comprising all the other Egyptian governorates, but chiefly Minufiya and Gharbiya in southern Mid-Delta, and Sohag and Qena in Upper Egypt. These 'out-migration' governorates belonged to two categories: (a) the over-populated governorates neighbouring the metropolitan areas; and (b) the remoter parts of the country, especially in Upper Egypt.

Industry and the various services generated by it is, of course, what principally attracts the migrant from rural to urban areas. Wages for industrial labour are higher than for agricultural labour, and are eagerly sought, especially by younger people whose better education encourages them to aspire to higher living standards, and for many of whom military service has provided an experience of a more affluent life and not infrequently the skills with which to achieve it.

### 6.3 Lifetime Migration (1966)

In 1966 about 2.7 million persons, or about 9.1 per cent of the total population, were classified as lifetime migrants, i.e. persons reported as having been born outside their governorate of enumeration.

When the country is divided into two broad groups, namely of urban and non-urban governorates, the 1966 data

show a substantial gain of 1,304,195 persons in urban governorates through net lifetime migration. Such a figure represents about one-fifth (19.86 per cent) of the population of the urban governorates in 1966. Thus, it may be concluded that the first major migration stream was from rural to urban areas.

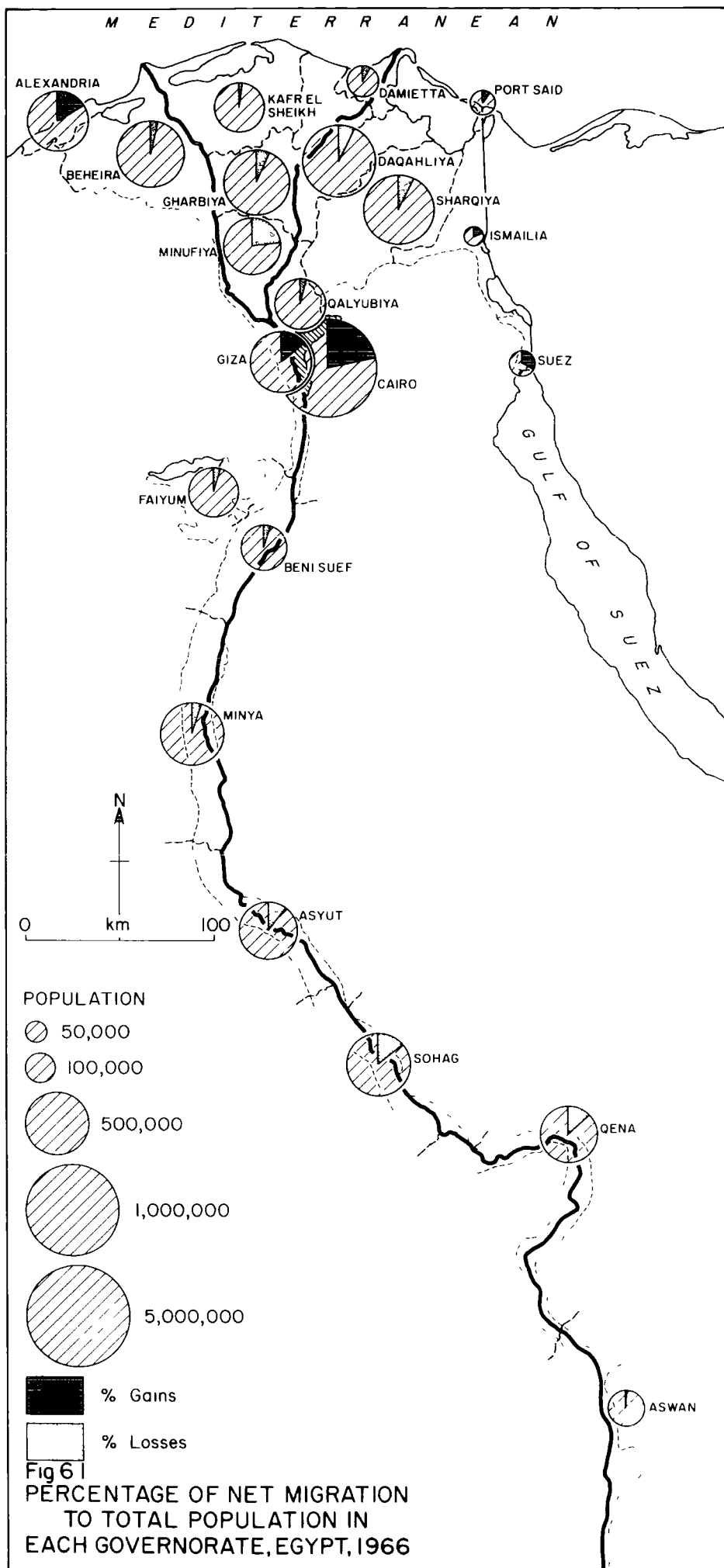
If the country is divided into three regions, namely Lower Egypt (including urban governorates), Upper Egypt and frontier governorates, it can be shown that, by 1966, Lower Egypt gained a total of 459,099 persons from Upper Egypt, while the frontier governorates gained 4,924 persons from the same source. This seems to explain why it has been suggested that there are two migration streams from Upper Egypt, one to Lower Egypt and one to frontier governorates.

The data by individual governorates reveal a number of points. For example, in 1966, Cairo showed a net gain from lifetime migration of more than two-thirds (898,215 persons or 68.9 per cent) of the total gains reported in that year. All other urban governorates recorded a net gain of 405,980 out of which 294,473 persons were in Alexandria and the rest in the urban governorates of the Canal Zone. Besides the urban governorates, Ismailia, Giza and Aswan showed a net gain of 65,444, 224,574 and 4,229 persons respectively, and the rest of the governorates in Lower and Upper Egypt recorded net losses which varied markedly. It may be added also that within the frontier governorates, Red Sea and Matruh showed a small net gain of about 11,823 persons. The four governorates showing the greatest losses

were Minufiya (330,257 persons) and Daqahliya (153,620 persons) in Lower Egypt, and Sohag (241,461 persons) and Qena (165,767 persons) in Upper Egypt. The net gains represented more than 16 per cent of the population in each of the individual urban governorates with the exception of Port Said which revealed about a 10 per cent increase. Ismailia, Giza and Aswan increased by 19, 14 and 1 per cent respectively, while Red Sea governorate increased by 19.4 per cent and Matruh revealed about a 4 per cent increase. The net losses, on the other hand, represented about 22.6 per cent in Minufiya, 6.7 per cent in Daqahliya, 14.3 per cent in Sohag and 11.3 per cent in Qena.

The rest of the non-urban governorates can be briefly dealt with here. Asyut had a net loss of 10.4 per cent of its population, though the absolute number of its loss was smaller than those mentioned above. The three northern governorates other than Giza, i.e. Beni Suef, Faiyum and Minya, showed much lower percentage losses ranging between 3 and 5 per cent. The other non-urban governorates of Lower Egypt recorded intermediate net losses between 3 and 8 per cent of their population with the exception of Kafr el Sheikh whose losses were less than 2 per cent (see Figure 6.1).

The patterns of in- and out-migration differ significantly among various groups of governorates. Inter-governorate lifetime in-migrants, for example, amounted to 25.8 per cent of the enumerated population in urban governorates as a whole in 1966, while the corresponding proportions were



4 and 5 per cent in the non-urban governorates of Lower and Upper Egypt respectively. On the other hand, the proportion of lifetime out-migrants was 6 per cent for urban governorates as compared with 10.5 and 9.5 per cent in non-urban governorates in Lower and Upper Egypt respectively. The figures for in- and out-migration in the frontier governorates were 9.2 and 7.3 per cent respectively.

The pattern of in- and out-migration varied widely within each of the groups of governorates. In Lower Egypt, Minufiya, Gharbiya, Damietta, Qalyubiya, Daqahliya and Sharqiya governorates showed high percentages of out-migration, while the northern and north-western governorates of the Delta (Kafir el Sheikh and Beheira) had low indices. The southern governorates of Upper Egypt, namely, Asyut, Sohag, Qena and Aswan showed much higher indices of out-migration than those of the rest of the governorates in the region, while among urban governorates those of the Canal Zone showed higher indices of out-migration than Cairo and Alexandria.

The indices of in-migration were generally low among governorates with heavy out-migration with the exception of Aswan and Qalyubiya. The rest of the non-urban governorates in Lower and Upper Egypt, with the exception of Ismailia and Giza, also had low indices of in-migration. The moderate or high indices in Qalyubiya and Giza were owing to urban influences from Cairo metropolitan area. The high in-migration index of Aswan, however, was due to out-migration of persons from Qena, for work in various

capacities on the Aswan Dam, while three-quarters of lifetime out-migrants from Aswan went to urban governorates, particularly to Cairo and Alexandria.

Indices of in-migration were quite high for all urban governorates, particularly for Suez and Cairo. New Valley and Sinai had high indices of out-migration but the indices of in-migration were high for Red Sea, Sinai and Matruh and low for New Valley.

Within the total of 2.7 million lifetime migrants in 1966, the overall sex ratio was about 110.5 males per 100 females. However, the sex differences relating to particular sets of migration figures varied widely according to the origin and destination of the various migration streams. For example, the sex ratio of intergovernorate out-migrants from the group of urban governorates (90) was significantly lower than that of non-urban governorates (114). Further, the sex ratios among out-migrants tended to be higher for the governorates of Upper Egypt (122) and the frontier (118) than for the non-urban governorates of Lower Egypt (105). On the other hand, the sex ratio of in-migrants was highest for the urban governorates (115.1) and lowest for Lower Egypt (100.2).

A number of migration streams can be identified. These include the following: (a) rural-metropolitan, mainly to Cairo, Alexandria, but also to other large metropolitan centres; (b) rural-urban movement of the large number of students and workers from villages to towns and big cities;

(c) rural-industrial movement, from villages to major industrial centres in Aswan, Giza, Beheira, Gharbiya and others; (d) rural-rural resettlement - a movement from the heavily populated governorates of Upper and Lower Egypt to newly developed rural settlements on the recently reclaimed land (this is a relatively new stream of migration which will probably grow in significance following the reclamation of an additional two million feddans from the High Dam area in the near future); (e) a traditional movement from Upper to Lower Egypt, especially from Aswan to Cairo and Alexandria, mainly by Nubians who seek work as domestics and as services personnel in the two large metropolitan centres; (f) a very recent movement from Lower to Upper Egypt (especially to Aswan where there are a large number of industrial complexes and projects, besides that of the High Dam); and (g) the beginning of a movement of migrants from the valley to frontier governorates, to work in mining, quarrying and the oil/gas industry, and to settle the New Valley of the Western Desert. A great deal of rural-urban migration seems to be of the family rather than of the individual type. This is especially so of migrants from Upper Egypt. However, sex differentials in rural-urban migration do exist, especially a preponderance of females among the young and of males among those of early middle age (30-39). A singular feature in the pattern of traditional migration concerns the Nubians who leave ample employment opportunities in their home governorate, Aswan, to be filled by other in-migrants from neighbouring governorates. This feature seems to be

at odds with the principles of distance and 'intervening opportunities' axiomatic for the theory of migration.<sup>(3)</sup>

The statistical data enable us to distinguish various clear migration currents from Upper Egypt. From South Upper Egypt (the governorates of Asyut, Sohag, Qena and Aswan) these run respectively to Cairo, to Alexandria, to the Suez Canal area, and to the Red Sea coast and the Sinai peninsula; and from North Upper Egypt (the governorates of Minya, Beni Suef and Faiyum) to Greater Cairo, and within South Upper Egypt itself, from the governorate of Qena to the governorate of Aswan. Migration currents away from Delta can be traced from the Delta to Greater Cairo, from East Delta to the Suez Canal area, from West and North Delta to Alexandria, and within the Delta itself, from South to North (see Figure 6.2).

#### 6.4 Rural-Urban Migration

Rural-urban migration is one of the most powerful and consistent forces in Egypt.<sup>(4)</sup> Modern urban growth in Egypt is obviously too considerable to be accounted for by natural increase alone, migration must also have played a decisive role. Table 6c gives the percentage of the local-born and non local-born inhabitants of the urban governorates during the period between 1947 and 1966.

It will be seen that town size has much to do with volume of in-migration: it is the bigger towns that draw the greater flow of migrants. It is clear that a major proportion of the urban population has been the result of



TABLE 6c

The Percentage of the Local-born and the Non Local-born Inhabitants of the Urban Governorates, 1947-66

Governorates	1947		1960		1966	
	Local-born	non Local-born	Local-born	non Local-born	Local-born	non Local-born
Cairo	70.8	29.2	71.6	28.4	78.7	21.3
Alexandria	82.2	17.8	80.4	19.6	83.6	16.4
Port Said	79.9	20.1	83.6	16.4	90.2	9.8
Suez	58.3	41.7	65.3	34.7	68.3	31.7

internal migration. The most prominent case is Suez, with more than one-third of its inhabitants between 1947 and 1966 born elsewhere. Next comes Cairo, with more than 21 per cent of its population in-migrants. The significance of Suez in attracting in-migration is the consequence of the establishment there, during the last war, of vast military bases with a great demand for labour. The percentage of in-migrants to Cairo was about 40 per cent of the total in-migrants within the country in 1947, 1960 and 1966. In contrast population movements to other towns are mere ripples. Internal migration has, therefore, been not only mainly city-ward but specifically "Cairo-centric".<sup>(5)</sup> As everywhere else, the pull of the capital has dominated the movement of population.

Four factors controlling the structure of rural-urban migration can be discerned:

- (a) The centrifugal force of the rural governorate, i.e., pressure of population.

- (b) The centripetal force of the urban centre, i.e. its magnitude, potentials and magnetism.
- (c) The physical distance between place of origin and place of destination, i.e. proximity or otherwise to big towns.
- (d) The function of migration, i.e. the traditional habits and occupations of the place both of origin and destination.

The influence of the centrifugal force is evident in the close correlation between population densities and migration. The greater the density, the heavier the outflow to the whole of Egypt as well as to the urban governorates. For example, Minufiya in Lower Egypt and Sohag in Upper Egypt have high densities and they are responsible for more than one-fifth of the total out-migrants within the country. In rural areas, where natural increase is greater than in the cities, those who are added each year to the under-employed population are not absorbed locally and try to find an outlet by moving to the cities. The majority of rural families have insufficient and fragmented agricultural holdings, which do not provide for their basic sustenance, and there are not many opportunities for non-agricultural work. Moreover, there is an unequal distribution of land and the number of landless farmers is comparatively greater than those who own land. The solid correlation between the percentages of outflow to all Egypt and of that to the urban governorates confirms

that the population movements in Egypt are city-dominated.

The influence of the centripetal force sheds much light on this differential. It is reflected in the fact that, with certain exceptions, the majority of migration figures from each governorate decrease from the bigger-sized urban destinations to the smaller-sized ones. Industrialized development in the cities attracts people, while the continuous mechanization of agriculture brings about displacement and exodus from the rural areas. Moreover, the expansion of communications encourages the desire for settlement in more civilized environments. The geographical distribution of educational institutions - especially those of the higher level - is not proportionate to the distribution of the population in the country, while a continually increasing number of young people in the rural areas seek education. The growth of commerce, banks, tourism, communications and public services in the cities absorbs a large number of the people who move into them. There is, too, an increasing difference in average income as between rural and urban areas, which has attracted many from the rural areas who seek higher wages and a better and more prosperous life.

The distance between origin and destination of any migratory movement is a primary modifier of the centripetal control. Thus proximity to the urban centre wholly predominates in the case of Cairo with relation to Minufiya, Qalyubiya and Giza; while Alexandria has an exclusive position with contiguous Beheira. Similarly the Canal towns

exercise an attraction disproportionate, one would have thought, to their size over neighbouring Daqahliya and Sharqiya. The factor of proximity joins forces with that of urban size in the migratory relationship of most governorates of Upper Egypt to Cairo. Of the four urban governorates, Cairo is the nearest to any Upper Egypt governorate. It is at the same time the greatest and most influential centre of urban attraction in Egypt.

Out-migration from the 'far south' of Upper Egypt can be analysed by the functions of migration. Sohag and Qena governorates specialise in exporting labour to Canal towns as well as to metropolitan Cairo and Alexandria. Aswan has traditionally had a reputation as the purveyor-in-ordinary of personal servants, waiters, etc., and such workers are naturally attracted to Cairo and Alexandria, with their dominant middle-class population.

#### 6.5 Cairo: In and Out-Migration

Cairo owes its importance to its population and its prosperity, to its antiquity and its historical prominence, and so it rightly deserves to be called the historic capital of Egypt. With the centralization there of authority and administration, Cairo is in addition the political capital of the country, and it is the economic capital of Egypt in that it serves as intermediary between the production of the country and its demands from abroad.<sup>(6)</sup> It need cause little surprise then that its population has grown rapidly in the twentieth century, as it has acquired through its

functions a centripetal force which attracts the inhabitants of other parts of the country.

Migration has played a major part in the growth of Cairo. (7) Table 6d shows clearly that the net gain of Cairo from the interchanges of population with the other governorates rose from 606,561 in 1947 to 952,663 in 1960. The total inflow was 1,142,850 in 1966 whilst the total outflow was 244,635. This means a net gain of 898,215 equivalent to slightly more than one-fifth of Cairo's total population.

TABLE 6d

The Number of In and Out-Migrants,  
Cairo Governorate, 1947-66

Date of Census	Total Population	In-Migrants	Out-Migrants	Net Migration	% of the Total Population
1947	2,275,914	701,493	94,932	606,561	29.2
1960	3,352,532	1,194,266	241,603	952,663	28.4
1966	4,219,853	1,142,850	244,635	898,215	21.3

Both Table 6e and Figure 6.3 make it clear that while Cairo in 1966 drew from and contributed to the whole of Egypt, its interchanges were particularly intense with the surrounding governorates Qalyubiya, Minufiya, Sharqiya and Giza. It is natural that all four governorates should have attracted a considerable number of Cairo dwellers as well as adding to the growth of population in the metropolis itself, by virtue of their geographical proximity to it.

TABLE 6e  
Lifetime In-migrants to Cairo Governorate, 1966

Governorate	Male		Female		Total	
	Number	%	Number	%	Number	%
Alexandria	22,634	3.71	24,001	4.50	46,635	4.08
Port Said	5,303	0.87	5,235	0.98	10,538	0.92
Ismailia	4,061	0.66	4,061	0.76	8,122	0.71
Suez	3,383	0.55	3,519	0.66	6,902	0.60
Damietta	8,795	1.44	8,102	1.52	16,897	1.48
Daqahliya	46,686	7.65	41,291	7.75	87,977	7.70
Sharqiya	45,640	7.48	40,182	7.54	85,822	7.51
Qalyubiya	46,817	7.67	42,290	7.94	89,107	7.80
Kafir el Sheikh	5,501	0.90	5,929	1.11	11,430	1.00
Gharbiya	45,225	7.41	47,155	8.85	92,380	8.08
Mnufiya	109,220	17.91	99,414	18.66	208,634	18.26
Behaira	12,114	1.99	12,641	2.37	24,755	2.17
Giza	24,882	4.08	24,001	4.50	48,883	4.28
Beni Suef	19,185	3.15	16,855	3.16	36,040	3.15
Faiyum	19,316	3.17	17,985	3.38	37,301	3.26
Minya	23,115	3.79	18,375	3.45	41,490	3.63
Asyut	55,352	9.08	40,096	7.52	95,448	8.35
Sohag	53,606	8.79	40,943	7.68	94,549	8.27
Qena	33,395	5.48	23,588	4.43	56,983	4.99
Aswan	20,648	3.39	13,358	2.51	34,006	2.98
Red Sea	219	0.04	217	0.04	436	0.04
New Valley	3,405	0.56	2,650	0.50	6,055	0.53
Matruh	3,327	0.05	391	0.07	718	0.06
Sinal	1,090	0.18	652	0.12	1,742	0.15
<b>Total</b>	<b>609,919</b>	<b>100.00</b>	<b>532,931</b>	<b>100.00</b>	<b>1,142,850</b>	<b>100.00</b>

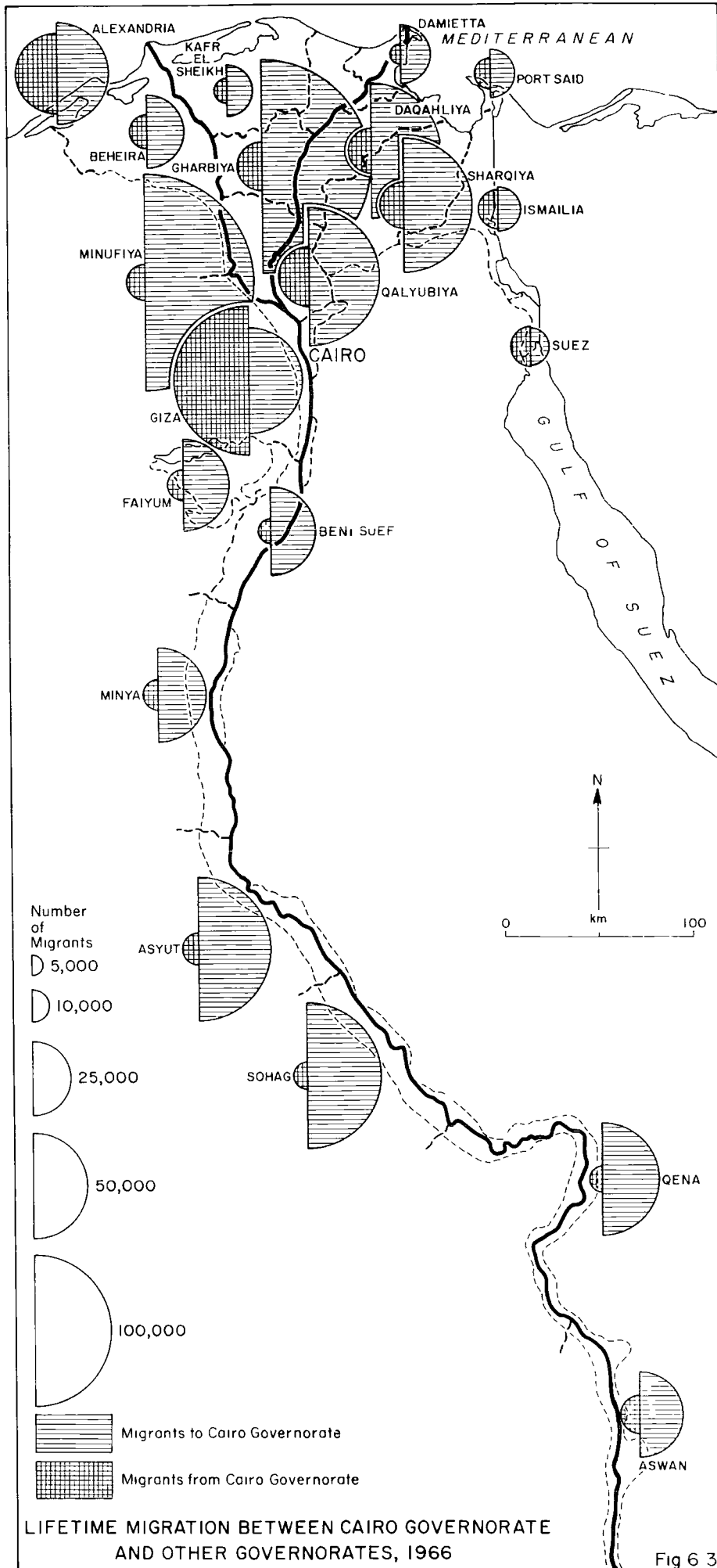


Fig 6 3

The greatest influx into Cairo however, occurred from the adjacent Minufiya governorate which contributed 208,634 or 18.3 per cent of the total number of in-migrants. The percentage of migrants drawn into Cairo from the three governorates of Minufiya, Qalyubiya and Giza was 30.34 of the total in-migrants.

It is also noticeable that Lower Egypt contributed 60.78 per cent of the total migrants, more than one and a half times the percentage for Upper Egypt (39.22 per cent). Both distance and geographical location are factors which may be important in accounting for this difference. Located near the apex of the Nile Delta, Cairo is much nearer to the Mediterranean littoral than to the Egypto-Sudanese boundaries in the South. All the governorates of Lower Egypt lie therefore within a range of 170 kilometres from Cairo. Aswan city on the other hand, is 965 kilometres away from Cairo. It seems clear, then, that the fan-like extension of the Delta makes Cairo much more accessible to the Delta governorates than to those of the rest of the country, which are in a linear extension from the capital.

Distance and geographical location however, are modifying factors rather than determinants,<sup>(8)</sup> for migration in 1966 (and also in 1960 and 1947) behaved according to the accepted generalization about rural-urban population movements. Congested governorates lost population, and larger proportions of population, than governorates with low population density. An analytical study of population densities in rural governorates sheds some light on this generalized

assumption. The four governorates of Qalyubiya, Gharbiya, Minufiya and Giza had population densities exceeding 1,000 inhabitants per square kilometre. As could have been predicted, then, all four of them lost a considerable proportion of their population to the nearby metropolis. The three governorates of Asyut, Sohag and Qena in Upper Egypt also had high population densities. To the out-migrants from these governorates, more alluring and profitable means of subsistence were to be found in the cities and particularly in Cairo. This accounts for the high percentage of migrants drawn into Cairo from these governorates (21.61 per cent of the total number of in-migrants). Cairo attracted, too, a considerable number of migrants from Aswan, amounting in 1966 to more than 34,000 or about 3 per cent of the total number of migrants to the capital.

As regards the pattern of out-migration away from Cairo, Table 6f reveals that Lower Egypt attracted 44.14 per cent of the total number of Cairo dwellers who moved to live away from the city, as compared with 53.96 per cent in Upper Egypt. The majority of out-migrants from Cairo seem to have been in administrative, technical or commercial employment. It is to be noted, however, that the detailed pattern of distribution of these out-migrants about the country depended on a complex of factors, namely, distance from Cairo, living conditions outside the metropolis itself, and the attitude of the governorate's native population towards them. Thus Damietta with an economy entirely in the hands of its native inhabitants, attracted only

TABLE 62

Lifetime Out-migrants from Cairo to other Governorates, 1966

Governorate	Male		Female		Total	
	Number	%	Number	%	Number	%
Alexandria	16,331	14.07	16,458	12.80	32,789	13.40
Port Said	1,799	1.55	2,402	1.87	4,201	1.72
Ismailia	3,157	2.72	3,758	2.92	6,915	2.83
Suez	3,395	2.93	4,073	3.17	7,468	3.05
Damietta	946	0.82	927	0.72	1,873	0.77
Daqahlia	2,333	2.01	2,741	2.13	5,074	2.07
Sharqia	4,291	3.70	4,691	3.65	8,982	3.67
Qalyubiya	8,040	6.93	9,265	7.20	17,305	7.07
Kafir el Sheikh	1,410	1.22	1,457	1.13	2,867	1.17
Gharbiya	4,475	3.86	5,353	4.16	9,828	4.02
Minufiya	1,968	1.70	3,526	2.74	5,494	2.25
Behaira	2,866	2.47	2,317	1.80	5,183	2.12
Giza	49,331	42.51	53,496	41.60	102,827	42.03
Beni Suef	1,507	1.30	1,682	1.31	3,189	1.30
Faiyum	1,855	1.60	2,535	1.97	4,390	1.79
Minya	1,994	1.72	2,249	1.75	4,243	1.73
Asyut	2,013	1.73	2,562	2.00	4,575	1.87
Sohag	1,256	1.08	2,156	1.68	3,412	1.40
Qena	1,169	1.01	1,388	1.08	2,557	1.05
Aswan	3,440	2.96	3,379	2.63	6,819	2.79
Red Sea	399	0.34	572	0.44	971	0.40
New Valley	486	0.42	459	0.36	945	0.39
Matruh	237	0.20	212	0.16	449	0.18
Sinat	1,337	1.15	942	0.73	2,279	0.93
Total	116,035	100.00	128,600	100.00	244,635	100.00

0.77 per cent of the total number of out-migrants. Giza governorate, by contrast, attracted the highest number (102,827 or 42.03 per cent of the total number of the out-migrants from Cairo); this is understandable when it is known that Giza has acquired the functions of a metropolitan satellite, as a consequence of improvement of transportation facilities and the presence there of Cairo University. Cairo gained in 1966 about 4.1 per cent of its total immigration from Alexandria. The number of Alexandrians residing in Cairo represented approximately 48.8 per cent of the total number of out-migrants from Alexandria. Giza, Suez, Red Sea and Sinai governorates were the only areas which gained population from Cairo (see Table 6g).

These rural migrants to Cairo are of two quite distinct types: the first, high in quality though low in number, consists of intelligent youths who migrate in search of education or wider opportunities. These have both the energy and the facility for rapid assimilation of a strange environment which ensures their easy accommodation to the culture of the city. The second type, comprising what will be referred to here as the "non-selective" migrants, is drawn primarily from among the poor of the villages. Numerically dominant, they are as much driven from the village by lack of land and opportunity as attracted to the city.

It is possible for migrants to live in any of the large sections of the city which retain the basic characteristics of village life. The typical migrant, to Cairo as

TABLE 6g

Net Lifetime Migration,  
Cairo Governorate, 1966

Governorate	Male	Female	Total
Alexandria	+ 6,303	+ 7,543	+ 13,846
Port Said	+ 3,504	+ 2,833	+ 6,337
Ismailia	+ 904	+ 303	+ 1,207
Suez	- 12	- 554	- 566
Damietta	+ 7,849	+ 7,175	+ 15,024
Daqahliya	+ 44,353	+ 38,550	+ 82,903
Sharqiya	+ 41,349	+ 35,491	+ 76,840
Qalyubiya	+ 38,777	+ 33,025	+ 71,802
Kafr el Sheikh	+ 4,091	+ 4,472	+ 8,563
Gharbiya	+ 40,750	+ 41,802	+ 82,552
Minufiya	+ 107,252	+ 95,888	+ 203,140
Beheira	+ 9,248	+ 10,324	+ 19,572
Giza	- 24,449	- 29,495	- 53,944
Beni Suef	+ 17,678	+ 15,173	+ 32,851
Faiyum	+ 17,461	+ 15,450	+ 32,911
Minya	+ 21,121	+ 16,126	+ 37,247
Asyut	+ 53,339	+ 37,534	+ 90,873
Sohag	+ 52,350	+ 38,787	+ 91,137
Qena	+ 32,226	+ 22,200	+ 54,426
Aswan	+ 17,208	+ 9,979	+ 27,187
Red Sea	- 180	- 355	- 535
New Valley	+ 2,919	+ 2,191	+ 5,110
Matruh	+ 90	+ 179	+ 269
Sinai	- 247	- 290	- 537
Total	+ 493,884	+ 404,331	+ 898,215

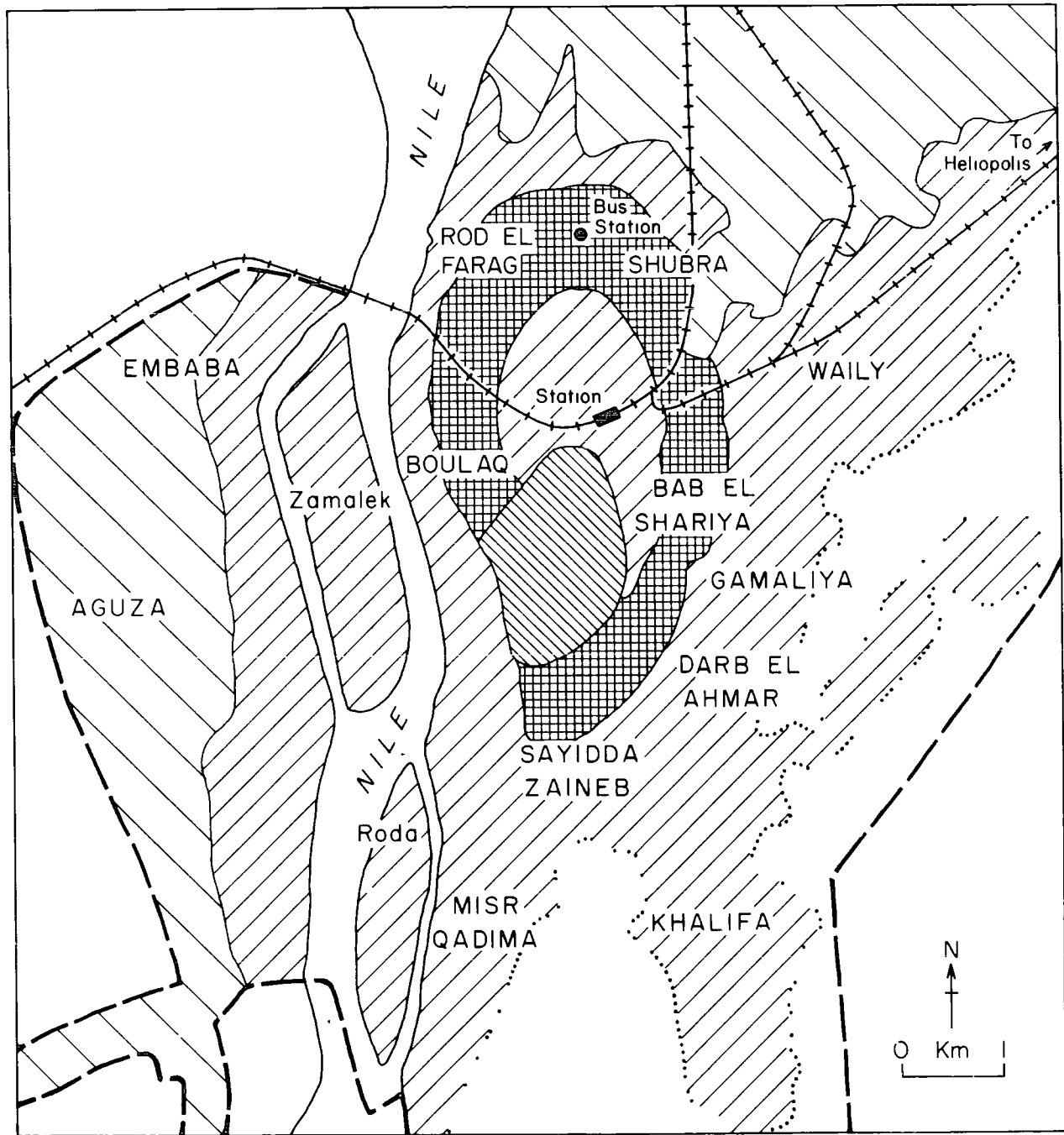
elsewhere, is a young, unskilled male, whose first contact in the city is often with a friend or relative from his home village, with whom he may even spend the first few nights. Later, more permanent lodgings are found, usually within the same neighbourhood. This process, in the aggregate, results in a concentration of migrants from particular villages within small subsections of the city, to a degree much beyond what chance might produce.





It is clear from Figure 6.4 that rural migrants seem to be concentrated in particular areas. Most associations fall within the elliptical belt encircling but never within the central business district. The arc contracts both east and west to a bare quarter of a mile from the central business district and expands north and south to a distance of more than a mile from the city centre.

One-third of the migrant associations cluster in the segment of the city which radiates northward from the central business district, circumscribed south and east by major rail lines, and bounded by the Nile to the west and an agricultural zone to the north. This section has two sub-areas of densest concentration: the first in the vicinity of the Khazindar bus station; the other in Al Sharabiya, north east of the main train terminal.

The Khazindar bus station has served since the twenties as the terminus of bus lines connecting Lower Egyptian governorates with Cairo. Within a radius of a quarter of a mile of this station are eight village associations, all representing Delta villages; within half a mile there are sixteen associations, ten actually concentrated in a four-by-

Fig 6 4  
 MAJOR DISTRICTS AND LOCATION OF MIGRANT ASSOCIATIONS WITHIN CAIRO



- |                              |   |  |
|------------------------------|---|--|
| — Cairo house tax boundary   |  Central business district                             |  Built-up area |
| ..... Limit of built-up area |  Zone of maximum concentration of Migrant Associations |  Urban fringe  |

six block area just northeast of the station. This area has a strange mixture of urban and rural features. Behind the main street in which the station stands, there are narrow unpaved streets and alleys of prematurely dilapidated urban housing interspersed with the rural type of structure. The two- and three-storey buildings contrast markedly with the six- to eight-storey structures which dominate the main street. A cluster of black-garbed women squat to gossip; old men sit in doorways; a sheep bleats; children swarm in packs. When this area was first heavily settled by migrants, it was on the very edge of the urban settlement. As recently as 1940 there were farms just to the north. By now, however, the city has grown beyond it.

The second concentration of migrant associations is located in the tiny quarter of Al Sharabiya, where seven associations, almost all from the Delta villages, are to be found within four blocks. Occupationally, many residents are bound to the railway yards that virtually surround it. Despite its geographically central location, this section presents a distinctly rural aspect and retains a close functional tie with the rural fringe, since farms bound it where railway lines do not. Lower buildings, some of mud brick, predominate. The commercial establishments are of the kind one might expect in the large village or small town. Al Sharabiya and Khazindar areas have between them most of the migrant associations of the city's northern quadrant.

Most of the associations in this quadrant are of migrants from Lower Egyptian villages. Hence many migrants

have presumably settled close not only to their point of origin but, even more specifically, close to their point of entry into the city, i.e., the bus terminal. Moreover, the migrants settling in this part of the city clearly selected areas which were, at the time of settlement at least, on the outer edge of the built-up city.

Another third or more of the migrant associations are clustered directly south of the central business district, quite distant from the southern rural-urban fringe. The densest concentration is found in the transitional business district - a curved interstitial belt buffering the Western-style commercial zone north and west of it from the native market and residential quarters to its south and east. Twenty-five associations are located in this zone, while the remainder are scattered farther south towards Old Cairo.

Most striking is the fact that the majority of these associations represent villages of Upper Egypt. Thus the principle of least effort seems to determine migrant distribution. Villagers coming from north of the city favour its northern quadrant, while those coming from the south prefer the southern quadrant. But, whereas the former have their associations in family residential zones near the city's fringe, the latter have settled in a marginal commercial district characterized by a heavy excess of unmarried males. Further examination reveals that the latter are primarily in rented offices, whereas the former are frequently in the home of the association's president.

Migrants from Delta villages follow a different pattern of migration and hence make a different type of adjustment to the city than that made by migrants from Upper Egyptian villages. First, migrants from the Delta move primarily in family groups, while those from Upper Egypt either remain single or leave their wives and children in their home villages. In Cairo in 1966, of the 689,199 migrants from Lower Egypt, there were roughly equal numbers of males and females, but 249,499 out of the 444,700 migrants from Upper Egypt were males. Thus the sex ratio of Delta migrants in Cairo was remarkably balanced (106.5), while the sex ratio of Upper Egyptian migrants was 127.8.

Second, significant occupational differences between the two migrant groups affect both adjustment patterns and spatial distribution. Upper Egyptian migrants go primarily into domestic and other personal services or work in unskilled labour gangs, while the occupations favoured by Lower Egyptian migrants are both more varied and less likely to include housing as part of the wages.

In the light of this, the major differences between the location of migrant associations representing Upper and Lower Egyptian villages become more comprehensible. The associations of Upper Egyptians are located in an area which serves as a leisure-time focal point as well as a residential area catering to single men. This is both cause and effect of the character of Upper Egyptian migrants. The associations play a more active role in their lives, in part because their members are denied access to the alternative social unit, the family.

The remaining associations are to be found in the east and west of the central business district. They are divided between Boulaq, which forms the western quadrant of the ellipse, and Bab el Shariya and Waily, the eastern portion of the belt. Just as the ecological position of these areas is midway between the northern concentration of Delta village associations and the southern concentration of Upper Egyptian associations, so they are at mid-point sociologically, containing associations from both regions of the country in roughly equal proportion. They share still other similarities. Both are close to the central business district; both rank low in socioeconomic status; both are primarily family areas, and both contain the densest slums of the city, densities of up to 74,823 persons per square kilometre are recorded for Boulaq, and the overall density of the community area of Bab el Shariya is the highest in the city (139,210 persons per square kilometre in 1960). Of the two, Boulaq is the older and hence the more rural in its buildings and streets, but even Bab el Shariya, despite its uniformly tall apartment buildings looming above narrow access alleys, houses a population more rural than urban in its ways.

These, then, are the areas to which migrants have gravitated within the city. That such areas are scarcely to be found in the highest rental zones of the city is attributable to their low socioeconomic status. Migrants are relatively absent, also, from the rural-urban fringe proper which would provide them with the most familiar

and protective environment. The lack of rented housing in these areas, the dearth of public transport, and their desire to live close to their new jobs are undoubtedly important reasons for their neglect of these areas.

Migrants often depend upon their compatriots to guide them to their first jobs. Sometimes, they seek out the well-known "local boy made good" from their home village to ask him for employment, so they cluster together not only residentially but also at their work.

## 6.6 Migration and Industrialization

In 1947, the geographical distribution of manufacturing industry in Egypt was characterized by a relatively high localization in three governorates; Cairo and Alexandria in addition to Gharbiya (the main centre of the textiles industry at that time). Nearly half the entire manufacturing labour force (50.3 per cent) was absorbed by these three governorates. The other half was distributed more or less evenly throughout the rest of the governorates. In most of these governorates, manufacturing industry was to be found; a modest presence, however, employing an average of between 3 and 5 per cent of the total manufacturing labour force (see Table 6h).

It is convenient to trace the government policy in the selective location through the examination of the geographical allocation of manufacturing investment. The available data cover only the two periods 1957-59/60 and 1960/61-1964/65. During the period of the First Industrial Programme, November, 1957 - June, 1960, the geographical alloc-

TABLE 6h

Geographical Distribution of Manufacturing Employment  
(1947, 1960, 1964 and 1967)

(in percentage)

Governorates	1947	1960	1964	1967
Cairo	26.7	26.6	28.6	26.7
Alexandria	11.4	19.1	17.9	18.2
Port Said )		0.9	1.2	1.1
Ismailia )	1.7	0.4	0.2	0.5
Suez	0.6	1.0	1.6	2.2
Damietta	1.1	1.9	2.0	2.3
Daqahliya	5.5	3.1	2.9	3.4
Sharqiya	3.9	2.3	1.6	2.6
Qalyubiya	4.7	8.6	9.7	8.7
Kafr el Sheikh )		1.0	1.0	1.2
Gharbiya )	12.2	9.5	8.5	8.2
Minufiya	4.3	1.7	2.3	2.6
Beheira	4.3	5.7	5.6	4.9
Giza	4.3	6.0	7.6	6.3
Beni Suef	1.5	0.9	0.8	1.1
Faiyum	3.6	1.1	1.0	1.3
Minya	2.9	1.8	1.7	2.2
Asyut	3.5	1.5	1.2	1.7
Sohag	3.1	1.5	1.2	1.5
Qena	3.8	2.2	1.7	2.2
Aswan	0.7	1.2	1.5	1.0
Frontier Govs.	0.2	2.1	-	0.1
Total	100.0	100.0	100.0	100.0

Source: (a) Department of Statistics and Census, Census of Population, 1947, Vol.2, Cairo, 1952 (in Arabic).

(b) C.A.P.M.S., Census of Establishments, 1960, Vol.2, Cairo, 1964. (in Arabic).

(c) C.A.P.M.S., Census of Establishments, 1964, Vol.2, Cairo, 1967. (in Arabic).

(d) C.A.P.M.S., Census of Establishments, 1967, Vol.2, Cairo, 1969. (in Arabic).

ation of manufacturing investment was heavily concentrated. Greater Cairo (Cairo in addition to neighbouring areas in Qalyubiya and Giza governorates) absorbed alone more than one-third of the total manufacturing investment. If there is added to this sum investment allocated to the other two main manufacturing centres (Alexandria and Gharbiya) the share of government investment received by the three governorates increases to more than half the total (53.3 per cent). Outside these three traditional manufacturing centres, relatively generous investment was made in Suez and Aswan governorates. By contrast, the remaining governorates - excepting Beheira and Qena - attracted little or no investment for industrial development (see Table 61).

During the period 1960/61 - 1964/65, one of the aims of the industrial plan was to distribute industry whenever possible among the different regions of the country. This aim was partly achieved, as manufacturing investment, although still to some extent concentrated in particular areas, was relatively better distributed among the different governorates than during the period 1957-1959/60. Of the three main traditional manufacturing centres, Gharbiya received a slight share of the total manufacturing investment, while the shares of the other two governorates were relatively high. Cairo with the addition of the two adjacent governorates of Giza and Qalyubiya and Alexandria received a little less than half the total investment (47.8 per cent). The two new manufacturing centres (Suez and Aswan), in addition to Qena, absorbed a little more than a

TABLE 61

Percentage Distribution of Manufacturing Investment by Governorates  
(during the two periods 1957 - 1959/60 and 1960/61 - 1964/65)

Governorates	1957- 1959/60	1960/61- 1964/65	Categories of Manufacturing Investment during 1960/61 - 1964/65					Small-Rural Industries
			Chemicals & Petro- Chemicals	Engin- eering	Food	Met- allic	Text- iles	
Cairo	37.8	14.3	3.3	53.4	3.5	13.9	1.4	21.3
Alexandria	10.9	13.3	19.6	19.3	2.8	2.7	8.4	0.4
Port Said	0.7	1.0	0.0	3.3	0.5	0.0	2.1	0.5
Ismailia	0.2	1.9	4.0	0.8	0.7	0.0	0.0	1.7
Suez	17.4	10.4	19.4	8.7	0.4	7.1	0.0	0.0
Damietta	0.4	0.7	0.4	0.1	1.9	0.0	2.0	2.9
Dagahlia	1.0	1.1	0.4	0.1	2.2	0.0	5.0	2.8
Sharqia	1.7	0.5	0.0	0.0	0.9	0.0	1.8	11.3
Qalyubiya	3.5	5.8	4.3	8.9	1.3	1.2	8.7	3.5
Kafr el Sheikh	0.1	0.2	0.2	0.1	0.5	0.0	0.0	1.4
Gharbiya	4.6	1.9	0.5	0.1	2.4	0.0	10.7	1.8
Minufiya	0.0	2.1	0.0	0.1	0.5	0.0	15.9	1.3
Behaira	2.5	3.3	0.0	0.1	4.5	0.0	21.9	2.2
Giza	0.1	14.4	10.4	3.6	10.8	64.0	0.1	7.4
Beni Suef	0.0	0.4	0.0	0.1	0.1	0.0	4.1	1.6
Faiyum	0.0	0.4	0.0	0.1	0.5	0.0	2.9	1.6
Minya	0.7	1.1	0.0	0.1	0.5	0.0	3.0	5.8
Asyut	0.7	1.8	1.7	0.1	0.9	0.0	8.2	4.7
Sohag	0.1	0.3	0.0	0.1	0.2	0.0	0.0	2.8
Qena	3.8	3.9	0.3	0.1	4.4	0.0	3.9	3.3
Aswan	13.8	11.8	17.2	0.1	36.1	0.0	0.0	2.6
Frontier Govs.	0.0	0.2	0.0	0.0	1.7	0.0	0.0	0.0
Unspecified Localities	0.0	9.3	18.2	1.0	2.4	11.0	0.0	18.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: (a) Beshara, A., Planning Industrial Location in the U.A.R., Institute of

National Planning, Cairo, 1965, pp.3-8 (in Arabic)

(b) Institute of National Planning, Final Report on Employment Problems in

Rural Areas U.A.R., Cairo, 1965, p.63

quarter of the total investment (26.1 per cent), and the residual amount was spread unevenly among the remaining governorates. It is worth noting that most of the investments allocated to chemical, petroleum products, metal and engineering industries were located in Cairo, Alexandria, Giza and Qalyubiya in addition to the two new manufacturing centres, Aswan and Suez governorates; while most of the investment in the other governorates was in textiles and food products industries (see Table 6i).

The influence of industrial development on internal migration is here studied only from the point of view of employment, because of the lack of income data at a regional level.

The governorate's level of industrialization is measured by the proportion of its population in industrial employment. It is clear from Table 6j that the general level of industrialization declined from 3.5 per cent in 1947 to 2.7 per cent in 1960 to 2.5 per cent in 1964. This was the result of a rapid increase in the population not matched by the rate of increase in manufacturing employment. This phenomenon is to be observed in most of the governorates, the only exceptions being Qalyubiya and Giza in addition to Suez and Aswan, where the level of industrialization rose from 1947 to 1964, no doubt as the result of the special attention paid to their development as new manufacturing centres.

During the period 1947-1964, the two main urban govern-

TABLE 6j

Percentage of Total Population Employed in Manufacturing,  
by Governorates in 1947, 1960 and 1964

Governorates	1947	1960	1964
Cairo	8.5	6.0	5.0
Alexandria	8.2	7.4	7.4
Port Said )	4.5	2.8	2.9
Ismailia )		1.2	0.5
Suez	4.0	4.0	4.4
Damietta	13.3	4.2	3.5
Daqahliya	2.6	1.5	0.9
Sharqiya	1.9	1.3	0.6
Qalyubiya	4.5	3.6	5.9
Kafr el Sheikh )	3.5	1.1	0.7
Gharbiya )		3.5	3.3
Minufiya	2.4	1.4	1.2
Beheira	2.3	2.1	2.1
Giza	3.4	3.2	3.5
Beni Suef	1.6	1.0	0.6
Faiyum	3.4	1.9	0.8
Minya	1.8	1.1	0.7
Asyut	1.7	1.1	0.6
Sohag	1.6	1.1	0.5
Qena	2.3	1.6	0.8
Aswan	1.7	1.9	1.8
Frontier Govs.	0.7	0.9	-
Total	3.5	2.7	2.5

Source: (a) Department of Statistics and Census, Census of Population, 1947, Vol.2, Cairo, 1952 (in Arabic).

(b) C.A.P.M.S., Census of Establishments, 1960, Vol.2, Cairo, 1964. (in Arabic)

(c) C.A.P.M.S., Census of Establishments, 1964, Vol.2, Cairo, 1967. (in Arabic)

(d) C.A.P.M.S., Population Estimates in the U.A.R. Cairo, 1967 (in Arabic).

orates, Cairo and Alexandria, exhibited the highest levels of industrialization, of 5.0 per cent or more. The governorates of the Canal Zone, particularly Suez, in addition to the rural governorates (Qalyubiya, Giza, Damietta and Gharbiya) recorded moderate levels of industrial growth, ranging up to 3.0 per cent or more, Qalyubiya and Giza benefiting from their proximity to Cairo. Damietta was a main old harbour, and Gharbiya the main textile manufacturing centre. The remaining governorates had in general very low levels of industrialization.

An examination of the movement of population illustrates that the rates of in-migration are considerably larger than the rates of out-migration in the urban governorates. These governorates have experienced relatively very high positive net migration rates, and have achieved relatively high or at least moderate levels of industrialization, as has been noted before. At the same time, they are now the main centres of a variety of other activities and services. In contrast, in the rural governorates both of Lower and Upper Egypt the rates of in-migration were lower than the rates of out-migration with the exception of Ismailia, Sharqiya, Giza, Red Sea and Sinai (in 1947); Ismailia, Giza and Red Sea (in 1960); and Ismailia, Giza, Aswan, Red Sea and Matruh (in 1966). During the World War II, there was a high migration to Sharqiya where there were opportunities for work in British Camps. Some of the war-time migrants, after the end of the war, settled where they were. Giza governorate has achieved a moderate level of

industrialization and has the largest university in the country as well as a variety of different services catering for tourists. The special case of Aswan in the 1966 returns was the consequence of the High Dam project and its associated services and industries. The highest in-migration rates and consequently positive net migration rates were found in the Canal Zone governorates, particularly Suez. This was not only due to industrial activity, but also, more importantly, to the Suez Canal traffic as well as to the establishment there of British Camps in 1947.

The highest out-migration rates and consequently negative net migration rates are found in Minufiya and Sohag governorates. They cannot be explained as the result of a lack of industrial activity, but are rather the result of the relatively high density of population and the very low per capita availability of agricultural land.

Relatively high ratios both of in- and out-migration obtained in Aswan and the frontier governorates. The natives of Aswan prefer work in service industries in the main urban centres, leaving the work of building, construction and factories to migrants from other governorates. The mostly mining activity in frontier governorates demands technicians and experts from other governorates while part of the native population can find different opportunities for work in other governorates.

Calculating the correlation between the levels of industrialization in different governorates - without exclusion of any - and internal migration, we observe from Table 6k

that the general relation between them is a positive one. This means that the two phenomena are working generally in the same direction; the relative increase in the level of industrialization in certain governorates, is accompanied by a positive net migration into this governorate and the relatively low level in another governorate by a negative net migration. This result holds true for each of the years examined.

TABLE 6k

Correlation Between Governorate levels of Industrialization and Inter-Governorate Migration

	1947	1960	1960-65
The First Case	0.09	0.54	0.56
The Second Case	0.70	0.56	0.59
The Third Case	0.92	0.77	0.65

- The first case includes all the governorates without any exclusion.
- The second case excludes Sharqiya governorate from 1947 data in addition to Minufiya, Damietta and frontier governorates from the data of the indicated years.
- The third case excludes, moreover, Canal Zone governorates.

The relation between the two phenomena was not pronounced in 1947 and only moderately so in the following years. In 1960 and 1960-65 the degree of correlation between the governorates' levels of industrialization and inter-governorate rates of net migration was also a moderate

one. This means that there is a correlation between the two phenomena but not of any emphatic sort. In 1947, the degree of correlation was low because the data of migration were distorted by the internal movements of population as a result of the work offered in British Camps in certain governorates. This temporary distortion affected the degree of correlation between the governorates' levels of industrialization and the internal movements of population in that year.

Better defined conclusions can be arrived at if certain governorates are excluded from this analysis. Firstly, Sharqiya (where a major proportion of the British Camps were situated) is excluded from the 1947 data, and then data for Minufiya, Damietta and frontier governorates are excluded from the analysis of all studied years. Secondly, the governorates of the Canal Zone are excluded, since manufacturing was not the main activity there, but rather the Suez Canal traffic and the 1947 British Camps. With each of these exclusions the degree of correlation increases. The corrective effect for 1947 is greater than for the other years because of the relatively more distorted original data.

Excluding the odd governorates, it can be noted that, in 1947, there was a high positive correlation (0.92) between the governorates' levels of industrialization and the intergovernorate rates of net migration. In 1960 and 1960-1965, the correlation between the two phenomena still obtained but to the lesser degree of 0.77 and 0.65 respect-

ively. The decrease in the degree of correlation may be related to a slight decline in the influence of industry on migration as a result of the previously indicated decrease in the percentage share in the total of manufacturing employment in 1960 and 1964 respectively; and consequently the increase in the relative importance of the influence of employment opportunities created by other non-agricultural activities. It is worth making clear that manufacturing industry contributed only 13.1 and 15.8 per cent of the total increase in employment over the two periods 1947-60 and 1959/60 - 1964/65 respectively; while the contribution made by other non-agricultural activities was 59.8 and 43.8 per cent during the two periods respectively.

A positive correlation between the process of industrialization and internal migration has been identified. The degree of correlation, however, slightly declined from 1947 to 1965, perhaps as a result of the relatively fewer employment opportunities in industry as against those offered by other non-agricultural activities. But that decrease did not lose the deserved correlation. It may be said that the effect of industry on internal migration depends on the relative importance of the employment opportunities created in the industrial sector.

The flow of rural-urban migration will be reduced by the creation of more industrial employment opportunities in areas hitherto neglected, thus ensuring a better overall distribution of industrial activity.

## 6.7 Migrants' Characteristics

One important aspect of migration analysis is the characteristics of the migrants, and especially demographic characteristics such as age and sex. Estimates of sex composition of migrants to each governorate between 1960 and 1965 are presented in Table 61. These estimates were based on survival rates computed from life tables of each of the governorates.

Examination of these figures indicates that males and females constituted equal proportions of the in-migrants to the Canal Zone governorates. Males outnumbered females slightly among migrants to Cairo and Alexandria. Among migrants to Aswan and frontier governorates, males greatly outnumbered females. Migration selectivity for males to these governorates is due mainly to the fact that most of the employment available is construction work, industry and mining. The harsh climatic and living conditions in these areas is another factor which explains their migration selectivity for males. Men usually leave their families behind in their home governorates.

Table 6m presents percentage estimates of the age structure of male and female migrants to urban governorates between 1960 and 1965. A large number of migrants to these urban governorates were very young (less than 10 years old). This was the case for both boys and girls. Migration of these young age groups can be explained partly as a forced movement with parents who went to work and live in these urban centres, which may indicate that part of the migration

TABLE 61

Net Migration to Each Governorate by Sex,  
1960 - 65

(number in thousands)

Governorates	Male	Female	Total
Cairo	+ 140	+ 134	+ 274
Alexandria	+ 37	+ 35	+ 72
Port Said	+ 4	+ 4	+ 8
Ismailia	+ 6	+ 6	+ 12
Suez	+ 10	+ 10	+ 20
Damietta	- 6	- 5	- 11
Daqahliya	-	- 2	- 2
Sharqiya	- 9	- 11	- 20
Qalyubiya	- 2	- 4	- 6
Kafr el Sheikh	- 16	- 11	- 27
Gharbiya	- 22	- 23	- 45
Minufiya	- 36	- 38	- 74
Beheira	- 8	- 5	- 13
Giza	+ 23	+ 23	+ 46
Beni Suef	- 29	- 25	- 54
Faiyum	- 14	- 13	- 27
Minya	- 40	- 32	- 72
Asyut	- 4	- 7	- 11
Sohag	- 15	- 13	- 28
Qena	- 31	- 29	- 60
Aswan	+ 14	+ 5	+ 19
Frontier Govs.	+ 3	+ 1	+ 4

Source: C.A.P.M.S., Population Increase in the U.A.R.:  
A Challenge to Development, Cairo,  
1966, p.133 (in Arabic).

TABLE 6m  
Age Structure of Migrants to Urban Governorates, 1960-65  
(Number in thousands)

Migrants Age Structure	Cairo		Alexandria		Port Said		Suez	
	M	F	M	F	M	F	M	F
< 10	36.1	36.1	8.4	8.9	1.2	1.4	4.9	4.5
10 - 19	27.2	37.2	7.8	12.9	1.4	2.1	2.7	2.5
20 - 29	35.5	41.3	8.0	10.5	0.6	1.1	0.5	2.3
30 - 39	26.7	14.4	7.7	3.8	0.9	0.2	2.1	1.1
40 - 49	9.6	2.0	3.7	- 0.1	0.5	- 0.2	- 0.1	- 0.5
50 - 59	1.0	- 0.3	- 0.3	- 0.9	- 0.3	- 0.4	- 0.2	- 0.1
60 - 69	1.4	0.2	0.4	0.1	0.0	0.0	0.1	0.1
70 +	2.5	2.6	1.0	0.1	0.1	0.2	0.1	0.1
Total	+ 140.0	+ 133.5	+ 36.7	+ 35.3	+ 4.4	+ 4.4	+10.1	+10.0

Source: Ibid., p.135

to urban centres was family migration. However, many of these young people moved to the urban centres to work as domestic servants and in other services, which means that at least some of the migration of these age groups was of the individual type. As a general rule, migration to urban governorates was high among the under 30 age groups, and showed a gradual decline between ages 30 and 50, followed by a sudden drop for persons of both sexes aged between 50 and 60. The slight rise which took place after age 60 for both males and females going to these urban governorates was due to the return of many retired persons to live in these urban centres.

Females substantially outnumbered males among migrants in the 10-30 age group, males substantially outnumbered females among migrants in the 30-39 age group, and to a lesser extent among migrants of all subsequent age groups. Males prevailed in rural areas within the 10-29 age group. This may be due to the migration of girls to the cities seeking jobs in domestic service.

For non-urban governorates (Table 6n), Giza is the only governorate attracting male migrants in all ages. The remaining non-urban governorates are considered as sending areas of male migrants; at the top are the governorates of Minya, Minufiya, Qena and Beni Suef. Some of the governorates showed a net migration in the age group 20-49 such as Qalyubiya and Beheira, while Sohag attracted male migrants in the ages less than twenty. The governorates of Sharqiya, Qalyubiya, Beheira and Asyut attracted female

TABLE 6n

Age Structure of Migrants to Non-Urban  
Governorates, 1960 - 65

(number in thousands)

Governorates	-20		20-49		+50		Total	
	M	F	M	F	M	F	M	F
Ismailia	+ 4.1	+ 3.9	+ 1.9	+ 2.0	0.0	0.0	+ 6.0	+ 5.9
Damietta	- 4.4	- 4.3	- 1.5	- 0.5	- 0.1	- 0.6	- 6.0	- 5.4
Daqahliya	0.0	- 1.0	- 0.2	- 0.8	0.0	0.0	- 0.2	- 1.8
Sharqiya	- 4.7	- 9.3	- 1.2	+ 3.5	- 3.1	- 5.4	- 9.0	-11.2
Qalyubiya	- 2.7	- 4.7	+ 2.0	+ 3.6	- 0.8	- 2.9	- 1.5	- 4.4
Kafr el Sheikh	- 8.8	- 5.8	- 6.1	- 3.6	- 1.1	- 2.0	-16.0	-11.4
Gharbiya	-16.3	-15.1	- 2.9	- 2.2	- 2.5	- 5.4	-21.7	-22.7
Minufiya	-25.0	-24.3	- 9.9	- 7.7	- 1.5	- 5.9	-36.4	-37.9
Beheira	- 6.0	- 3.2	+ 1.0	+ 3.0	- 2.7	- 4.7	- 7.7	- 4.9
Giza	+ 8.3	+ 8.5	+13.1	+14.8	+ 1.2	- 0.1	+22.6	+23.2
Beni Suef	-14.2	-16.1	-11.6	- 4.6	- 3.6	- 4.1	-29.4	-24.8
Faiyum	- 3.9	- 7.7	-13.5	- 3.2	- 2.0	- 1.9	-19.4	-12.8
Minya	-20.6	-18.0	-12.2	- 8.7	- 7.0	- 5.3	-39.8	-32.0
Asyut	- 3.9	- 6.8	- 0.2	+ 2.8	+ 0.2	- 3.3	- 3.9	- 7.3
Sohag	+ 3.2	- 2.2	-19.2	- 5.5	+ 1.1	- 4.9	-14.9	-12.6
Qena	-13.2	-19.4	-20.7	- 6.2	+ 3.2	- 3.1	-30.7	-28.7

Source: Ibid., pp. 136-137.

migrants in the 20-49 age group. The rest of the governorates showed a negative net migration.

In addition to demographic differentials, migrants also exhibit social, cultural and personality differences. For example, rural migrants to urban centres are drawn from opposing categories. One category, of high quality but numerically less significant, consists of bright youths who migrate in search of education or wider opportunity. The second consists primarily of the peasants and the poor of the villages. Numerically dominant, they are obliged to leave their villages by scarcity of land and opportunity. Migrant adjustment to city life in Egypt depends not only on place of origin or area of destination, but also on social as well as economic characteristics. It is quite possible, especially in the large metropolis, to distinguish between the recent migrant, the first generation migrant, and the two- or more- generations city-born person.

Long ago urban sociologists distinguished between "urbanism as a way of life" and urbanization as statistical aggregate.<sup>(9)</sup> Urbanism is a stage at which the city has come to represent a distinct and permanent alteration of human thought and behaviour and of social institutions as well. In brief, urbanism refers to people while urbanization refers to places.

In Egypt, there is a great difference between living in cities and leading a distinctively urban way of life. Merely living in the city does not always mean living in

an urban way, for many towns and cities lack a distinctively urban character. From the national point of view, it is possible to identify two patterns of living: urban and rural. This means that within a definitely urban area - Cairo for example - one usually finds some section of the population living according to rural pattern. Conversely, within a rural area one may find some people who are urbanized. "Urban village dwellers" are to be found in urban Egypt, and likewise "village town dwellers" in rural areas.

Urban village dwellers constitute a large proportion of the migrants from rural areas who have been chiefly responsible for Egypt's soaring rate of urbanization. Differences were observed between migrants from Upper Egypt and those from Lower Egypt. Migrants from Lower Egypt move primarily in family groups, while those from Upper Egypt either remain single or leave their wives and children in their home villages. It was observed also that migrants from Lower Egypt make a relatively easy and permanent adjustment to city life, while those from Upper Egypt lack gradual transition. The absence of the mediating influence of the family and neighbourhood prolongs their period of transition and adjustment to urban life.

The village town dwellers are in general rich landowners or traders who move back and forth between rural and urban areas; or government officials and civil servants stationed in villages.

Social scientists have observed that there are several

features of urban and rural life in Egypt which do not bear out generalizations normally made about urban-rural demographic transition. These apparent anomalies may be explained by the fact that urbanization in Egypt and very probably in many other developing countries as well, is not synonymous with urbanism.<sup>(10)</sup> Thus expected rural-urban differences not only fail to materialize but in some cases even reverse differentials have been observed.

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## CHAPTER SEVEN

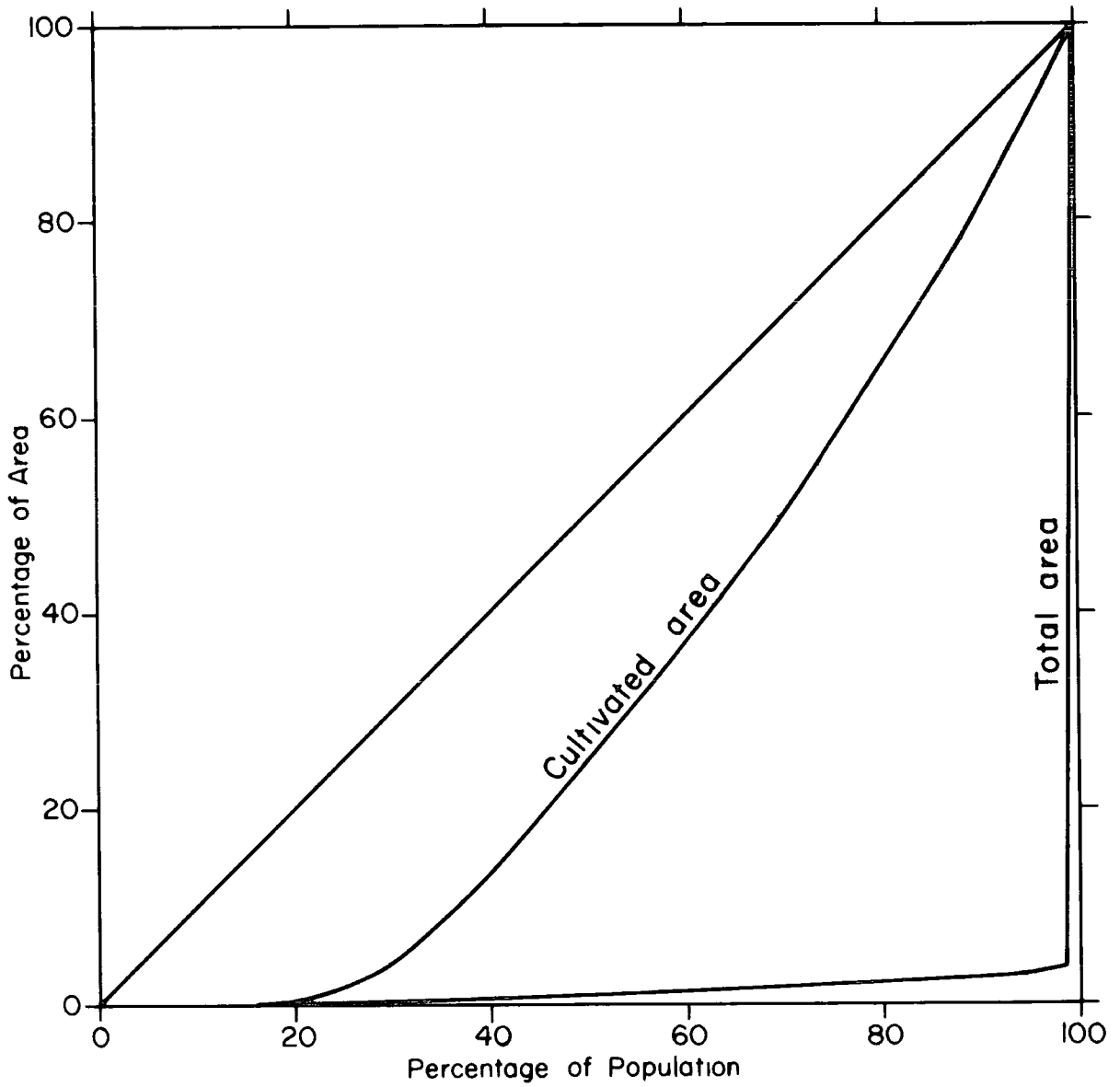
### POPULATION DISTRIBUTION

#### 7.1 Population Distribution

Although Egypt comprises a total area of 1,001,449 square kilometres, the real Egypt, which is essentially the floodplain and Delta of the Nile plus minor strips along the Suez Canal and sweetwater canals and a few scattered oases, amounts in total to only about 35,580 square kilometres, or 3.55 per cent of the total area. There is an additional 1.5 per cent comprising the semiarid coast and certain regions of the Sinai Peninsula, where population is sparse but scarcely absent. The remaining 95 per cent is largely uninhabited desert. The cultivated area is even less extensive than the inhabited area, comprising in 1970 about 25,205 square kilometres, or only 2.52 per cent of the total area of the country.

The salient phenomena in the pattern of population distribution in Egypt is the heavy pressure and concentration along the Nile Valley and its Delta, that is, on a very limited area. 98.88 per cent of a population estimated in 1970 at 33,329,000 lived then in this area. The rest of the vast area had only 375,000 inhabitants or 1.12 per cent of the total population. We find further that 23.13 per cent of the total population lived in 0.69 per cent of the cultivated area and that about half the population lived in one fourth of the cultivated area. This explains the considerable pressure of population it suffers. (see Figure 7.1)

FIG 71 LORENZ CURVES  
FOR POPULATION DISTRIBUTION, 1970



The limited desert population is distributed among the three Egyptian deserts: the Western Desert, the Eastern Desert and the Sinai Peninsula. The inhabitants of these deserts gather in small communities, in the following circumstances:

- (a) Where there is surface water resulting from the small amount of rainfall, which makes possible subsistence agriculture or animal pasture, as on the coast of Maryut between Alexandria and Sallum in the north of the Western Desert, and the northern coast of the Sinai Peninsula. In these two areas are to be found the two biggest settlements in the Egyptian deserts, Mersa Matruh on the western coast of the Mediterranean, and El Arish in the north of Sinai. These two are the capitals of two of the four desert governorates, those of Matruh and Sinai.
- (b) Where there is underground water, as in the depressions of the Western Desert, where the five big oases in the Egyptian deserts have formed: Siwa, Baharia, Farafra, Kharga and Dakhla. In the last two of these, an agricultural programme known as the New Valley project has recently been set up, with the aim of exploiting the underground water in the south of the Western Desert.
- (c) Where mineral resources have been discovered, which can be exploited by small settlements, as on the coast of the Red Sea and the eastern coast of the Gulf of

Suez in the Sinai Peninsula. These resources are of oil, phosphate and manganese. The most important settlements on the Red Sea coast are Ras Ghareb, El Gardaqa and El Qoseir, and in the south west of Sinai, Abu Zenima, Abu Rudeis and El Bilaiyim. It is worth noting that the discovery of the oilfield south of Alamein a few years ago, and the oilfields of Abu el Gharadik and El Razzak recently in the north of the Western Desert, together with the expected discovery of oil in the area of Siwa oasis, will eventually create new settlements.

The outstanding feature of the population distribution in the Valley and the Delta is that the inhabitants of the governorate of Cairo, numbering 4,961,000 in 1970, amount to about 14.88 per cent of the total population of Egypt. If Giza city - which is the extension of Cairo on the western bank of the Nile - is added, as well as Shubra el Kheima, the extension of Cairo northward, the population of Greater Cairo amounts to 5,925,400 in 1970, that is 17.78 per cent of the total population of the country. This means that more than  $1/6$  of the Egyptian population is concentrated in Greater Cairo.

In addition, 60.91 per cent of the total population was to be found in Lower Egypt in 1947, 63.40 per cent in 1960, 64.52 per cent in 1966 and 65.30 per cent in 1970, an increasing proportion. Moreover, although the population of Upper Egypt was increasing in absolute terms between 1947 and 1970, its share of total population declined

from 37.96 per cent to 33.58 per cent. The small proportion of the total population of the country inhabiting frontier governorates increased from 1.13 per cent in 1947 to 1.20 per cent in 1960, and then dropped to 1.12 per cent in 1970.

Nine of the thirteen governorates which together make up Lower Egypt had populations of one million inhabitants or more, according to the 1966 census: Cairo (4.2 million), Daqahliya (2.3), Sharqiya (2.1), Beheira (2.0), Gharbiya (1.9), Alexandria (1.8), Minufiya (1.5), Qalyubiya (1.2) and Kafr el Sheikh (1.1); Upper Egypt had only five governorates in this category: Minya (1.7 million), Sohag (1.7), Giza (1.6), Qena (1.5) and Asyut (1.4), as shown in Tables 7.1 and 7.2.

## 7.2 Population Density

In 1970 the density of the population in Egypt was as low as 33.3 persons per square kilometre of the total area; it was, however, as high as 936.7 per square kilometre of the inhabited area and 1,322.3 per square kilometre of the cultivated area (Table 7a). The density of population in relation to the inhabited area was, then, 28 times greater, and in relation to the cultivated area about 40 times greater than the density of population averaged out over the land area.

Within the crowded Nile Oasis, significant variations in population density occur, of both a general and a local kind. The general pattern is that densities are highest near the head of the Delta, in what is called the metro-

Population Density in Egypt, 1882 - 1970

TABLE 7a

Years	Population	Density of Total Area		Density of Inhabited Area		Index of Density		Density of Cultivated Area		Density of Crop Area	
		Per Sq. Mile	Per Sq. Km.	Per Sq. Mile	Per Sq. Km.	Total Area	Inhabited Area	Per Feddan	Per Sq. Km.	Per Feddan	Per Sq. Km.
1882	6,809,727	17.6	6.8	508.1	196.2	100.0	100.0	1.4	341.8	1.40	340.4
1897	9,748,906	25.2	9.7	727.2	280.8	142.6	143.1	1.9	456.1	1.43	343.1
1907	11,287,359	29.2	11.3	842.0	325.2	166.2	165.7	2.1	497.3	1.47	350.1
1917	12,750,918	33.0	12.7	959.9	370.7	186.8	188.9	2.4	573.1	1.66	294.9
1927	14,217,864	36.8	14.2	1060.7	409.6	208.8	208.8	2.6	610.5	1.76	393.5
1937	15,932,694	41.3	15.9	1206.8	466.1	233.8	237.5	3.0	718.2	1.91	453.8
1947	19,021,840	49.3	19.0	1414.7	546.4	279.4	278.5	3.3	786.0	2.07	493.9
1960	26,085,326	67.5	26.1	1898.4	733.1	383.3	373.6	4.4	1039.4	2.51	597.1
1966	30,075,858	77.8	30.0	2188.8	845.3	441.2	430.8	5.0	1193.3	2.89	588.4
1970	33,329,000	86.3	33.3	2425.5	936.7	489.7	477.4	5.5	1322.3	3.06	727.9

1 Feddan = 1.038 acres

politan triangle, and that from there they decline both upriver and downriver.

It is stated by Trewartha<sup>(1)</sup> that in rural areas the population density follows the importance of maize, the main food crop, but the graph (Figure 7.2) shows no relationship between population density and maize production per capita (see also Table 7b).

Local variations in density are striking, however. Overall, the rural Delta is not one of the most densely inhabited parts of the oasis. Landholdings are larger here and cash crops more widespread than in the oasis as a whole. Density variations also occur within the Delta. Along the coastal margins where sand and marsh intermingle, the widespread practice of dry farming and herding is not conducive to high population densities. But where water is found, as in the narrow golden strip between lake Burulles and the sea, dates, melons and fruit trees flourish, supporting such "fellahin" colonies as live in the villages of Baltim and El Burg, and giving the Markaz of Burullus a population density recorded as 311 inhabitants per square kilometre in 1970. The northern parts in particular, which are designated a development zone, continue to support densities well below the Delta average: 193 inhabitants per square kilometre in the Markaz of Blyala, and 220 in the Markaz of Sidi Salim in 1970. In the districts near the branches of the Nile densities are, however, higher, a figure of 403 inhabitants per square kilometre being recorded in the Markaz of Fuwa and 749 in that of Disuq in 1970.

FIG 7 2 THE RELATIONSHIP BETWEEN  
POPULATION DENSITY AND  
MAIZE PRODUCTION PER CAPITA, 1970

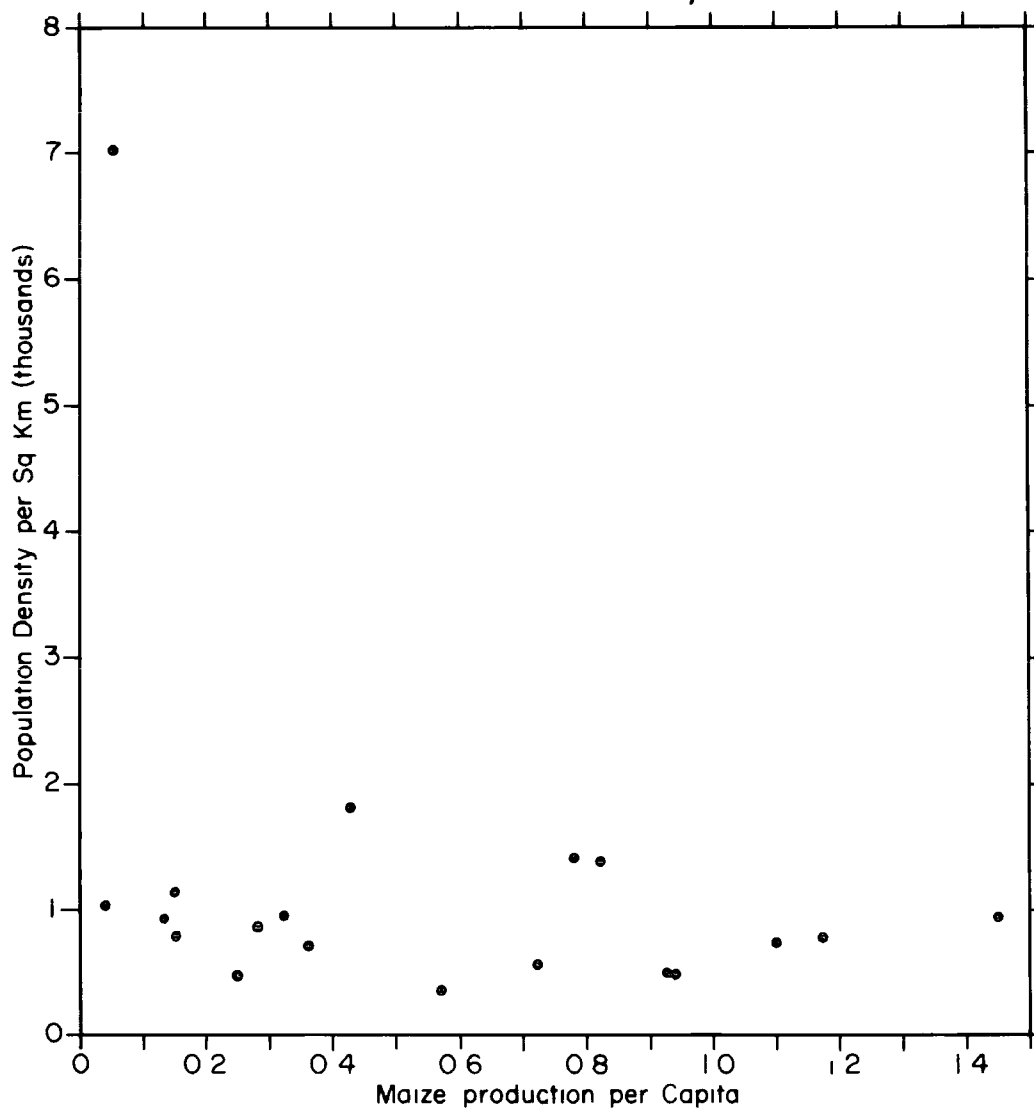


TABLE 7b

Maize, Area, Production and Production Per Capita, 1970

Governorate	Maize (Self)		Maize (Mill)		Total Production (Ardab)	Population	Per Capita
	Area (Fed-dans)	Production (Ardab)	Area (Fed-dans)	Production (Ardab)			
Alexandria	11,338	75,326	4,705	24,344	99,670	2,032,000	0.05
Ismailia	8,118	76,247	4,380	20,691	95,938	395,000	0.25
Suez	6,957	6,967	859	5,077	12,044	315,000	0.04
Damietta	6,620	64,102	1,010	6,777	70,879	472,000	0.15
Daqahliya	57,182	752,716	12,674	133,515	886,231	2,492,000	0.36
Sharqiya	175,303	2,083,307	11,412	102,752	2,186,059	2,344,000	0.93
Qalyubiya	84,074	1,125,719	327	3,394	1,129,113	1,379,000	0.82
Kafir el Sheikh	57,648	688,250	4,171	17,422	705,672	1,234,000	0.57
Gharbiya	114,556	1,546,725	7,925	75,598	1,622,323	2,080,000	0.78
Minufiya	180,572	2,210,046	-	-	2,210,046	1,529,000	1.45
Behaira	159,818	1,923,433	27,061	150,466	2,073,899	2,215,000	0.94
Giza	61,528	689,124	15,757	135,190	824,314	1,934,000	0.43
Beni Suef	49,206	566,428	58,340	504,599	1,071,027	977,000	1.10
Faiyum	6,170	68,544	88,083	657,472	726,016	1,008,000	0.72
Minya	123,109	1,573,135	56,296	555,434	2,128,569	1,813,000	1.17
Asyut	27,123	403,539	5,481	71,350	475,089	1,487,000	0.32
Sohag	15,090	221,149	3,625	39,462	260,611	1,764,000	0.15
Qena	13,617	131,237	37,969	299,276	430,513	1,559,000	0.28
Aswan	826	5,218	10,570	81,830	87,048	1,651,000	0.13

Ardab = 140 kilograms.

Source: Ministry of Agriculture, Statistical Yearbook, Cairo, 1972, pp. 70-73 (in Arabic)

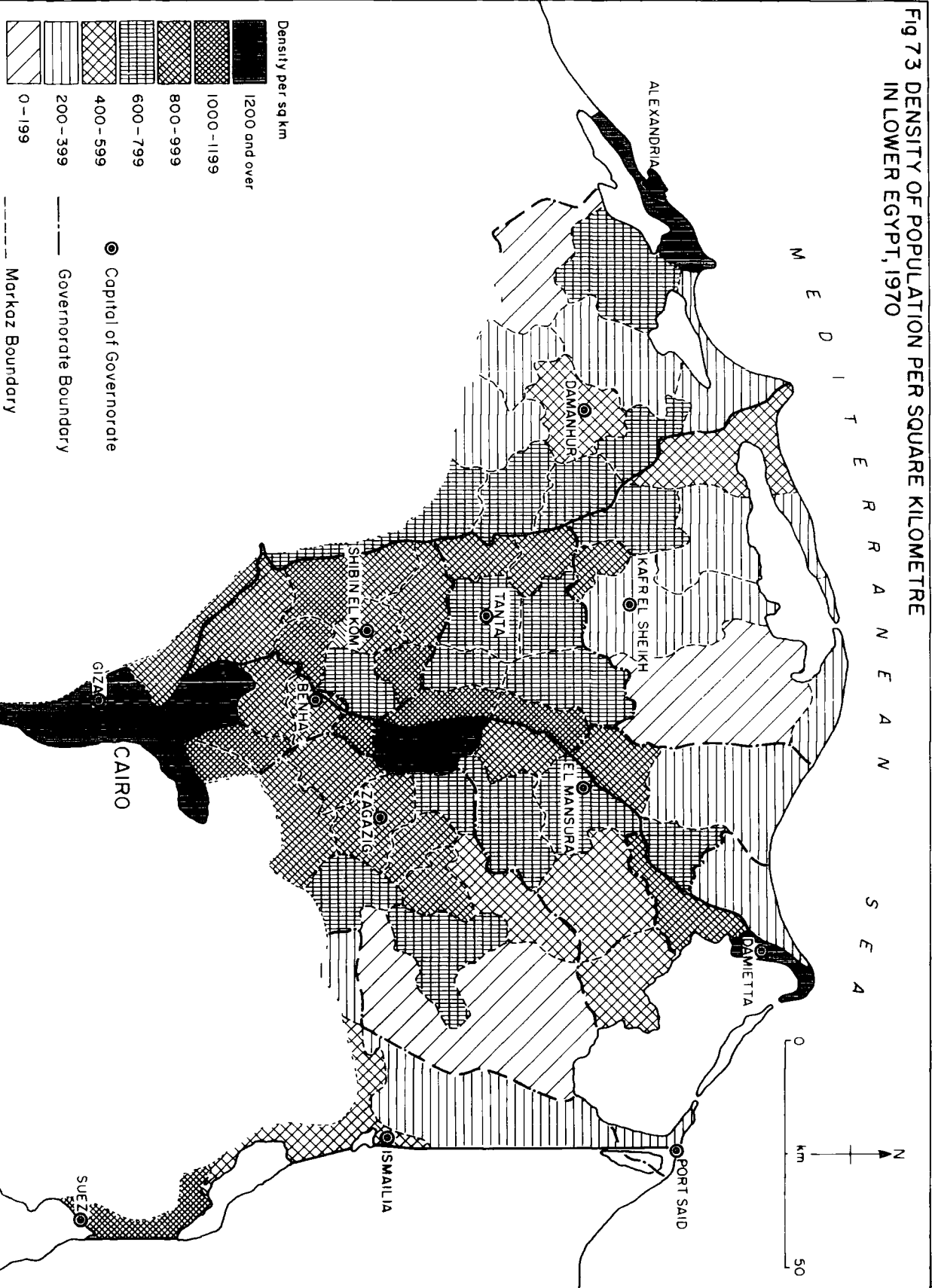
Local density variations also occur in Upper Egypt. The density ranged in 1970 from 1,775 inhabitants per square kilometre in Markaz Giza to 356 inhabitants in Markaz Tamiya. Giza is the most thickly populated wholly agricultural governorate of Egypt.

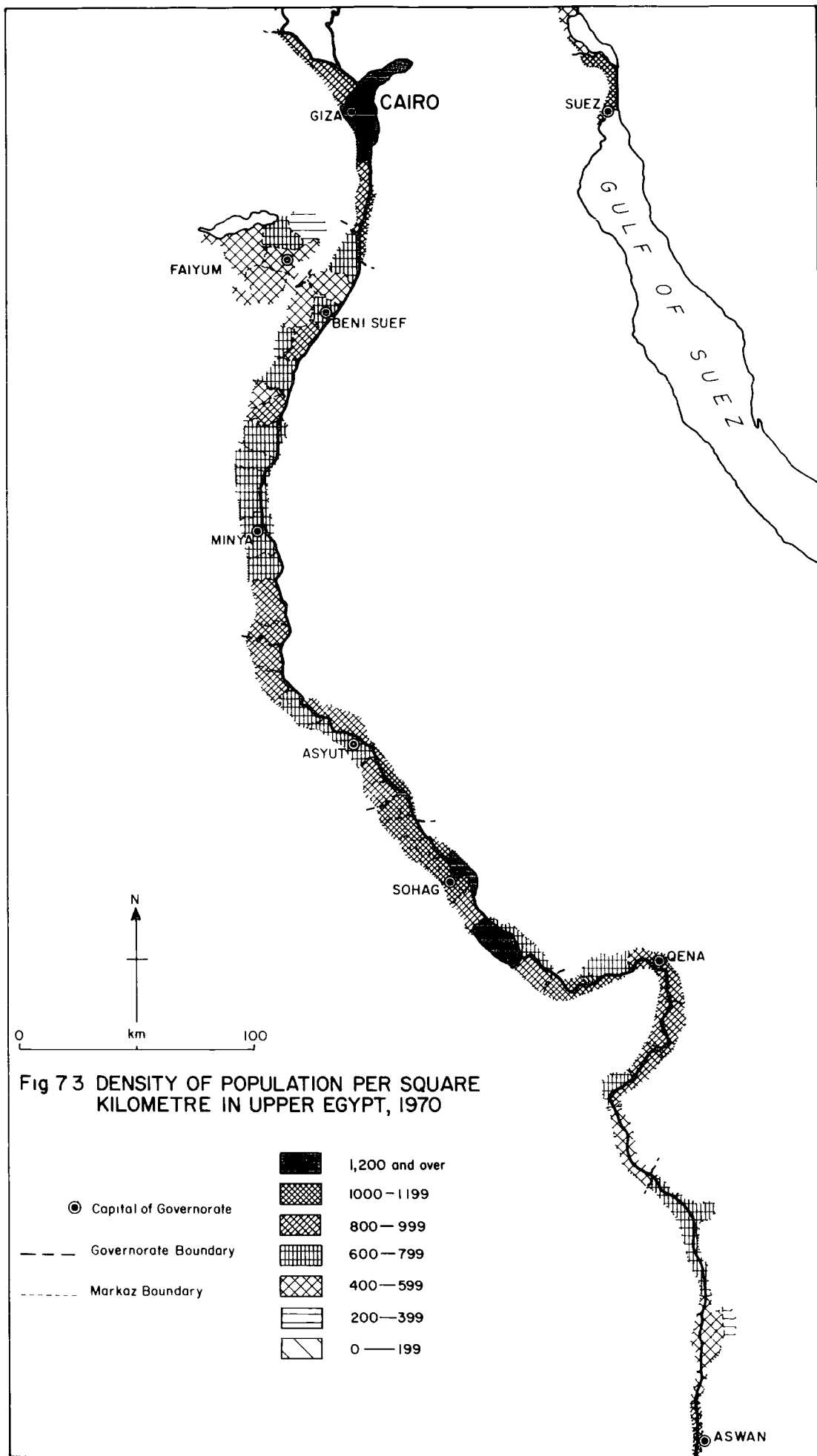
The population density in each governorate is set out in Table 7.3, from which various conclusions can be drawn. In 1970, densities ranged from 353 per square kilometre in Kafr el Sheikh governorate to 23,161 in Cairo. The population density doubled in nine governorates between 1947 and 1970 (Cairo, Alexandria, Port Said, Ismailia, Damietta, Sharqiya, Qalyubiya, Kafr el Sheikh and Giza) and tripled in two governorates (Suez and Aswan). The density was very high over most of the country, almost every governorate recording more than 600 per square kilometre. Only those governorates with extensive areas of unreclaimed desert and lagoon (Ismailia, Sharqiya, Kafr el Sheikh, Beheira and Faiyum) recorded less. In 1970 the density of population in cultivated areas ranged from 680 per square kilometre in Kafr el Sheikh governorate to 2,540 in Giza governorate.

Lower and Upper Egypt can be divided up according to density into the following three groups, as shown in Figure 7.3.

Firstly, the high density areas, with more than 800 inhabitants per square kilometre: Cairo and the area surrounding it (Giza with more than 1,800 per square kilometre) and Qalyubiya with 1,377 per square kilometre; the southern part of the Mid-Delta (942 per square kilometre

**Fig 73 DENSITY OF POPULATION PER SQUARE KILOMETRE  
IN LOWER EGYPT, 1970**





in Minufiyya governorate); the south-west part of Daqahliya governorate including Markaz Mit Ghamr, where the density reaches 1,258 per square kilometre; the east of Damietta governorate (more than 1,300 per square kilometre in Markaz Damietta and 946 in Markaz Fariskur); most of Sharqiya governorate; and finally Mid-Upper Egypt, particularly the governorates of Asyut and Sohag with a density in the former exceeding 900 per square kilometre and in the latter standing at 1,141 per square kilometre. The richest portion of Lower Egypt is the southern region, with its better drainage and deeper irrigation canals, especially near the apex of the Delta and it has a high population density. The other areas with high population density are invariably those with the most fertile soil, an abundance of water and the best developed communications.

Secondly, there are areas of average density, ranging from 400 to 800 per square kilometre. These are to be found in the middle part of Mid-Delta which includes Gharbiya governorate, in most of Daqahliya governorate in the north-eastern Delta, in the northern part of Sharqiya governorate, and in the governorates of Beni Suef and Manya in Upper Egypt.

Thirdly, the low density areas, with densities less than 400 per square kilometre, are to be found in the northern parts of the Delta represented by the governorate of Kafr el Sheikh, in the eastern parts of the Delta represented by Markaz El Huseiniya and Markaz El Qantara Gharb and in the south-western areas of the Beheira govern-

orate (western Delta). Low density areas are also to be found in Upper Egypt in Markaz Tamiya (Faiyum governorate) and in Markaz Nasser (Aswan governorate). The low density areas in the Delta are due to the highly saline soil in the north which is in need of better irrigation and drainage, while to the east and west of the Delta the soil is excessively sandy. The low density in the north of Faiyum governorate coincides with a light sandy soil with high salinity which is to be found in the northern parts of the Faiyum depression. Between Qena and Aswan there are shallow depressions characterized by a soil which is impermeable and very compact, analysis of which has revealed the presence of harmful salts which have accumulated as a result of the evaporation of the irrigation water;<sup>(2)</sup> this seems to explain the comparatively low density in Markaz Kom Ombo and Markaz Nasser.

Another way of expressing the density of population is by a density discrepancy index, this index being the ratio between the size of locality as a per cent of total inhabited area and the proportion of the population it holds. A density discrepancy index was calculated for each governorate (Table 7c) and results varied considerably. Cairo governorate for example was found to have a discrepancy index of 24.8 (0.6 per cent of the inhabited area with 14.9 per cent of the total population in 1970). By contrast Sharqiya and Beheira, the two largest governorates, yielded indices of only 0.5 (Sharqiya with 13.2 per cent of the inhabited area but only 7.03 per cent of the total population,

TABLE 7c

The Density Discrepancy Index in the Governorates, 1970

Governorate	Per cent of inhabited area (1)	Per cent of total 1970 population (2)	Density discrepancy index (2/1)
Cairo	0.6	14.88	24.80
Alexandria	0.8	6.10	7.63
Port Said	1.1	0.94	0.85
Ismailia	2.3	1.19	0.52
Suez	0.9	0.95	1.06
Damietta	1.7	1.41	0.83
Daqahliya	9.7	7.48	0.77
Sharqiya	13.2	7.03	0.53
Qalyubiya	2.7	4.13	1.53
Kafr el Sheikh	9.8	3.70	0.38
Gharbiya	5.6	6.24	1.11
Minufiya	4.3	4.59	1.07
Beheira	12.9	6.65	0.52
Giza	2.0	5.80	2.90
Beni Suef	3.7	2.93	0.79
Faiyum	5.0	3.02	0.60
Minya	6.4	5.44	0.85
Asyut	4.4	4.46	1.01
Sohag	4.3	5.29	1.23
Qena	5.1	4.68	0.92
Aswan	2.5	1.95	0.78
Frontier Govs.	1.0	1.12	1.12

corresponding figures for Beheira were 12.9 per cent and 6.65 per cent). Other governorates - excluding frontier governorates - with a high density discrepancy index were, in descending order, Alexandria, Giza, Qalyubiya, Sohag, Gharbiya, Minufiya, Suez and Asyut.

Egypt is very densely populated. A large, though diminishing, proportion of the working population is occupied in agriculture, but population pressures on the land have stimulated internal migration to cities, especially to Greater Cairo. It is suggested that attempts should be made to encourage a redistribution of population, with the aim of directing population away from the cities, particularly Greater Cairo, and towards the desert areas. As a first step in this process the economic and social development of the Egyptian deserts must be taken in hand, and use made of the potential natural resources, so that new and better opportunities can be made possible for the inhabitants of the various newly settled areas.

There are various ways in which the development of the Egyptian deserts might be pursued. In the first place, the area under cultivation might be expanded, if use is made of rainfall on the northern coast for irrigation purposes, as also of various underground water sources; and if the possibility is explored of channelling the waters of the Nile towards Sinai. In addition, livestock farming especially on the northern coast of the Western Desert, could be considerably intensified, as could the fishing industry in Lake Nasser, the Red Sea coasts, and the Bardawil lake

in the north of Sinai. To complement such improvements as these, the search for exploitable mineral resources in different parts of the Egyptian deserts could be intensified.

If development of the desert areas is unlikely to provide a solution of the problem of the lack of balance in population distribution between the Valley and the deserts, then regional planning for development in different areas of the country is the best antidote to the relative centralization of population in Greater Cairo. Effective regional planning in the different regions of the country is what is needed to achieve steady economic and social development in rural areas. If such development can be promoted, then the economic gap between Cairo and other regions of the country will diminish, and the major causes of rural migration to Greater Cairo will have been eliminated.

Most major industries are concentrated at the moment in the metropolitan centres of Egypt, and more than 22 per cent of all industrial establishments are to be found in Cairo alone.<sup>(3)</sup> Future policy must be carefully directed towards the establishing of factories in rural areas and small towns of both Upper and Lower Egypt. The Egyptian countryside is at present still far below the desired level of industrial development. There is no doubt that partial and disguised unemployment which is directly connected with the problem of inbalanced population distribution cannot be solved except by extensive programmes for the industrialisation

of the countryside, by training agricultural workers in typically rural manufacturing skills such as canning, carpetmaking and spinning and weaving, as a form of "stepping stone" to more advanced education in industrial skills. This may help to provide higher incomes for the rural inhabitants, thus discouraging their migration to urban areas, where they may well find that alternative employment opportunities are limited.

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- (2) Amer, M., Some Problems of the Population of Egypt, Cairo, 1929, pp.9-10.
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CHAPTER EIGHTURBANIZATION8.1 Trends and Pattern of Urbanization

More than two of every five Egyptians now live in urban centres. A study of the last five sets of census returns has revealed that the urban population totalled 12,139,774 in 1966 or 40.4 per cent of the total population against 38.2 per cent in the 1960 census, 33.9 per cent in the 1947 census, 28.2 per cent in the 1937 census and 26.8 per cent in the 1927 census (Table 8a). This trend shows the steady increase in the proportion of urban population, which is due to an accelerated development in the industrial and services sectors. Large numbers of rural population have moved into towns in search of higher wages and a better and more prosperous life.

TABLE 8a

Population in Urban and Rural Areas, 1927-70

Year	Urban Population		Rural Population		Total
	Size	%	Size	%	
1927	3,810,428	26.80	10,407,436	73.20	14,217,864
1937	4,491,693	28.19	11,441,001	71.81	15,932,694
1947	6,445,312	33.88	12,576,528	66.12	19,021,840
1960	9,959,020	38.18	16,126,306	61.82	26,085,326
1966	12,139,774	40.36	17,936,084	59.64	30,075,858
1970	14,001,000	42.01	19,328,000	57.99	33,329,000

Part of this increase is due certainly to the administrative up-grading of some villages into urban units, but the major causal factors are undoubtedly natural increase and net migration. The 1966 census indicates that the net migration to Cairo amounted to 21.29 per cent of the total population of the city and to Alexandria 16.35 per cent of its population. This increase by migration, however, was certainly lower than the natural increase, which Abu-Lughod<sup>(1)</sup> referred to as "the major, if still overlooked, source of population growth in the largest cities of Egypt", stating that "there are now excellent reasons to suspect that since the 1940's natural increase has accounted for at least half of the growth recorded for Egypt's major cities, and possibly for as much as three-fifths in the 1950's."

Since Lower Egypt geographically includes Cairo, Alexandria, Port Said and Suez, its urban population has always been much larger than that of Upper Egypt, the latter with an urban population not more than one third as numerous in the period 1947-70.

The data for individual non-urban governorates in Lower and Upper Egypt show that since 1947, not a single one of them has reached the national average percentage for urban population, with the exception of the governorates of Ismailia, Giza and Red Sea. The actual level of urbanization achieved has, however, varied widely between one rural governorate and another (Table 8b). For example in 1970, Minufiya, the least urbanized and one of the

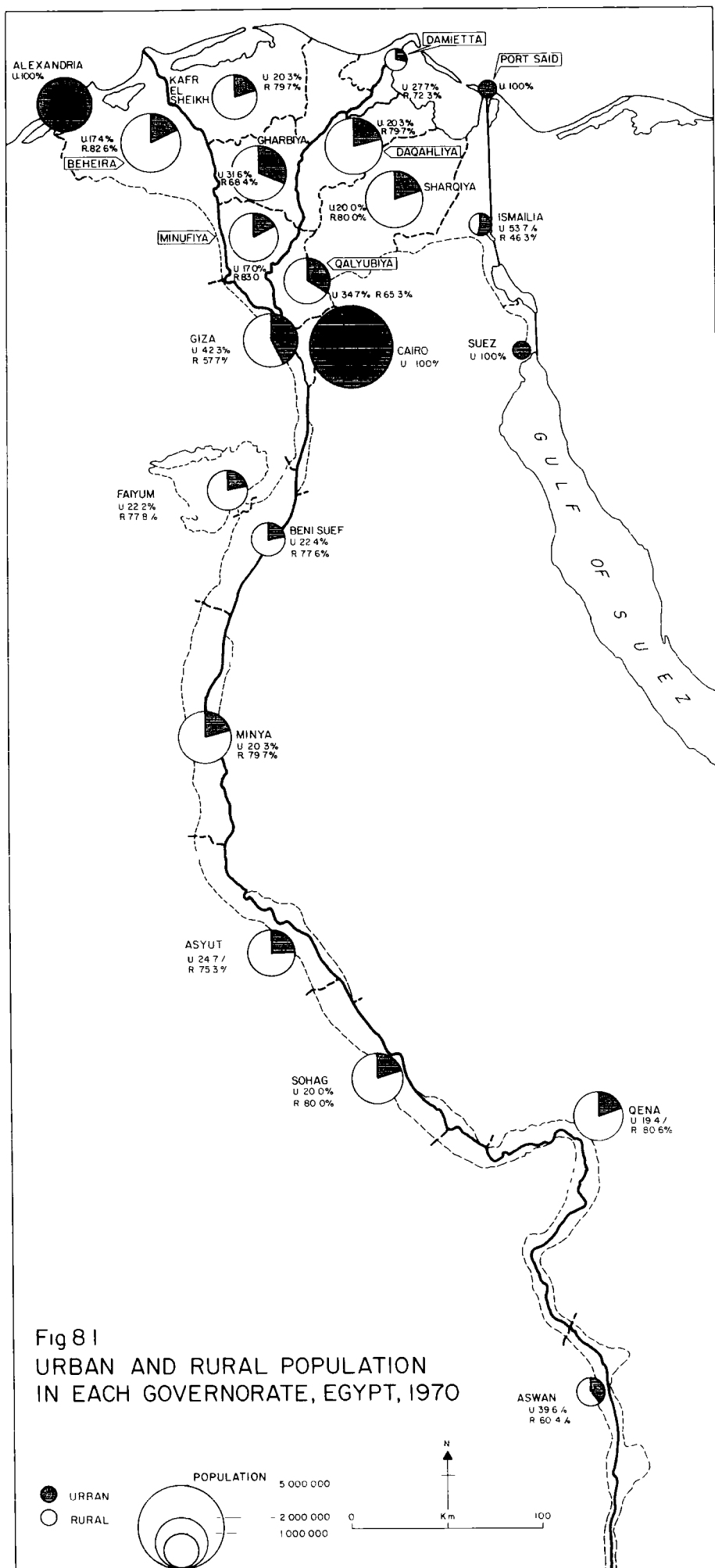
TABLE 8b

Percentage of Urban Population in Rural  
Governorates, 1947-70

Governorate	1947	1960	1966	1970
Ismailia	61.22	51.79	52.91	53.67
Damietta	29.04	24.92	26.53	27.75
Daqahliya	20.57	20.49	20.55	20.30
Sharqiya	14.83	16.38	18.44	19.97
Qalyubiya	21.72	27.27	31.49	34.66
Kافر el Sheikh	18.65	17.23	18.97	20.34
Gharbiya	28.34	31.38	31.56	31.63
Minufiya	13.98	15.39	16.31	17.00
Beheira	16.63	18.54	17.86	17.38
Giza	24.36	36.43	39.22	42.30
Beni Suef	19.21	21.40	22.00	22.42
Faiyum	18.47	20.52	21.42	22.22
Minya	17.50	19.25	19.88	20.35
Asyut	20.24	22.35	23.69	24.75
Sohag	20.14	20.07	19.91	20.01
Qena	18.03	18.33	18.96	19.44
Aswan	20.94	29.20	35.08	39.63
Red Sea	41.73	48.75	50.90	43.76
New Valley	28.26	37.64	34.54	34.55
Matruh	14.08	23.59	21.77	24.94
Sinai	28.30	58.96	30.83	32.03
Egypt	33.88	38.18	40.36	42.01

most population sending governorates, had about 17.0 per cent of its population in urban areas, whereas Giza, one of the few non-urban population receiving governorates, had an urban population level of about 42.30 per cent in the same year (see Figure 8.1). The relatively high percentages of urban population (over 30 per cent) in Giza and Qalyubiya, are to a large extent due to the fast growing parts of Cairo metropolitan area located within the administrative boundaries of these governorates, while the rising levels in Gharbiya and Aswan are certainly influenced by major industrial projects: the textiles in El Mahalla el Kubra in Gharbiya, and the Aswan Dam and the High Dam, along with various other associated projects, in Aswan (see Tables 8.1 - 8.12).

It has been suggested that Egypt suffers from overurbanization.<sup>(2)</sup> In defining overurbanization, Davis and Golden relate their index of urbanization defined as the proportion of population living in cities of 100,000 or more to the index of industrialization or economic development defined as the percentage of the labour force in non-agricultural activities. For a large number of countries, they have found a correlation coefficient of 0.86 between the two indices. Moreover, they point out that "If the relationship between the two variables is represented in the form of a regression curve, certain countries are found to be off the line to a significant extent. One of these is Egypt, which has far more urbanization than its degree of economic development would lead us to expect."<sup>(3)</sup>



The overurbanization thesis, however, has been challenged by, among others, Sovani, who worked out two differing correlation coefficients between the two indices mentioned above; one for a group of developed countries (0.395) and the other for a group of underdeveloped countries (0.85). Sovani concludes that: "These results indicate that the association between the two variables is much more close in the underdeveloped countries than in the highly industrialized countries or, by implication, that the pace of urbanization in the underdeveloped countries is much more closely dependent on the pace of industrialization than in the highly industrialized areas. This flies in the face of the entire overurbanization thesis, at least in the way it has been formulated."<sup>(4)</sup> With regard to Egypt, Sovani says, "If the case of Egypt in 1947 is judged from the regression equation worked out by me for the 24 countries, outside Europe and excluding the U.S. and Canada, it is found to conform very much to the general pattern."<sup>(5)</sup>

It is worth adding that the index of urbanization used by Davis and Golden has clearly influenced Egypt's position, and of course the position of similar countries with the same urban structure, on their regression line. They have chosen such an index on the assumption that, "there is a certain regularity about the pyramid of cities by size", and that "any major size-class tends to bear a systematic relation to the proportion in other size-classes."<sup>(6)</sup> Such an assumption is very questionable in the case of Egyptian urban structure, which has been characterized by quite a high

level of urban primacy and a high degree of concentration during the period covered by their study.

Advocates of the overurbanization thesis assume that the main reason for the movement to cities is population pressure on land in rural areas in underdeveloped countries, which pushes people towards the cities, rather than an increasing demand for labour in urban centres. Consequently, so the overurbanization argument runs, many of the migrants to cities are unemployed or find employment in activities characterized by very low levels of productivity. So Davis and Golden declare that, "the densely settled and impoverished countryside in Egypt is pushing people into the cities because they have no alternative" and that, "much of the migration to the cities seems therefore to be a refugee migration from the countryside."<sup>(7)</sup>

However, one tends to conclude that to speak of overurbanization seems to be to exaggerate the real state of affairs in the country. One should rather say that the major urban centres, containing the large majority of the urban population (54.43 per cent of the urban population or 22.87 per cent of the total population in 1970), have been taking the lead in the process of industrialization in the country and have not been merely the recipients of a refugee agricultural population. This is not to deny the growing problems of housing, transportation, etc. in the major urban centres in the most recent years and the absorption of some rural migrants by low productivity activities levels; though it should be said that even these low

productivity urban activities are generally more productive than the rural employment which was abandoned for them.

## 8.2 Growth Rates of Urban Centres

Urban growth during the period under demographic review has been at uneven rates, and these rates must be classified and explained. However, it is important to remind ourselves that small cities tend to have faster rates of growth than larger cities although their absolute growth is smaller. Table 8.13 suggests a classification of urban growth rates in Egypt into four groups.

### 1. Slow Growth Group (below 2 per cent p.a.):

This group is chiefly made up of what may be considered typical crisis or slump towns. Many of them are district (Markaz) capitals; some are small in size, but others reach population levels as high as 20,000. There is a scatter of such towns in the Delta and the Valley alike, but in the former they are found mostly in the southern and inner parts, that is, the old, densely-settled areas which have long been demographically stable.

### 2. Moderate Growth Group (2-4 per cent p.a.):

This group falls into two sets:

(a) The first includes most of the remaining governorate capitals, quite large towns with potential for growth. Alexandria heads the list, being classified indeed as a moderate growth town not because its absolute growth is moderate, but

because its rate of growth is only moderate.

(b) The other set includes most of the marginal towns of the Delta, whether on the eastern or western desert-border or Barari border in the north. These essentially market towns or simple rural towns reflect their agricultural context in their growth pattern. It is in these new agricultural lands where at varying rates reclamation has been in progress that the economic potential of the countryside has been raised to a point where moderate growth has been stimulated in the towns.

### 3. Rapid Growth Group (4-6 per cent p.a.):

This group consists of a few towns especially favoured by circumstances making for growth. There are firstly, of course, Cairo and Giza making up the major metropolitan conurbation in Egypt which has experienced tremendous expansion due to an excessive centralisation. Suez in its turn, which is a much older town, has come to be an important port on the Gulf of Suez. Extensive reclamation projects in Kom Ombo Valley explain the rapid growth between 1947 and 1960 of Kom Ombo, which rose as a company town of sugar-cane production.

### 4. Extraordinary Growth Group (over 6 per cent p.a.):

Some towns with sharply defined functions may be distinguished among this group. Kafr el Sheikh was originally small but then became a governorate capital,

and is consequently growing rapidly to an appropriate size. Shubra el Kheima has in its turn grown to be an important industrial centre in Cairo metropolitan area. Kafr el Dauwar, on the other hand, had a high rate of growth during the period 1947-60 when it became the second textile centre in Egypt after El Mahalla el Kubra. Faqus, El Huseiniya and Bilbeis, on the margins of the desert in Sharqiya governorate have grown rapidly as the result of land reclamation. El Ghardaqa and Ras Ghareb on the Red Sea coast had a high rate of growth between 1960 and 1966, benefiting in this case from the exploitation of oil. Aswan had a high annual rate of growth from 1960 to 1970 because of the construction of the High Dam and the consequent, industrial development.

The fore-going survey helps to elucidate certain geographic relationships firstly between urban growth and urban size, and secondly between growth and location.

As to urban size, the greatest growth of population since 1947 has taken place in towns with more than 100,000 inhabitants. There is thus, a close, though broad, correlation between urban size and growth: the greater the size the bigger the growth. This implies that the bigger towns were more able, owing to their existing momentum, to monopolise the available possibilities for growth, which means that subsequent size is a function of precedent size, growth a function of size and that size begets size. Yet this linkage is not strictly progressive within the broad size

limits mentioned, whether the bigger or the smaller. Especially in the smaller sized category this correlation is attenuated. This is explained by the fact that it is replaced by other considerations, such as administration. Thus if the town, small as it may be, is selected as a district capital it will be most likely to grow rapidly. Conversely, if a big town is not selected as a capital, it will very likely stagnate.

Amongst the pertinent factors that obtrude to displace the size-growth correlation in the Delta is the factor of geographic location which is itself a prime control of growth there. The marginal fringes of the Delta, whether desert on east and west or Barari to the north, are primarily areas where great effort is being devoted to land reclamation and works of an associated kind, and where the possibilities of growth, as a consequence, are far greater than in the old south and interior which have already reached the stage of demographic stabilisation. This is all the more so in the north since that area is to a large extent the intensive cotton growing belt which affords wider demographic potentials. The net result is that many urban centres in these marginal areas and in the north have experienced, during the modern period, considerable growth as compared with urban centres in the south and the interior. In general, therefore, one finds urban growth rates increase in the Delta as one moves from south to north and from heart to periphery, and vice versa. In the Delta, this local phenomenon frequently prevails over the generally observed fact that "size begets size".

### 8.3 City-size Structure

The internal urban structure of Egypt has been rapidly and significantly evolving throughout the modern period. As Table 8c shows, the number of settlements with less than 20,000 inhabitants has generally decreased, since new arrivals from the humbler sizes fall short of counterbalancing those translated into the next higher category. The former are in a state of deficit because they partake in the general relative shrinkage of rural population.

TABLE 8c

Number of District Capitals of less than 20,000 inhabitants, 1947-70

Year	Number	Total Population
1947	87	872,867
1960	65	693,909
1966	58	659,843
1970	54	659,100

On the other hand Table 8d reveals that all the larger size-categories have invariably grown, and, more important, the bigger the size-group the greater the gain.

It is obvious that the number of towns of the minor groups with less than 100,000 has decreased, while the number of towns of the major groups with more than 100,000 has increased. The 16 major towns contained between them nearly three-quarters of the total urban population of Egypt during the period between 1960 and 1970 (Table 8e), whereas the remaining 126 minor towns accounted for about one-quarter of the total urban population. The important trend

TABLE 8d  
Urban Population by Town Size Class, 1947-70

Size Class of Towns	1947			1960			1966			1970		
	Number	Urban Popul- ation	% Total Urban pop.	Number	Urban Popul- ation	% Total Urban pop.	Number	Urban Popul- ation	% Total Urban pop.	Number	Urban Popul- ation	% Total Urban pop.
1,000,000 or more	1	2,075,914	32.21	2	4,868,766	48.88	2	6,020,909	49.60	2	6,993,000	49.94
500,000 - 999,999	1	949,446	14.73	-	-	-	1	571,249	4.70	1	711,900	5.08
100,000 - 499,999	6	799,787	12.41	13	2,231,928	22.41	13	2,335,511	19.25	13	2,754,600	19.69
50,000 - 99,999	9	644,268	10.01	9	561,294	5.64	10	697,310	5.76	15	1,052,500	7.53
20,000 - 49,999	38	1,103,030	17.11	53	1,603,123	16.09	58	1,854,552	15.27	57	1,829,900	13.06
10,000 - 19,999	42	619,904	9.61	37	517,082	5.18	39	547,811	4.50	39	579,500	4.14
Below 10,000	45	252,963	3.92	28	176,827	1.80	19	112,032	0.92	15	79,600	0.56
TOTAL	142	6,445,312	100.00	142	9,959,020	100.00	142	12,139,774	100.00	142	14,001,000	100.00

TABLE 8e

Towns with more than 100,000 inhabitants, 1970

Town	Population		Rank
	Number	% of Urban Population	
Cairo	4,961,000	35.43	1
Alexandria	2,032,000	14.51	2
Giza	711,900	5.08	3
Suez	315,000	2.25	4
Port Said	313,000	2.24	5
El Mahalla el Kubra	255,800	1.83	6
Tanta	253,600	1.81	7
Shubra el Kheima	252,500	1.80	8
El Mansura	212,300	1.52	9
Aswan	201,500	1.44	10
Asyut	175,700	1.25	11
Zagazig	173,300	1.24	12
Ismailia	167,500	1.20	13
Damanhur	161,400	1.15	14
Faiyum	150,900	1.08	15
Minya	122,100	0.87	16
Total	10,459,500	74.70	

is clear: it is emphatically towards concentration in a smaller number of bigger centres.

Egypt produced her first million city, Cairo, by the 1927 census when the population of Cairo totalled 1,070,857 inhabitants. Moreover, at that time Alexandria attained 600,106 inhabitants. By 1947, Egypt had two cities of about a million or more inhabitants, of which one had reached the two-million mark, Cairo having 2,075,914 inhabitants, Alexandria 949,446. The population of the two cities totalled together more than 3 million inhabitants. Cairo grew from 3.4 million in 1960 to 4.2 million in 1966 and to about 5 million in 1970 when it accounted for 35.43 per cent of the urban population or 14.88 per cent of the total population of Egypt. Greater Cairo which includes Cairo, Giza and Shubra el Kheima accounted for 17.78 per cent of the total population or 42.32 per cent of the urban population in 1970. Alexandria reached 2.03 million inhabitants in 1970.

Cairo is more than twice as big as its nearest rival (Alexandria) and  $1\frac{1}{2}$  times bigger than the next three cities combined (Table 8f). Cairo is not only the largest city in Africa or the Middle East; it is not often realised that within an area including the whole of the Danube basin, the Balkans, Europe south of the Alps, Western Asia to the Himalayas plus the whole stretch of Africa, Cairo is now the largest city. (8)

TABLE 8f

## Urban Primacy in Egypt, 1947-70

Year	Population of Largest City	Percentage in Largest City	Two City Index $\frac{P_1}{P_2}$	Four City Index $\frac{P_1}{P_2+P_3+P_4}$
1947	2,075,914	10.91	2.19	1.63
1960	3,352,532	12.85	2.21	1.54
1966	4,219,853	14.03	2.34	1.59
1970	4,961,000	14.88	2.44	1.62

There are no large cities occupying a transitional position between the two metropoli - Cairo and Alexandria - and the smaller, middle-sized cities containing a few hundred thousand inhabitants. A distinct break in the distribution occurs between Alexandria, the second-ranking city and the third city. In 1947, when Alexandria had over 900,000 inhabitants, the third-ranking city of Port Said had less than 200,000. In 1970, when Alexandria's population was 2,032,000 the third-ranking city of Giza had a population of only 711,900. Thus the gap between the two largest cities and the urban communities of secondary importance stands as a basic imbalance in the pattern of urbanization in Egypt (see Tables 8.14 - 8.17).

It is obvious from this analysis that drastic urban concentration in a smaller number of bigger agglomerations, more specifically Cairo and Alexandria, has been the hallmark of modern Egyptian urbanism. Between 1947 and 1970 the population of these two main cities as a proportion of

the total population of the country rose from 16 per cent in 1947 to 19 per cent in 1960 to 20 per cent in 1966 and then to 21 per cent in 1970. The trend to megalopolitan concentration, however, is seen in sharper perspective if the ratio is drawn up between the population of these two cities and the total of urban population alone. This ratio rose from 46.9 per cent in 1947 to about 50 per cent in 1970. If the population of the large towns (+100,000) is added to that of Cairo and Alexandria, the total of inhabitants of major towns is seen to be 3,825,147 in 1947, 7,100,694 in 1960, 8,928,069 in 1966 and 10,459,500 in 1970. The inference to be drawn is that the trend in Egypt has not only been to urbanism but to metropolitanism.<sup>(9)</sup> This can be seen as a more emphatic version of a general international trend; the tendency is for overpopulated, underdeveloped countries depending on a raw material economy to achieve a form of urbanisation characterised by a concentration in a few major agglomerations.<sup>(10)</sup>

#### 8.4 The Geographic Distribution of Cities

A variety of patterns emerges from the facts about the regional distribution of urban sizes in Egypt.

Lower Egypt, with about two-thirds of the population of Egypt, contains a disproportionate number of the country's large cities and an overwhelming majority of its urbanized population. Of the sixteen cities that had 100,000 or more inhabitants in 1966, eleven were located in Lower Egypt.

These cities contained 7,829,074 of the nine million persons residing in cities of over 100,000. However, with medium-size towns (20,000 - 100,000) the distribution is less disproportionate. There are sixty-seven towns in this category - 34 of them in Lower Egypt (10.71 per cent of the total urban population) and 33 in Upper Egypt (9.99 per cent of the total urban population). Finally there are the towns of less than 20,000 persons. Here the balance swings back in Lower Egypt's favour. Out of 47 such towns, 28 are in Lower Egypt (3.12 per cent of the total urban population) and 19 in Upper Egypt (1.75 per cent of the total urban population) (see Tables 8.18 - 8.21).

A distinction can usefully be made in considering the Delta between two main categories of urban size:

- Major cities (+100,000)
- Minor towns (-100,000)

If the major category is extended to include Cairo, Alexandria and the Canal cities, the more prominent towns in the category will be found to be those situated at the corners and edges of the triangle of the Delta in its wider sense. For Cairo, Alexandria and Port Said are the leading cities in the country. This is a recent situation, as traditionally old inland towns like Tanta and El Mahalla el Kubra have been the largest. This change in the pattern of urban dominance from interior to coast has accompanied the radical change from a self-sufficing subsistence economy to a developed international exchange economy. If, however, we narrow our focus and restrict the category of

major cities to those within the limits of the Delta proper, i.e. the heart of the inhabited area, an interesting arrangement becomes apparent. The towns tend to cluster in the northern half of the Delta - Tanta, El Mahalla el Kubra, El Mansura, Zagazig and Damanhur. The biggest town in the southern Delta, Shibin el Kom, had by contrast, a population of only 75,600 in 1970. The density of the rural background is heavier in the south than it is in the north of the Delta. That is to say the distribution of the major urban sizes within the Delta is in inverse proportion to the general population density. So much so that the urban concentrations cannot be thought of as the natural peak of a pattern of population density which gradually falls away beneath. They can be explained only in terms of factors influencing size other than general patterns of density - and the most likely factor in this case is spacing.

As to the minor size-group it conforms closely, by contrast with the major group, to the general gradation of density from south to north. Thus sizes are in general clearly larger in the south than in the north; they vary directly as the general density of population varies. Small towns, then, emerge as the natural peaks of their rural background. The reason is not far to seek: these small towns are market-towns and modest centres providing local services.

It follows that the Delta is divisible, from the view point of its urban network, into two distinct regions;

- (a) The south, where the population background is extremely dense, where medium sized towns which are in reality

overgrown minor towns preponderate and where large cities are scarce if not entirely absent. Thus homogeneity and evenness are the keynote of the urban network and decentralisation is fundamental. This is most typically exemplified in the towns of Minufiya governorate.

- (b) The north, where the rural background is very scattered and where, amid a majority of very small towns, much smaller than those prevailing in the south, there is found a small number of relatively large cities. Hence heterogeneity and accentuated size variability characterise the mesh here. The urban structure is thus sharply centralised. This is strikingly exemplified in the Beheiran complex where, with the exception of two coastal towns, far away and almost severed from the main tract of the Beheira oekumene, Damannur (161,400 inhabitants in 1970) is surrounded by a series of small towns, mostly of less than 20,000 persons.

Upper Egypt with its simple linear shape is much less complicated in its pattern of size distribution. From north to south three distinct sectors, each directly related to the rural density background, are discernible.

Firstly, from Giza to Minya the fabric of the urban mesh is woven of medium sized towns. Beni Suef, the chief town of the sector, is well centred within it, even though of relatively moderate size (99,400 in 1970). The Faiyum semi-oasis, which is an area of extremely pronounced urban centralisation, is an adjunct to the Valley sector. Here

there are a number of small towns contrasting with one single large city, Faiyum (150,900 in 1970).

The second sector stretches from the city of Minya to the end of Qena bend. Here the urban network consists of towns very much inflated in size, it certainly reflects the density of the demographic background: for here are found the highest population densities in Upper Egypt, paralleling those of the southern Delta. The city of Asyut (175,700 in 1970) the third leading city after Giza and Aswan in Upper Egypt, is most prominent in the sector.

The far south makes up the third sector. Towns are few, modest in number and markedly more widely spaced. This is the result of the serious contraction of the Valley section and the rapid deterioration of the oekumene and the general density to its lowest point.

The million cities of Cairo and Alexandria, materially differ from one another. Whether one approaches Cairo from the margins of the Delta oekumene in the north or the Valley frontier in the south, density of population progressively rises, and where the peaks of density from Minufiya, Qalyubiya and Giza meet is the logical point for the single greatest peak of Cairo. Cairo is a natural culmination of the rural background and a product of the highest background densities in the country. Alexandria on the other hand, is a mushroom urban island from the viewpoint of the general matrix of settlement. It is an isolated phenomenon lacking a wide, dense population base; not only does it fall

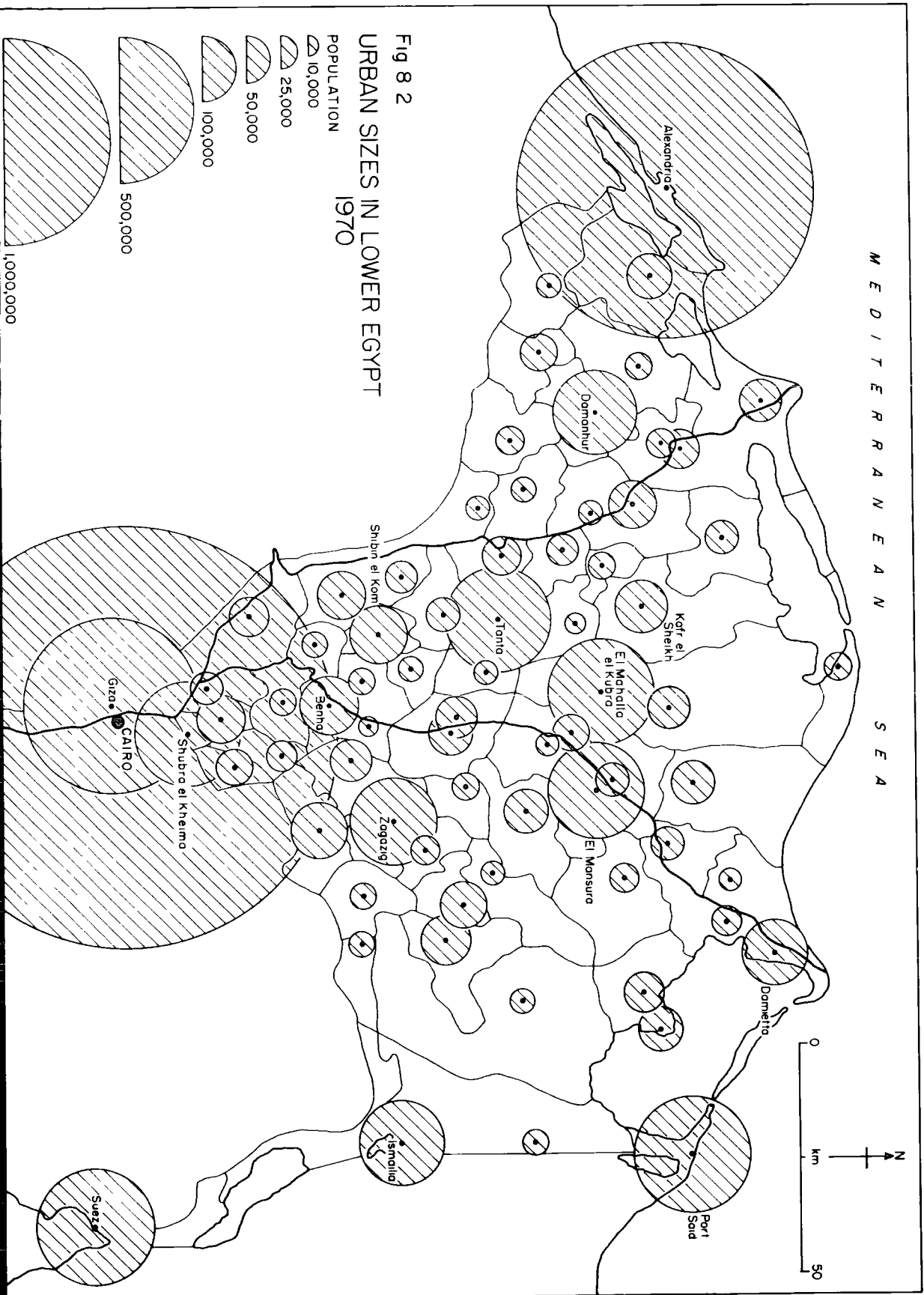
outside the Delta proper, but also outside the real oekumene. Most other coastal towns partake in this feature to variable degrees, but the Canal towns in particular virtually exist in a true oekumenical vacuum.

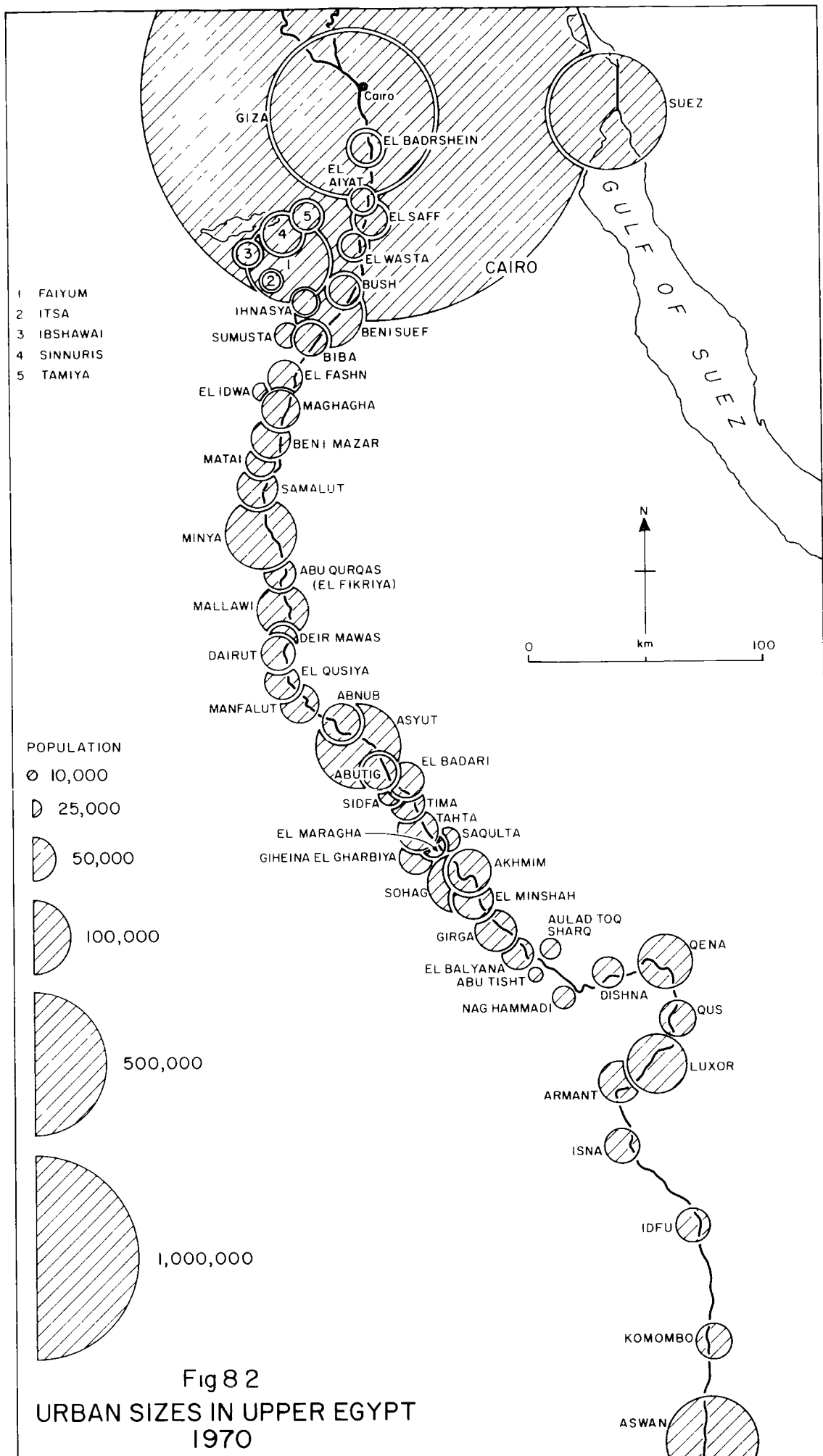
If we turn to the group of large cities, of more than 100,000, a definite contrast between Delta and Valley is at once apparent. Such sizes in the Delta vary inversely with background density but directly in the Valley, where specifically Asyut is as much the natural culmination of the summit densities of Upper Egypt as is Cairo for the summit densities of the country as a whole.

The minor sizes of less than 100,000, are directly linked to background density in both Delta and Valley. In the latter, they decrease in size as one moves north, while in the former they form a series of sectors directly related to density. The contrast between large and minor towns in this respect is an echo of the functional contrast: the large cities which perform large-scale regional functions do not necessarily have to be restricted by their immediate densities while the small towns are local market towns that thrive or decay in proportion to these narrow local possibilities.

The size and spacing map (Figure 8.2) reveals some original facts:

1. Within the same homogeneous oekumenical area, there is a strong tendency for equal size-categories to be equally spaced. Thus if we take the +100,000 group,





we find these cities spaced in the Delta at a standard interval of nearly 50 kilometres. The following pairs of cities are so spaced: Alexandria-Damanhur; Damanhur-Tanta; Tanta-El Mansura; El Mansura-Damietta; Tanta-Zagazig; Zagazig-Cairo. There is no exception to this rule apart from the case of El Mahalla el Kubra which lies half-way between Tanta and El Mansura. This isolated exception, however, is not difficult to account for: El Mahalla el Kubra is an industrial centre established and developed under controlled conditions and to that extent is an artificial development.

In the Valley, if we take the +75,000 group, there is the same phenomenon of standardised spacing as in the Delta, with the single difference that the standard interval is almost exactly double, i.e. 100 kilometres. This is the distance between each of the following pairs of cities: Cairo-Beni Suef; Beni Suef-Minya; Minya-Asyut; Asyut-Sohag; Sohag-Qena. There are only two exceptions to this pattern. Faiyum which comes close to Beni Suef, but its exceptional location is the result of the break of the oekumene by the Faiyum semi-oasis. Then there is the case of Qena-Aswan. Here the standard interval is doubled, and they are separated by nearly 200 kilometres. There can be little doubt that oekumenical break is the clue to this anomaly. For this area is perhaps the poorest in Egypt: discontinuous settlement and abnormally sparse population density. The spacing in the Valley

occurs in a simple unilinear direction whereas in the Delta it is fundamentally areal and is found along a multiplicity of axes in all directions.

2. In the Delta the spacing of cities in the major group (+100,000) cannot be explained without reference to the influence of the two million cities of Cairo and Alexandria. These two large cities illustrate the suppressive and stifling effect of big cities on smaller centres within their functional penumbra.<sup>(11)</sup> Thus within the range between these two million cities, we have to move away from both of them as much as we can in order to find a relatively important town like Tanta. The nearer the approach to either of them, the smaller urban sizes necessarily become, almost progressively, as in the cases of Kafr el Zaiyat and Damanhur on the approach to Alexandria, and Shibin el Kom and Benha on the approach to Cairo. Indeed, it may not be without significance that Damanhur (161,400 inhabitants in 1970) is larger than Shibin el Kom (75,600 inhabitants in 1970), the former falls within the orbit of the less towering metropolis while the latter falls in the shade of the larger and therefore more suppressive metropolis. If, however, we move away from Cairo and Alexandria, gradually but surely far bigger urban sizes begin to appear as the restrictive influence of the two million cities diminishes. Thus we come upon Tanta (253,600 inhabitants in 1970), El Mahalla el Kubra (255,800), El Mansura (212,300), Zagazig (173,300) and Damietta

(98,600). A major contrast, too, in the degree of urbanization is observable as between the Damietta and Rosetta branches. The Damietta is incomparably more important; with Damietta, El Mansura, Zifta, Mit Ghamr and Benha it easily outweighs the Rosetta on which only Rosetta and Kafr el Zaiyat stand. The more important twin-towns, too, are found on the Damietta branch: El Mansura-Talkha, Zifta-Mit Ghamr, Disuq-El Rahmaniya and Fuwa-Mahmudiya on the Rosetta branch are far less significant. This difference is undoubtedly due to the fact that the Damietta branch is more centrally located in the oekumene of the Delta, but plausibly also owing to the fact of its being further removed from the suppressive base-line of Cairo - Alexandria. This distance allows its towns to enjoy fuller freedom of growth than the Rosetta towns.

3. Sizes of the minor towns perceptibly increase as one moves away from the bigger towns towards the fringes of the Delta. Thus in the narrow, thickly populated triangle of Qalyubiya we begin along the Damietta branch with a band of more important towns - Qalyub (51,800 inhabitants in 1970), Benha (72,500), Mit Ghamr (44,600) and Zifta (38,300); thence eastwards sizes begin at first rapidly to diminish along the middle of the triangle, eventually to rise again along the desert margins as in Bilbeis (73,300 inhabitants in 1970). Similarly in the north of the Delta, soon after we pass the population peaks of Damanhur, Tanta, El

Mahalla el Kubra and El Mansura, sizes abruptly decrease, then gradually begin to increase again along the margins of the Barari; thus El Matariya (44,200 inhabitants in 1970) is bigger than El Simbillawein (43,100), Bilqas (43,300) than Shirbin (25,900), Kafr el Sheikh (64,000) and Disuq (52,300) than Qallin (16,500) and Basyun (72,700), and Rosetta (40,000) than Abu Hummus (16,300).

4. In the Valley, the capital towns gradually increase in size the more distant they are from Cairo. Thus Minya (122,100 inhabitants in 1970) is bigger than Beni Suef (99,400); Asyut (175,700) than Minya. Asyut is the biggest town in the Valley, with the exception of Giza and Aswan. The ascending hierarchy ceases, however, beyond Asyut because the south is a poorer and less uniform region. Thus Sohag (81,400 inhabitants in 1970) and Qena (77,600) are smaller than Minya and Beni Suef. Had the oekumene continued to be of the same kind, the towns beyond Asyut would in all probability have continued to grow in size - perhaps even to reach greater sizes than those in the northern sector, this in virtue of their extreme remoteness from the metropolis.

Thus, for the immediate future, the concentration of urban population within the largest cities of the country and the sub-regions within their magnetic fields will continue. No countertrends favouring agrarianism or decentralization of urban functions seem to be in view, and it is

unlikely that, in the absence of a full-scale attack on the problem by Egypt's planners, the greater and greater over-centralization of Egyptian urban development can be prevented.

There is no Egypt government 'white paper' that makes explicit the goals of the present regime with respect to urbanization in itself. Goals, when described in practical terms, refer to the process of industrialization, with urbanization merely an implied side effect whose connection with the industrial goals is only vaguely perceived.

While urbanization goals remain unstated, the conflict between urban and rural values pervades much of the policy debates. A deep-seated and troubling ambivalence plagues the planners of Egypt's future. On the one hand is a very real and emotional commitment to the rural areas and the feeling that investment in urban improvements deprives the rural districts of their long-overdue share of the economy. On the other is the realistic recognition that modernization and an improved standard of living can only be achieved through further industrialization, a process that, by its technological requirements, is best suited to urban locations. On the one hand is the belief that Cairo, for one, has already grown beyond optimum size; on the other is the realistic recognition that only in the largest urban centres do power, transport facilities, and skilled labour pools exist in sufficient quantities to permit simple marginal additions to the industrial complex.

The resolution of these conflicting goals - rural re-

construction as against efficient, capital-conserving industrialization - is a continuous process in government decision-making. The resolution thus far has been achieved through separate and sometimes conflicting programmes undertaken by different ministries, each with its own set of priorities and preferences. Perhaps the most influential, in terms of the future of Egypt's urban pattern, is the Ministry of Industry, which plans for the location of industrial plants in the country.

An analysis of the locational aspects of the five year plan (1958-63) indicates that, far from being a decentralizing force bringing employment and prosperity to the rural hinterlands, the carrying out of the plan will create a still greater concentration of urban growth. The cities of Cairo and Alexandria, along with their metropolitan subsidiaries and fringe areas, are planned to receive more than half of the proposed new installations. Another sizeable portion of the capital is allocated to extractive industries located along the Red Sea and in Suez, far from the settled rural population of the country. With the exception of a few textile and food-processing centres, the remainder of Egyptian cities are to receive little attention as potential sites for industry.

In all fairness it must be pointed out that many of the industrial plants planned for the Cairo and Alexandria regions will be situated not in the central city itself but in surrounding towns. This is in conformity with the recommendations of the 1956 Master Plan for Cairo, which en-

visaged a constellation of industrial satellites that would comprise, in addition to the major plant or plants, living accommodation and commercial facilities for workers and their families, to create relatively self-sufficient units. Experience elsewhere, however, leads one to wonder whether these theoretically independent communities may not one day merge physically with the metropolis, while remaining beyond the administrative jurisdiction of the central city.

Furthermore, this decentralization within the metropolitan regions of greatest concentration, even if successful, will provide no growth stimulus to the medium-sized provincial capitals. Their position with regard to the primates will remain unimproved. A different form of decentralization of industrial development will be necessary if these other communities are to be made into attractive medium-sized urban environments capable of drawing off part of the heavy stream of migrants pouring into Cairo and Alexandria from all parts of the countryside. Every plant located within a mile or two of a primate deprives a regional capital of a potential economic base.

To balance the preferential industrial treatment accorded to the major cities, money has been allocated directly to the rural areas to train farmers in more efficient methods, to extend cheap credit facilities, to redistribute some of the land, to improve schools and conduct adult literacy programmes, and to provide medical and social facilities and services. The two programmes have operated without much co-ordination, each fundamentally accepting the

status quo and seeking to improve the urban qualities of the agricultural areas. It may be, however, that the solutions to these separate problems are interdependent; a direct unco-ordinated attack on each may not yield the most fruitful results.

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## CHAPTER NINE

### CONCLUSION

#### POPULATION CHANGE AND DEVELOPMENT

Despite some progress in the scope and intensity of economic activities and growth during the early nineteenth and twentieth centuries, a comprehensively planned and authoritatively executed programme of economic development did not materialize in Egypt until after 1952. Since that time, far-reaching institutional changes have assisted in building the modern socio-economic infrastructure requisite for sustained or self-generating economic growth. Concomitantly, however, population growth has soared and greatly attenuated the successes of Egypt's ambitious economic development programme. As the rate of economic growth has risen quite high in recent years, so also has that of population growth; thus, realization of the government's basic goal to improve individual living standards has suffered repeated setbacks.

It should be emphasized that before 1952, the economy was not growing at what could be considered a reasonable rate. Considerable population growth was coupled with almost stationary real national income. The average annual rate of growth of per capita income, stated at constant prices (1953 = 100) was very small and equalled 0.01 per cent during the period 1937-1952.<sup>(1)</sup> The only years before 1952 in which the economy flourished were the war years. Thereafter the economy lapsed into the previous state of

relative stagnation with a declining rate of growth of per capita income during 1947-52.

The 1952 revolution brought considerable changes in the long term economic structure of Egypt and its political framework. It was not until that year that a systematic drive for development was launched.

With the new regime, several measures were introduced in the effort to produce a properly socialist economy with planning as the major instrument for development. The principle objective of the Egyptian plan was to double national income over a period of ten years (1960-70) with a 40 per cent increase by the end of the first phase of the plan (1965). This resulted in an annual rate of growth of 7 per cent during the first five-year plan. Another objective to be accomplished along with the increase in national income, was to secure a more equitable distribution of income.

On the social front, development was directed towards several general objectives. First was the achieving of the highest possible rate of employment, with the recognition that every citizen has the right to work. Second, the provision of educational facilities, medical care, and other social services. Third, the attempt to help individuals to participate wisely in decision-making in matters of public concern, on the basis of equality of opportunity. Finally, the aim was that a level of sufficiency should be reached which would allow every citizen to enjoy a reasonable standard of living.

It is granted that most of Egypt's economic development problems are attributable to the rapid increase in population resulting from the great increase in birth rates over death rates. Therefore, all effort exerted towards the development of the national economy and the promotion of the standard of living would be impeded by accelerating population growth unless placed within the framework of the resources and possibilities available.

In order to meet the needs of the country, the Egyptian economy should provide for an improvement of the production capacity and the economic level of the people. Practically, this means raising the productivity of the labour force, which can be achieved by the promotion of better standards of health among the people. This, in turn, necessitates the adoption of a sound policy for the propagation of sanitary services, medical treatment and measures to combat the diseases which affect the people, weakening them physically and mentally. It equally necessitates the development of preventative medical techniques which would aim to improve the general physical health of the people, thus contributing to the eradication of the various endemic diseases.

Egypt has made considerable economic progress during the last few years, especially in the field of industrialization, though agriculture is still the main source of livelihood for the majority of the population in Egypt. During the last twenty-five years, since 1952, there has been a strong movement forward in the economy and efforts have been made towards modernization in Egypt.

## 9.1 Agricultural Development and Population Change

Until the construction of the High Dam the water from the Nile could irrigate little more than six million feddans. As a result of the additional supplies of water from the High Dam, the cultivated area will be increased by 1.3 million feddans before 1980. Moreover, the area of 700,000 feddans formerly under basin irrigation in Upper Egypt, i.e. 11.7 per cent of the cultivated area, has already been converted from basin to perennial irrigation. As a result of these developments, the cropped area, amounting to some 10.4 million feddans before the High Dam came into operation, will eventually increase by one quarter.<sup>(2)</sup> The High Dam now produces electric power of ten thousand million K.W.H. annually at a very low price. Besides, it has increased the generating capacity of the Aswan Dam. This large amount of electric power has helped to enlarge the area of reclaimed land irrigated by subterranean water. Rehabilitation of new areas is taking place in the north, in the Delta region, along the Mediterranean coast, on the Sinai Peninsula, and in the New Valley. In 1972, 908,500 feddans had already been reclaimed.<sup>(3)</sup>

Besides land reclamation, there is now an increasing emphasis upon the efficient use of cultivable land. The most significant of these measures is the conversion of open drainage systems to a covered network of underground pipes. Nearly three million feddans will have been converted in Lower Egypt by 1980. Pilot closed drainage schemes have reportedly shown increased production of 30 to 50 per cent.<sup>(4)</sup>

The agricultural co-operatives, 5,019 of which had been established by the government in the villages by 1971, "emerge as a powerful factor for improvement and change in rural Egypt and are responsible for much of the success of the agrarian reform. As in most agrarian reforms they were mainly regarded to begin with as a replacement for the big landlords who had previously provided seeds, fertilizer, finance and marketing arrangements. But the function of the co-operative is now much more elaborate. Educational programmes and demonstrations to improve the level of agriculture are provided by the co-operative, and social, health and recreational services have developed. Co-operative methods have also enabled the farmer to make use of the most modern machinery and scientific means of raising production levels. The headquarters of the co-operative is now, in fact, the focus of village life."<sup>(5)</sup>

During the ten years 1959/60 - 1969/70, the sum of L.E. 500 million was invested in the agricultural sector and irrigation, excluding the High Dam investments, (L.E. 166 million). These investments have covered vertical and horizontal expansion. As a result, the productivity per feddan has considerably increased. In 1952, the average production of a feddan of cotton was 4.5 kentars (1 kantar = 99 lb.), and in 1972 it reached 6.6 kentars. During the same period, that of maize rose from 6.3 ardabs to 11.3 ardabs. The value of agricultural production increased from L.E. 418 million in 1952 to L.E. 1,075 million in 1969/70 (at current prices).<sup>(6)</sup>

The development of the national economy has been reflected in the pattern of foreign trade. The percentage of agricultural exports decreased from 95 per cent of total exports at the beginning of the fifties to 48 per cent in 1970/71, while the percentage of industrial exports rose from 11.9 per cent to 32 per cent.

The greater part of the Egyptian import trade has come to be in goods required for long- and medium-term industrial development, but the import of foodstuffs has increased rapidly because of the high population growth.

In the field of agricultural development certain other factors should be taken into consideration such as the greater care given to promoting animal wealth, the increasing use of chemical fertilizers and insecticides, and the development of mechanized methods, together with the improvement in administrative and organizational services, including agricultural financing and farm management, the provision of selected seed and the organising of marketing operations.

The surplus in agricultural employment is estimated to range between 25 per cent and 30 per cent of the total manpower engaged in agriculture. Yet the rapid increase in migration from rural areas to towns removes much of this surplus, especially in conditions of agricultural development and the reclamation of new land. Besides, the rural industrialisation programmes, which are mainly based on agricultural techniques, will help augment the productivity of the land and raise the people's standard of living.

This, in turn, will help towards making the rural population respond to the family planning programmes with the result that fertility rates and the natural increase of population will diminish.

## 9.2 Industrial Development and Population Change

Industrial development is considered the most important way of achieving economic growth in Egypt. There are many advantages in industrialization: the raising of the standard of living, the diversification of work opportunities, not only in industry, but also in the dependent subsidiary services, and the raising of manpower productivity.

Investment in industry (excluding electricity and construction) amounted to L.E.962 million during the period 1959/60 - 1969/70.<sup>(7)</sup> The most important industries at the beginning of the fifties were sugar-refining, spinning and weaving, cement and fertilizers. Production levels in these industries have increased many times since then, due to the expansion of some factories and the construction of others. Many important new industries have been established such as iron and steel, chemicals, plastics, light and heavy engineering, electrical engineering, vehicle assembly, radio, television and refrigerator manufacturing. Industrial planning takes into account the demand for heavy industrial products in addition to those for consumer goods.

The main emphasis of the High Dam electricity seems to be directed towards those heavy industries with very high electricity consumption, such as fertilizers, aluminium and iron and steel. The most immediate effect of the electrical

power generated by the High Dam is to enable the important KIMA fertilizer plant at Aswan to operate at full capacity throughout the year, for its output used to fall to one quarter during the months when it suffered from the reduction in electric power generated by the former Aswan hydroelectric station.

New development schemes for the present decade look towards an expansion of basic industries such as the aluminium complex at Nag Hammadi as well as the enlargement of the Helwan Iron and Steel Works by the addition of two new blast furnaces, which will increase output from 300,000 tons to 1.5 million tons a year. Iron and steel production here is to rely on ore deposits in Baharia oasis in the Western Desert.

In 1952, industrial production did not exceed L.E. 304 million, while in 1972 it had expanded to more than five times the 1952 figure (Table 9a). The share of the industrial sector in the national income rose from about 9 per cent in 1952 to about 22 per cent in 1970/71.<sup>(8)</sup>

In the twenty years 1952-72 industrial exports increased from L.E. 13.6 million to L.E. 148 million. Manufacturing industries and petroleum and mineral plants succeeded in increasing the volume of their exports almost eleven-fold over the 1952 figure (Table 9b).

The National Action Programme (1971) set as its goal the doubling of the national income within ten years and stressed that the greater part of the burden involved in

TABLE 9a

Development of the Value of Production of the Various Industrial Sectors  
(Value in millions of pounds)

Sector	1952	1972	Ratio % 1972 : 1952
Petroleum	34.2	153.1	447.7
Spinning & Weaving Industries	84.6	511.0	604.0
Food Industries	122.3	505.0	412.9
Chemical Industries	20.5	134.5	656.1
Engineering and Electrical Industries	30.1	205.8	683.7
Metallurgic Industries	3.6	84.7	2,352.8
Building Materials & Thermics	8.4	61.9	736.9
Total	303.7	1,656.0	545.3

Source: Ministry of Industry (A.R.E.). Egypt's Industrial Revolution in 20 Years, 1952-1972,  
Cairo, 1974, p.6.

TABLE 9b

Industrial Exports

(Value in millions of pounds)

Sector	1952	1972	Ratio % 1972 : 1952
Spinning & Weaving	5.2	65.9	1,267.3
Food Industries	2.1	16.9	804.8
Engineering & Electrical Industries	0.5	9.9	1,980.0
Metallurgic Industries	2.1*	5.6	266.7
Chemical Industries	1.9	3.1	163.2
Building Materials & Thermics	0.2	5.9	2,950.0
Private and Co-operative Sector	(**)	17.8	-
Petroleum	1.6	22.9	1,431.2
Total	13.6	148.0	1,088.2

\* Including mining industries.

\*\* Distributed among Sectors.

Source: Ibid., p.8.

such an effort should fall on the industrial sector, which was regarded as the main source of any increase in national income. The kind of increase required would raise the volume of industrial production in 1979/80 to about L.E. 4,663 million (about 120 per cent of the volume of industrial production in 1969/70). With such an objective in view, a ten year plan (1973/82) has been devised for industry, divided into two five year plans (1973/77 and 1978/82).

Some of the main objectives of the first five year plan of the National Action Programme are these: an investment programme to L.E.1,030 million; the raising of the production level to L.E.1,054 million; the raising of the value of exports to L.E.253 million; the creation of 118,000 new jobs; all this leading to an increase in national income of L.E.353 million.<sup>(9)</sup> One of the characteristics of the first five year plan is the stress laid on heavy, basic and strategic industries, with the aim of ensuring industrial integration and greater national self sufficiency, and at the same time spreading the development of industrial complexes throughout the country.

### 9.3 Social Development and Population Change

Social development is an integral part of the modernization process. In fact, social, economic and demographic factors are interrelated. Many social services are now being organised to contribute to the process of social modernization.

Before 1952 education facilities were limited. During

the period 1952-71 the number of primary stage pupils has increased from 1.6 million to 3.8 million, an annual rate of increase of 7.1 per cent, which is about three times the rate of population growth. This has largely been due to free education at all stages and the fact that the primary stage is compulsory. In spite of free education, the absorption rates are far from complete, especially for females, as shown in Table 9c. Absorption rates for males are much higher and reach about 85-90 per cent.

TABLE 9c

Females at Compulsory School Age  
and Number Accepted, 1960-70

(Numbers in thousands)

Years	Estimates of Females (6 years)	Accepted	Rate of Enrolment
1960 - 61	315.1	210.0	66.6
1965 - 66	414.9	280.9	67.7
1967 - 68	436.7	257.5	59.0
1969 - 70	459.4	284.6	62.0

Source: Khalifa, A.M., The Population of the Arab Republic of Egypt, Cairo, 1973, p.81.

The number of preparatory and secondary school students increased from 250,000 in 1952 to about 1.5 million in 1970/71, that is six times, during the period 1952 - 1970/71. Furthermore, university education witnessed a real revolution, the existing universities were enlarged and new ones were established. The number of students at universities and higher institutes in 1970/71 exceeded 218,000 compared with only 40,000 in 1952. (10)

As mentioned before, the number of beds in hospitals has risen to over 73,000, that is an increase of 150 per cent during the period 1952-72. Now there are 2.2 beds per thousand citizens. The number of practising doctors has risen to about 15,000 with an average of one doctor to every 2,300 citizens.

The state has established an independent Ministry for Housing for the first time in the history of the country. During the period 1965/66 to 1970/71 the number of urban housing units built was 193,550 and the number of rural housing units built was 75,592. In 1966 the number of existing housing units in urban governorates was 1,205,031, in Lower Egypt 2,308,001 and in Upper Egypt 2,269,390. During the ten years from 1959/60 to 1969/70 the state invested about L.E.408 million in the housing sector, excluding investments in Public utilities which amounted to L.E.100 in the same period.

#### 9.4 Socio-economic Implications and Population Change

Egypt has a low average income, a high rate of illiteracy, and small-scale agriculture is the usual occupation. Furthermore, with a birth rate of 34.8 per thousand population in 1971,<sup>(11)</sup> and a death rate of 13.1 per thousand population in the same year,<sup>(12)</sup> the growth rate is more than 2.5 per cent per annum. Egypt then, has a demographic pattern observed as typical in low income areas. This has two salient features: (1) a young population, with a high ratio of dependents to earners; and (2) an actual or incipient high rate of population growth.

It is our belief that the level of modernization and stage of demographic transition are mutually interrelated. Rapid population growth contributes to the stagnation or lowering of socio-economic standards in a country. At the same time low socio-economic standards are the main reasons for the high fertility rates. Therefore, it can be said that socio-economic development is of prime importance if fertility rates are to be reduced.

In spite of the continuous growth of the national product, Egypt has been and still is unable to cope with the rapid increase of her population.

The agricultural-type economy has undoubtedly contributed to the population problem. For a long time, Egypt's economy was based largely on agriculture. About 68 per cent of the population was engaged in agricultural activities at the beginning of the present century. This decreased to only 58 per cent in 1960 and to 51.3 per cent in 1970. On the other hand, the proportion engaged in manufacturing increased from 11.5 per cent to only 18.6 per cent during the same period (Table 9d).

The growth of population with its young age profile has contributed to an increase in the consumption of consumer goods and services. This has resulted in the stagnation of the percentage saved of the gross domestic product. This is in addition to the fact that local saving fell short of financing the investments of the first plan project, a state of affairs which induced the state to depend to some extent on external sources to finance the plan's investment.

TABLE 9d

Percentage Distribution of Labour Force by Economic Activity, 1897-1970

Economic Activity	1897	1907	1917	1927	1937	1947	1960	1968	1969	1970
Agriculture	68.0	70.0	68.5	67.0	69.0	62.4	58.0	54.7	52.5	51.3
Industry	11.5	11.5	11.5	10.6	10.6	12.3	12.6	17.0	17.4	18.6
Transportation & Commerce	8.0	7.6	10.0	12.5	10.4	12.1	11.7	12.8	13.3	13.5
Services	12.5	10.9	10.0	9.9	10.0	13.2	17.7	15.5	16.8	16.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: C.A.P.M.S., Population and Development: A Study on the Population Increase and its Challenge to Development in Egypt, Cairo, 1973, p.174.

Increase in consumption of consumer goods and in particular of food items, without a parallel increase in the local production to cope with it, has led to growing imports of consumer goods as shown in Table 9e.

TABLE 9e

Imports of Some Selected Consumer  
Goods in Some Selected Years

(L.E. Thousand)

Year	Food Grains & Flour	Meats	Edible Oils & Fats
1939	54	124	73
1945	3,357	327	77
1950	22,066	1,363	248
1960	26,291	1,619	2,874
1965	66,415	8,013	5,023
1970	30,524	3,226	13,012
1971	70,749	3,673	16,910

Source: Khalifa, A.M., Op.Cit., p.86.

#### 9.5 Basic Characteristics of the Development Plan (1973-82)

The general aim of the economic and social development plan for the decade 1973-82 has been to bring under control the economic activity of the community in the fields of production, investments, income, employment, social services and family consumption as well as to establish relations with the outside world of such a kind as to assist in the achievement of the planned objectives.

There are several more specific goals. For the first time in the history of the national economy, industrial income is planned to exceed agricultural income. The change

is intended to occur as from the fifth year of the plan. This will entail the radical transformation of the Egyptian economy into an industrial/agricultural economy by re-adjusting the structure of production, by giving powerful encouragement to industry, and by consolidating the growth of agricultural production.

It is intended that there should be a surplus in the balance of payments instead of a deficit as unfortunately was the case with the previous development plans as a consequence of the dependence on foreign capital for financing development. Under the present plan it is hoped to bring about an increase in the ratio of investments to income, from a level of 13.6 per cent in 1972 to 20.9 per cent in 1982. There will be an attempt to double the national income by the time the development plan is ended.

Particular stress has been laid in the plan on the need to improve social and economic standards in the rural areas, by starting a programme of rebuilding Egyptian villages, by extending the electricity and fresh water supply to the whole country, by co-ordinating the rural health services, and by raising the level of individual consumption.

It is intended that some attempt should be made to solve the housing problem and to simplify the present complex state of affairs by allocating the funds necessary for public sector construction of 20,000 dwelling units every year, in addition to the housing units to be built by the private sector and the building needed for industrial and rural housing in reclaimed areas.

The estimated increase in population up to the year 1982 has been taken into consideration in formulating the objectives of the plan. In particular it has been made clear that the rate of economic growth must exceed the rate of population growth.

There follow more detailed figures relating to the objectives of the national plan (1973-82), to be accomplished through two five year plans.

(A) Gross Domestic Product

The total value of production is expected to reach about L.E.11,080 million in the tenth year of the plan (estimated according to the prices of the base year 1972). This will result in a product amounting to L.E.5,735 million with an actual increase in the income amounting to L.E.2,860 million, that is, an increase of 99.5 per cent over the income in the base year 1972, or in other words an annual rate of increase averaging 7.2 per cent.

The aim of the plan is that the gross domestic product in the fifth year (1977) should amount to L.E.4,068 million, an increase of 41.5 per cent over its level in the base year 1972.

(B) Capital Formations and Investments

Consideration has been given to the availability of the necessary quantity of investment, i.e. to the creation of the new capital which must generate increased productive capacity and raise the efficiency of the existing productive capacity.

The scale of investment envisaged by the plan amounts to L.E.8,400 million during the ten years, distributed as follows: L.E.3,221 million during the first five year period (38.3 per cent of the total investment) and about L.E.5,179 million during the second five year period (61.7 per cent of the total estimated investment). The scale of investment will increase gradually during the years of the plan until it amounts to L.E.817 million in the fifth year, 1977. Investment in rebuilding the villages will amount to nearly L.E. 50 million in the first five years period, this taking into account the fact that a considerable part of the rebuilding programme will be serviced by the personal efforts of villagers themselves. The estimated overall investment sum in the ten-year plan is distributed among the sectors of the national economy as follows: commodity sector 54.5 per cent, distribution sector 21.9 per cent and services sector 23.6 per cent.

(C) Human Resources and Employment

The plan's estimate is that the average annual rate of population growth during the next decade is likely to be about 2.5 per cent, in spite of the observed decline in birth rate and the rate of natural increase since 1967. It is expected that the size of the labour force will rise from approximately 9,723,500 in 1972 to about 11,067,500 in 1977 and to about 12,511,000 in 1982. Full employment will be one of the main objectives of the plan. Planning for

full employment has been designed with the volume of investment in mind necessary to double the national income on the one hand and to bring about the planned change in the total national economic structure as well as the balance of payments position on the other hand. Thus the total number of jobs to be secured by the ten-year plan in its last year is planned to be approximately 11,646,500 as compared with about 8,673,300 in the base year 1972, an increase of three million job opportunities (i.e. 34.2 per cent over the ten years) of which 1.2 million will be created in the first five years.

The plan aims at achieving an advanced industrial economy, integrated in the earlier stage of development with the existing agricultural economy. This transition in the economic structure will affect the relative importance of the number of employees in the agricultural sector which will decrease while it increases in the industrial and other sectors of the national economy. The relative importance of the agricultural sector as an absorber of labour will decrease from about 47.1 per cent in the base year (1972) to about 44.5 per cent in 1977, and to 41.6 per cent in 1982; with steadily greater importance attached to the industrial and mining sector, the capacity of which is planned to have increased to 13.7 per cent in 1982 as compared with 13.1 per cent in 1977 and 12.2 per cent in 1972. Much greater importance is also to be attached to the electrical and construction industries, to transport and communication, trade and finance.

(D) Social Development Services

Education, health and cultural services have been planned in the light of the projected population increase. It is intended that these services should be extended to the greatest number possible of the people.

The plan aims at 100 per cent primary school education in year ten (the number of pupils to be 1,056,000). The proportion of primary school children receiving preparatory education is also to rise from 98 per cent in 1972 to 100 per cent in 1977, the intention being to raise the age of compulsory education to 15 years, to include the preparatory stage. The number of pupils admitted to secondary education is to be increased from 155,600 in 1972 to 218,200 in 1977 and to 272,200 in 1982, and the number of those to be admitted to higher education is to rise from 69,300 in 1972 to 92,600 in 1977 and 125,700 in 1982. The number of those to be educated to a basic level of literacy is to rise from 2.7 million in 1972 to 9.7 million in 1977 and 16.6 million in 1982.

The plan provides for the raising of standards in the fields both of public health and preventative medicine, with particular stress on health care for the infant and school age population, which will constitute 50 per cent of the total population. The number of public and central hospitals is to rise from 191 in 1972 to 212 in 1982. The number of comprehensive clinics established is to be 157 and the number

of rural health units is to rise from 1,986 in 1972 to 2,486 in 1982. The plan aims at extending health insurance to cover all government employees (1,300,000) in the first five year period.

Housing policy in the plan is intended to achieve several objectives. Villages are to be rebuilt and developed, with an addition of about 100,000 dwelling units for workers and farmers in the reclaimed rural areas. Industrial housing projects are to be initiated within reach of major industrial centres. The urban housing problem is to be eased by the building of 251,000 economic and medium dwelling units during the period 1973-77; and during the ten-year period as a whole one million dwelling units are to be built in urban areas. Finally, public utilities projects are to be put in hand, and the existing level of efficiency in these services raised to cope with population growth and with the rates of growth aimed at by the plan in the production and social services sector. In particular, it is intended to improve the provision of drinking water and of modern drainage.

(E) The Nation's Policy in Facing Internal Migration

Egypt is facing a trend of internal migration from rural to urban districts, which in turn has resulted in a great rate of growth in the cities. Problems of housing and communication have presented themselves in these cities as a result of overcrowding. The state has attempted to meet this challenge by increasing investment in housing and transportation in order to cover

the existing shortage in the main cities. Committees have also studied methods of limiting migration from the rural areas to the capital either through direct administrative means which regulate the use of the migrant labour force or through indirect means by raising the standard of living in the rural areas.

The electric power generated by the High Dam has made possible the launching of the long dreamt of scheme for the electrification of the Egyptian countryside. Under such a scheme all villages will be provided with electric power for lighting, electric pumping, agricultural machinery, small plants and cottage industries. According to planning officials, the full-scale electrification of the Egyptian countryside will require at least seven years for its completion. The first phase of the electrification scheme is at present under way, and will cover nearly 2,000 villages out of 4,200 villages. There is little doubt that the electrification of the Egyptian countryside will lead to profound and far-reaching changes in the socio-economic life of the rural masses. It will contribute tremendously to the relief of the chronic miseries of Egyptian rural life and thus reduce the enormous gap between the towns and the countryside.

From the economic point of view, rural electrification is going to be extremely valuable in creating the conditions for small-scale rural industry that will make use of rural labour during the slack seasons. As a corollary to this policy, Egypt's industrial capacity

as well as its rural living standards could be improved as a consequence of the new employment opportunities created in agro-industrial complexes throughout the countryside.

The establishment of a programme for the improvement and the rebuilding of the Egyptian villages should be considered an important part of any overall policy. It will also be necessary to follow a policy of redistribution of the population by the creation of new settlement regions on the North Coast and in Sinai and by encouraging a balanced development of industries and universities in various regions.

(F) The Population Policy

Population increase is, of course, a factor impeding the attainment of development plan objectives, and if the problem of the population were to continue, "it would destroy all hopes of development and progress, and, in fact, threaten our very existence". (13)

Population policy has been integrated in the general development plan. Consequently, there are two aspects of the development plan to be noted: firstly, the extension of the economic and social development programmes; secondly, the reduction of the population growth rate by means of a reduction in fertility rates. As was mentioned earlier, according to the statement published in 1974 by the Supreme Council for Population and Family Planning, the policy is to reduce the annual growth rate from 20.6 per thousand in 1973 to 10.6 per thousand in 1982. This target can be achieved by a

reduction in the birth rate from about 34 per thousand in 1973 to about 24 per thousand in 1982 (a one per thousand decline per year), and by reducing the death rate from 14.2 per thousand in 1969-71 to 13 per thousand in 1982. (14)

Despite a certain decline recently (from 44.4 per thousand in 1950 to 34.8 per thousand in 1974, (15) i.e. -21.6 per cent) the crude birth rate remains at a high level. There is on the other hand the expectation that death rates will continue to decline, particularly among children under 5 years of age, due to the planned development of child welfare centres and the expansion of medical services. The techniques of death control have been widely and effectively used, but the techniques of birth control have been limited in their effect to a small fraction of the urban population.

The main factors influencing a more rapid reduction in population growth, and upon which the National Plan is based, are as follows:

1. The Socio-economic Standard of the Family

Where the socio-economic standard of a family is at subsistence level, families see nothing to prevent them having more children. On the contrary, the family may expect greater economic return the greater the number of children. For this reason, raising the family's socio-economic standard would lead to a drop in population growth. The difficulties encountered in raising the socio-

economic level of the family are evident if the increase in national income is set against the increase in per capita income. The total national income (at constant prices) increased from L.E. 806 million in 1952/53 to L.E. 1,746 million in 1969/70, showing an increase of 116.6 per cent; during the same period the per capita income, also at constant prices, rose from L.E. 37.1 to L.E. 53.2, with an increase of only 43.4 per cent (Table 9f).

## 2. Educational Expansion

The expansion of education has an influence on fertility as it broadens and intensifies the self-awareness of the individual and engenders in him new aspirations towards a better social life. Where education is pursued to a higher level, marriage is generally delayed, with naturally a consequent drop in fertility rates. In the five years from 1965/66 to 1970/71 the total number of pupils at all stages of the educational process increased at the rate of 120 per cent.<sup>(16)</sup> The rate of educational advance, as one might expect, in urban districts has been higher than its counterpart in rural districts. The rate of educational advance in urban districts reached 48 per cent in the census of 1960 and 54.3 per cent in 1966, the figures for males being 32 per cent and 36.1 per cent, and for females 16 per cent and

TABLE 9f

Total National Income and Per Capita Income  
in Egypt from 1952/53 to 1969/70  
Constant Prices (1952/53)

	National Income L.E. Millions	Annual Increase %	Per Capita Income L.E.	Annual Increase %
1952/53	806.0	-	37.1	-
1953/54	871.0	8.1	39.1	5.4
1954/55	930.0	6.8	40.8	4.3
1955/56	881.0	-5.3	37.7	-7.6
1956/67	897.0	1.8	37.5	-0.5
1957/58	959.0	6.9	39.9	6.4
1958/59	985.0	2.7	39.4	-1.3
1959/60	1,091.0	10.8	42.6	8.1
1960/61	1,139.0	4.4	43.3	1.6
1961/62	1,190.0	4.5	44.2	2.1
1962/63	1,324.0	11.3	48.0	8.6
1963/64	1,416.0	6.9	49.9	4.0
1964/65	1,480.0	4.5	50.7	1.6
1965/66	1,554.0	5.0	52.2	2.9
1966/67	1,559.0	0.3	51.8	-0.8
1967/68	1,544.0	-1.0	49.4	-4.6
1968/69	1,632.0	5.7	51.0	3.2
1969/70	1,746.0	7.0	53.2	4.3

Source: C.A.P.M.S., Population and Development: A Study on the Population Increase and its Challenge to Development in Egypt, Cairo, 1973, p.243.

19.2 per cent in the 1960 and 1966 censuses respectively. In 1966 the rate was only 20 per cent in rural areas, that is, males 16 per cent and females 4 per cent. So it is clear that the state in its fight against population increase will have to pay special attention to the spread of education at all levels, and particularly to concentrate its efforts on the development of educational facilities in the rural areas.

### 3. Women's Employment

The employment of women, especially outside domestic and secondary farming activities, their employment as part of the country's direct productive capacity and their transformation into an economically active labour force, has profound consequences. Women acquire a new social status and new dignity and their earnings contribute to a higher family income. The insecurity felt by women who are intimidated by the ever-present danger of divorce and polygamy is greatly reduced as they feel more able to secure their own future, and as they feel less dependent on others. The change in the economic pattern of the family as a result of the employment of women changes also the family's attitude towards the birth of children, and there arises a clash between the claims of children and work which motivates women to control their fertility. In 1970 the percentage of women in the labour force was low, 3.6 per cent of

the total population against 49.4 per cent for men. This percentage was composed of a maximum in urban governorates of 5.9 per cent and a minimum in Upper Egypt of 2.6 per cent, as compared with 3.2 per cent in Lower Egypt (Table 9g).

TABLE 9g

Percentage of Labour Force by Sex  
to Total Population, 1970

Region	Males	Females	Total
Cairo	43.5	5.8	24.4
Alexandria	45.6	6.1	25.6
Total Urban Govs.	44.1	5.9	24.7
Lower Egypt	49.0	3.2	25.9
Upper Egypt	53.3	2.6	28.0
Egypt	49.4	3.6	26.4

Source: Ibid., p.198.

#### 4. Mechanization of Farming

Traditional methods of farming require much physical effort. Rural communities, therefore, tend to produce more children to meet primitive labour requirements. Accordingly, high fertility is the logical result of environmental circumstances. When human labour is replaced by the machine, then the motives for excessive procreation should generally disappear. People will then acquire new tendencies towards lower birth rates. In addition, if the machine replaces manual labour, sanitary conditions will improve, awareness of the value of the individual will increase, and this,

together with higher family income, will encourage the trend towards lower fertility. Agricultural co-operatives have, in fact, recently begun to initiate mechanization programmes but not yet on a large scale. The expansion of such programmes is vital.

#### 5. Industrialization in Rural Areas

Industrialization is of tremendous socio-economic value and a main factor for change in rural areas, inevitably leading to the urbanization of the countryside. Furthermore, industrialization influences fertility by providing the conditions required for a raising of the socio-economic standard of the rural community. Consequently, the masses acquire new attitudes, and the trend emerges towards a lower birth rate. The Egyptian government has recently become active in the field of rural industrialization. However, the current projects are scattered and small-scale. The emphasis has been on agriculturally based industry only and no nationwide schemes for rural industrialization have yet been produced.

#### 6. Reduction of the Infant Mortality Rates

Despite a considerable decline (from 186 per thousand in 1917-21 to 122 per thousand in 1966-70) the Egyptian infant mortality rate remains one of the highest in the world. This has led parents to have more children so as to compensate for their

losses. If this rate is reduced as a result of the improvement of social and health conditions, mass vaccination, improving environment and nutrition, then it is expected that parents will feel more secure about their children's survival and thereby acquire new attitudes towards fertility.

#### 7. Social Security

In a rural community children play an important role in ensuring security. If Social Security could be provided by the state as a substitute for that provided by children, then parents would tend to acquire new attitudes towards fertility and be satisfied with fewer children.

The state also aims to improve the age structure of the population as a whole by narrowing the base of the population pyramid and raising the percentage of the productive population in order to lighten the burden of dependency and to raise the standard of living.

The population problem in Egypt is serious and is likely to become yet more serious during the next decades. If present population growth rates are maintained, there is little prospect of economic expansion keeping pace with demographic expansion. It is vital as a consequence that the growth rate be lowered by adequate family planning programmes. The simple multiplication of family planning clinics and services, the widespread distribution of contraceptives and nation-

wide advertisement are not enough. It is not only a matter of making mothers swallow pills, fitting them with IUDs, distributing condoms and diaphragms, it is a question also of stimulating and hastening a fundamental change of attitude and behaviour. To change attitudes is certainly the more difficult and the longer process.

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