CAIRO UNIVERSITY
FACULTY OF ENGINEERING
DEPARTMENT OF ARCHITECTURE

M. SC. THESIS IN TOWN PLANNING

THE ROLE OF MIDDLE SIZE TOWNS IN THE URBAN DEVELOPMENT OF EGYPT

Subtitled By :

Eng : **Faisal Abd El-Maksoud Abd El-Salam**
B.Sc. ARCH. DIP. T. P. , DEPARTMENT OF ARCHITECTURE ,
CAIRO UNIVERSITY

Under The Supervision Of :

Dr. **Sayed M. Ettony**
Arch. Dep. - Faculty of Eng.
CAIRO UNIVERSITY

Prof. **Mahmoud Yousry**
Arch. Dep. - Faculty of Eng.
Deen , Institute of Regional & Urban Planning
CAIRO UNIVERSITY

APRIL 1983

ACKNOWLEDGEMENT

The auther wishes to express his gratitude to all those who generously helped in undertaking the work that resulted in this thesis. Grateful thanks are due to Professor Mahmoud Youssry 'Professor of Urban Planning, Department of Architecture, Cairo University and Dean of the Institute of Urban and Regional Planning, Cairo University' for his hearted support, continuous encouragement and valiable advice. His patience, careful guidance and precise directives shaped and positively definend the format of this work.

Special thanks must be extended to Dr. Sayed M.Ettouney for supervising the various steps of this research and for offering most of the refrences used in this thesis. His continuous encouragement and enthusiasm provided an ongoing strong supports throughout the work.

Special acknowledgement must be given to professor taher El-Sadek for his overwelmingly kind support, fruitful disscussions and the supply of valuable literature. Acknowledgement should also be extended to Professor Ahmed Khald Alaam for his valuable comments and hearted co-operation.

The auther wishes to express his sincere gratitude to Professor Ahmed Amin Mokhtar for his encouragement and generous assistance. Special thanks are also due to Dr. Hassan Dorrah who sincerely helped in the edditing of this thesis.

Grateful thanks must be extended to Dr. Ashraf Shams ElODin ' of the UNDP office in Cairo', Mr. Helmy Farag 'Chairman of Southern Upper Egypt Regional Planning Authority' and Eng. Abu Bakr Mitkies, for their hearted support, encouragement and generous assistance.

Last but not least, the auther would like to acknowledge the assistance given by Eng. Hala Mekkawy, Eng. Redah Abdel Hakim, Eng. Ahmed Smaha and Eng El-Saied Zaky for their valuable help in preparing the final manuscript of this thesis. Also, the auther cannot forget Mrs. Ekhlass M. Ibrahim who patiently typed the original manuscript of the thesis.

AN ABSTRACT

This thesis is concerned with middle size towns, a rather neglected yet important componant of Egypt's urban structure. It attempts to study their growth potentialities and recommends means for their development. It presents and critically appraises a number of spatial distribution alternatives for the recommended middle size towns through which these towns can play an active role in the urban development of Egypt.

The main goal of this work is, to seek means for maximising the efficiency of Egypt's urban structure through the revitalization of existing urban settlements, with emphasis on middle size towns with development potentialities.

The thesis comprises six chapters :

Chapter I :

Contains an introductory study of the development problems in general, with emphasis on urbanization problems in developing countries. It tries to identify Egypt's profile as a country with an interesting development experience that spanned the past few decades.

Chapter II :

A closer view on the population growth and urbanization trends of Egypt, since the end of the 19th century up till now. It attempts to provide a clear identification to the urbanization problem of Egypt and the likely future trends.

Chapter III :

A classification of Egypt's urban settlements is attempted to allow definition of middle size towns as one of the size classes included within Egypt's urban structure. It then follows their growth during the past four decades and the problems that affected their growth.

Chapter IV :

It contains a comparative study of the various basic settlement concept within the framework of the National Urban Policy Study. It expands on the potentialities of the secondary cities strategy, as one of these concepts,as means of solving Egypt's urbanization problems.

Chapter V :

A comprehensive criteria is worked out and applied on the spectrum of middle size towns to assess their development potentialities. Also, alternatives to the development strategies of these towns are presented in this chapter.

Chapter VI :

This contains the conclusions, main findings and recommendations of this research.

In addition, two appendicies are included at the end of the thesis, these are :

Appendix A :

A case study of Bilbeis town. It tries to evaluate the role of the

industrial growth in the comprehensive development necessary for revitalizing middle size towns.

Appendix B :

This includes tables and basic data used in this work.

LIST OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

BACKGROUND

The urbanization problem of Egypt is not only a result of the over-urbanization population, but also the over-concentration of urban population in relatively few cities. This creates an imbalanced urban structure which has lead to severe urbanization problems in the two primates (Cairo and Alexandria) and other large cities. On the other hand, urban settlements of lower ranks (aside from their own problems) have not taken any part in sloving such urbanization problems.

Over-urbanization is mainly due to high rates of natural increase and rural-urban migration. To reduce these rates as an approach for solving Egypt's urbanization problem is a very difficult one, due to the complexity and sensitivity of its cultural, relegious, social and historical back-grounds. However, to restore balance to Egypt's urban structure in order to absorb the increasing urban population could be more reasonable and prac-tical approach to the problem ' through the revitalization of existing urban settlements and the creation of new urban centres'.

All attempts that have been made during the past few years to release the over-concentration of urban population in Cairo and to restore balance to Egypt's urban structure, were mainly within the new cities strategy . It aims at creating new urban settlements in the desert to protect the arable land and attract the population away from the two primates. However, this strategy needs huge investments which are beyond the capabilities of a developing coun-try such as Egypt, in addition to the social constraints resulting of mass movements of population.

This thesis attempts to point out a parallel and a rather short term line of action through the development of middle size towns that will allow them to

play an active role in the urbanization process of Egypt. In other words, increasing the efficiency of the urban structure of Egypt through making fu use of the already existing urban settlements.

WHY MIDDLE SIZE TOWNS ?

The main reason of the imbalanced urban structure of Egypt, is the ove concentration of urban population in a limited number of cities. Nearly 75. of the total number of urban settlements are secondary cities, that experie an almost net loss of population or a no growth situation due to the out - migration towards the two primates and other large cities. Generally speaki the two primates (Cairo and Alexandria) and the other large cities with o 100,000 inhabitants (governorates capitals and major industrial centres) enjoy a relatively fare opportunity for development, a self generating acti due to their administrative and governmental weight among other factors. The majority of these large urban centres need to be controlled so as to avoid exaggrated development plans which attract even more population that will in turn increase their urbanization problems.

On the other hand, urban settlements with a population size ranging be ween 20,000 - 100,000 urgently need comprehensive development to allow them to share in the urbanization and development of Egypt. The dilution of capi investments over many urban settlements and the infrastructure problems, ar the two major factors that adversely affecting the development of such seco ary cities.

Infrastructure facilities of the lower ranks of secondary cities are

not adquate to support the existing population not to mention the expected urban growth. On the other hand, infrastructure facilities of higher ranks of secondary cities are already over-loaded and exhausted with the existing population.

Further more, the physical growth of the higher ranks of secondary cities is almost un-controled due to the random expansions on arable lands surrounding these towns.

In the light of what has been previously mentioned, the medium size of secondary urban settlements 'middle size towns' could enjoy a reasonable threshold of infrastructure facilities and a controllable physical growth, which provide a good approach for the development of these towns.

OBJECTIVES OF THE STUDY

The objectives of this work may be summarized as follows :

i) To address the question of middle size towns.

ii) To define these middle size towns and outline their main features.

iii) To follow-up the development potentialities of these towns and review their problems and causes.

iv) To draw possible roles they can play in the urban life of Egypt for the country's development.

SCOPE OF WORK

For achieving the previously mentioned objectives, this work is divide into three main parts, these are :

Part I, The Context :

An introductory study aims to identify the urbanization problem of Egypt as a developing country, with emphasis on middle size towns as one o the components of Egypt's urban structure. It tries to define middle size towns, then follows their role in the urban life of Egypt during the past t review the main features of these towns and the problems that affected thei growth. This part is covered in the first three chapters.

Part II, Suggested Solutions :

An evaluation to different settlement concepts with emphasis on the potentialities of secondary cities emphasis strategy as means of solving Egypt's urbanization problems. It provides alternative strategies for the development of middle size towns through which they can play an active role in the country's development on both regional and national levels. This part is covered by chapter IV. and chapter V.

Part III, Recommendations :

This is the concluding part that summarizes the findings of this work and out-lines its recommendations. Chapter VI covers this part of the rese

A case study of a middle size town 'Bilbeis' is introduced to provide a neat picture guidance in formulating the final recommendations of this thesis in order to be relied upon a practical practice together with theore cal analysis, ' Appendix A'.

The scope of work, the complexity of the problem, besides the limited information on the subject and the lack of published research, in addition to the time limitations are some of the limitations on the findings of this work. However, the following works were of great help in establishing a solid taking off base for this research.

i) U.N. and World Bank publications about the development of the world and developing countries.

ii) General censuses for different years, 1907 - 1976.

iii) Field survey and site interview in Bilbeis town (the auther was responsible for the physical studies of Bilbeis Development Potentialities study, El-Obour Master Plan Study with the GOPP and GTZ).

iv) The National Urban Policy Study Reports.

v) Available refrences that handle the subject of this thesis.

Finally, this work is both a modest start and of an open ended nature, its function is to hopefully persuade further research into this delicate issue of Egypt's development. If so it does, this will be a satisfying reward by itself.

I

URBANIZATION PROBLEMS IN DEVELOPING COUNTRIES

' The world population has already increased five fold during the last two centuries, and on the present trends it will nearly double again by the end of this one. Even more to the point are the profoundly significant changes taking place in its distribution. Three-quarters of the total are now inhabitants of less developed countries. But since poor countries have a population growth " averaging 2.4 per cent per annum " double that of the rich, it is a proportion which is going to increase in comming decades.

Setting aside the relaively minor effects of migration, population growth depends on the balance between births and deaths. What lies behined the present population explosion is not a marked rise in fertility, but a spectacular fall in the death rate.' - (Donaldson, 1971, pp.56)[1/]

' The population explosion of the poor world is historically without precedent, both in its speed and in its lack of economic cause. North-West Europe, during the Industrial Revolution, edged up its population by about 1 per cent each year; and even this small victory of live birth-rates over death-rates came after, and partly resulted from, revolutionary improvements in food production " specially through crop rotation ". In Africa, Latin America and south Asia, population growth averages more than 2.5 percent each year. This is because new techniques of death control, developed in rich countries, have spread fast and cheaply throughout poor countries.' - (Seers and Joy, 1971, pp.45).[2/]

This rapid population growth in poor countries, which are also called developing countries, hasn't accompanied by an economic growth of the same rate. This means that, the limited resources of these countries must be

---

1/ Worlds Apart - The Economic Gulf Between Nations, Penguin Books Ltd, U.K.
2/ Development In A Divided World, Peguin Books Ltd, England.

divided more and more to satisfy the different needs of the population who will be more and more concentrated in those parts of the world least capable of providing them, and this has to be away from savings and investments which are mandatory for the development process.

This introductory chapter discusses urbanization as one of the most serious problems in developing countries. A general overview on the developing countries problems with concentration on the rapid urban growth, will be illustrated throughout the chapter.

Two main items will be investigated on the following pages, with emphasis on the Egyptian case. First, is developing countries and the development problems, through which a study for the development experiment ' 1950 - 1975 and its relationship with both people and income, in addition to an overview on the population problem in developing countries, have been carried out. Also, Egypt's profile as a developing country has been identified. Second, the developing countries urbanization. Both of its trends, reasons and corresponding problems have been investigated throughout this study .

1.1 DEVELOPING COUNTRIES AND DEVELOPMENT PROBLEMS

1.1.1 The Development Experiment, ' 1950 - 1975.[1/]

During the past three decades, the developing countries have achieved an observed growth that increased the per capita income by about 3.0% per annum accompanied by an annual growth rate of more than 2.0% in the fifties

---

1/ البنك الدولى - تقرير التنمية فى العالم - أغسطس ١٩٨٠.

and 3.4% in the sixties,while the per capita income didn't increase allover the past 100 years with more than 2.0% annually in the industrial countries.

During the period 1950-1975, many sources have subsidized the development operation, such as .. the rapid increase of the international trade which is a result of the fast development in the industrial countries', the growth of tourism, the labour force migration and the large scale of capital movements. All have helped the developing countries to find out the necessary foreign exchanges to their development programs together with local funds. This transformed the developing countries to be an absorbing market for many industrialized commodities and a good consumer in capital markets.

Development is usually accompanied by a number of problems, these could be summarized as follows.

i) Shortage of foreign exchanges needed to the development programs.
ii) Brain Drainage to industrial countries looking for better standard of living.
iii) Shortage of food and bad health conditions.
iv) Illitracy and shortage of educational, social and health services.

Decision makers, politicians and political climate together with socio-economic environs are responsible for these previous problems which are so complex because of the number of factors affecting it.

Generally speeking, the world may be divided into four main groups, each group comprises several countries charactarized by certain features, these four groups are:

i) Industrial Countries .. These are the countries which are the member of the 'O.E.C.D' [1/], except Greece, Bortugal, Spain and Turky. [2/]

ii) Central Planning Economics Countries, 'C.P.E', .. these are the countries following the central economics ideology, such as Cuba, China, Soviet Union ... etc.

iii) Exported Oil Countries .. These are the countries of a surplus capit such as Lybia, Kuwait, Saudie Arabia, Oman, Quatar and U.A. Emirate

iv) Developing Countries .. these are the majority of the world countri and population. Such countries could be subdivided into two groups, based on the 'G.N.P. per head according to 1976 statistics, namely . low income developing countries 'in which the per capita income is less than 250 $ per annum', and medium income developing countries ' which the per capita income per annum is over 250 $'.

1.1.2 Interactin Between Income, Population and Development.

The development process has often proved to be a painful long one, fo the poor 'developing' countries, and to be sustained it requires a real ch nge to all the economic growth and population problems. Development means,

'Bringing about basic changes in the underlying social fabric of attit udes and institutions so that the objectives of the society can be more

---

1/ 'O.E.C.D', is the Organizqtion of Economic Co-oparation and Development
2/ These countries are considered as medium income developing countries.
3/ Other exported oil countries are considered as developing countries.

fully realized. and in this transformation, it is important that the mass of people are involved'. - (Donaldson , 1971, pp. 80).[1/]

'It has become a platitude to say that development means modernization and modernization means the transformation of human beings. Development as an objective and development as a process both embrace a change in fundamental attitudes to life and work in social, cultural and political institutions'. - (Seers and Joy, 1971, pp. 76)[2/].

Neither development is rising the per capita income, nor its rate per annum could be envoked as a satisfactory indication of real development, due to the nature of the economic structure of developing countries , and the different products and factors necessary to meet the population requirements. Thus, the mass population may not be immediate beneficiaries 'receiving high incomes', but they can be indirect beneficiaries through receiving high educational, health, social and administrative services during the development process and its accompanied different transformations. Though, some economic benefits may be quickly noticed, specially in case of an active population policy aiming to rise the per capita income through reducing the population growth in the future. The full benefits occure only after one pr two genrations.

For example, some of the oil states like Kuwait, Saudie Arabia, Oman and Lybia, have experienced rapid rates of out-put growth, and its per capita income is higher than many other countries, but it couldn't be considered as real developed countries as the industrial ones.

1/ Worlds Apart-The Economic Gulf Brtween Nations, Penguin Book Ltd, U.K.
2/ Development In A Dividing World, Penguin Books Ltd, England.

1.1.3 The Population Problem In Developing Countries.

The population explosion represents a serious chalenge to developing countries and its ambitious development programs. This rapid population growt means more and more education facilities, health and social services, new job opportunities in addition to the housing requirements necessary for the new population.

The annual population growth rate between 1950-1975 in developing countries was 2.4%. , while it was only 1.0% during the industrialization period in the industrial countries. This population explosion is due to the great improvements in health conditiona and facilities which lead to a remarkable reduction in death rate, while in the same time both of birth and fertility rates didn't changed. This will increase the developing countries population to about 3.5 billions in year 2000 compared to 2.1 and 1.2 billions in 1976 and 1950 'respectively'.[1/]

Table '1.1', demonestrates how high are the birth and fertility rates of developing countries compared to other groups mentioned previously. Furthermore, while the birth rate experienced a reduction of only 1.5% between 1950-1975, the corrsponding reduction of the death rate was 25.0%. On the other hand it is obveious, how high are the birth and fertility rates of Egyot even when compared to its own group.

1/ البنك الدولى - تقرير التنمية فى العالم - غسطس ١٩٨٠.

Table '1-1'[1/], Birth, Death and Fertility Rates of Developing Countries and Other World Groups, 1950 - 1975.

World Countries Groups	Birth Rate per 1000 'pop'		Death Rate per 1000 'pop'		% of change		Total Fertility Rate
					B.R.	D.R.	
	1960	1976	1960	1976	1960/1970	1960/1976	
Industrial Countries	18	16	10	10	13.6	-	2.3
'C.P.E$_s$' Countries	24	18	10	9	16.1	-	2.4
Oil Exported Countries	48	46	19	14	5.9	32.1	7.7
Low Income Developing Countries	48	47	26	20	2.1	21.1	6.2
Medium Income Developing Countries	45	40	17	12	9.2	27.2	6.1
Egypt	44	35	19	13	20.5	31.6	5.2

Briefly, the developing countries under these circumstances of population growth have to balance between satifying its production investments necessary for their development programs, and the consumption needs of the increasing population with their all problems of food, poverty, health ... etc.

1.1.4 Egypt As A Developing Country.

Egypt is a medium income developing country 'according to the World Bank classification' as its per capita G.N.P. amounts to about 280.0 $ ' 1976 statistics '.

١/ البنك الدولى ـ تقرير التنمية فى العالم ـ أغسطس ١٩٨٠ .

The expression of medium income developing countries includes several countries of different ecnomic characteristics and in different economic stages. For example countries such as Egypt, Sudan and Bolivia 'which are still considered as rural countries' are included together in this group with some great industrial countries such as Yogoslavia and Brazil, In addition to othe countries like Venzewila and some countries of South Europe which have a per capita income more than 2500 $ per annum. But, all medium income developing countries are characterized by two main features.

i) The availability of natural resoureces that facilitate raising the standard of living of these countries.

ii) The great effect of international trade and capital movements, together with other economic environments in the industrial countries, on the development expectations of these countries.

In order to clarify the enormous economic differences between the previous four groups of the world countries and the location of Egypt as a medium income developing country within these groups, two economic measurements 'per capita G.N.P. and average annual inflation rate' have been indicated for each group in table, '1-2.'

Table '1-2'[1/], Economic Comparison Among the Four Groups of World Countries, According to G.N.P. (per capita) and Average Annual Inflation Rate, '1960-1976'.

World Countries Groups	G.N.P. (per capita)		Average Annual Inflation Rate (%)	
	$ 1976	Average Annual Growth Rate 1960/76	1960/1970	1970/1976
Industrial Countries	6,200	3.4	4.2	9.3
'C.P.E$_s$' Countries	2,280	7.0	-	-
Oil Exported Countries	6,310		1.0	33.3
Low Income Developing Countries	150	0.9	3.1	9.8
Medium Income Developing Countries	750	2.8	3.2	12.5
Egypt	280	1.9	3.5	5.2

1.2 URBANIZATION

'Urban population is defined as those localities with 20,000 or more inhabitants, while the population of smaller localities or open country-side is refered to as the rural and small town population.'[2/] - (Breese, 1972, pp.23).

1/ البنك الدولى - تقرير التنمية فى العالم - أغسطس ١٩٨٠ .

2/ This definition has come into wide use in international research. An early use of 20,000 as a lower size limit in the study of urban population appears in Kingsley Davis and Hilda Hertz, The World Distribution of Urbanization, Bulletin of the International Statistical Institute, vol.33, PartIV.

U.N. Bureau of Social Affairs, World Urbanization Trends, 1920-1960 'an intrim report on work in progress' - Breese, G. 'editor', The City In Newly Developing Countries, Printice Hall International, INC., London, 1972.

'The term " Urbanization " refers to the proportion of the total popula tion concentrated in urban settlements, or else to a rise in this proportion A common mistake is to think of urbanization as simply the growth of cities' (Davis, 1972, pp.7).

The population explosion together with the high rates of rural-urban mi ration, which has been started due to the spread of industrialization, are resposible for the serious problem of urbanization, specially in developing countries in which the rapid urban growth was not accompanied by similar industrial growth. Urbanization trends in developing countries, their reasons and problems are disscused hereafter.

1.2.1 Developing Countries Urban Growth

The world has experienced a rapid urban growth corresponding to the industrial revolution, and urbanization has been increased more and more with the beginning of this century. Developing Countries have experienced this rapid urban growth only three decades before, when having their independency and started their development and industrialization programs. Table ' 1-3 ', follows the urban growth of the total world and developing countries between 1920 - 1980.

1/ The Urbanization of the Human Population - Breese, G. 'editor', The City In Newly Developing Countries, Printice Hall International, INC., London, 1972.

Table '1-3'[1/], Crude Tentative Projections of Total, Rural and Urban Population in Total World and Developing Countries, 1960-1980, and Estimates for 1920-1960 'million'.

Type of Settlements	1920 'est.'	1940 'est.'	1960 'est.'	1980 'project.'	Absolute Increment 1920-1960	Absolute Increment 1960-1980
Total World						
* Total population	1,860	2,298	2,994	4,269	1,134	1,275
* Rural - small town	1,607	1,871	2,242	2,909	635	667
* Urban	253	427	752	1,360	499	608
Developing Countries						
* Total population	1,188	1,476	2,017	3,080	829	1,063
* Rural, Small-town	1,120	1,341	1,698	2,343	578	645
* Urban	68	135	319	237	251	418
Developing Countries As Percentage of Total World						
* Total Population	64	64	67	72	73	83
* Rural, small-town	70	72	76	81	91	97
* Urban	27	32	42	54	50	69

1/ U.N. Bureau of Social Affairs, World Urbanization Trends, 1920-1960, ' an intrim report on work in progress',pp. 44 -Breese, G. 'editor', The City In Newly Developing Countries, Printice Hall International, INC, London, 1972.

Table '1-3', illustrates how developing countries total population are the highest percentage of the total world, and how rapid is the urban growth of these countries, specially between '1960-1980'. These developing countries have experienced high urban growth rates compared to either total population growth rate of these countries or, to urban growth rates of other world countries groups between 1960-1975 as elucidated in table '1-4'.

Table '1-4', [1/] Average Annual Growth Rate for Total and Urban Population of Different World Countries Groups, 1960-1975.

World Countries Groups	Average Annual Growth Rate ' % '			
	Total Population		Urban Population	
	1960-1970	1970-1975	1960-1970	1970-1976
Industrial Countries	1.0	0.8	1.9	1.8
'C.P.E$_s$' Countries	-	-	-	-
Oil Exported Countries	4.0	4.2	6.6	6.3
Low Income Developing Countries	2,4	2.4	5.4	5.5
Medium Income Developing Countries	2.7	2.7	4.8	4.5
Egypt	2.6	2.2	4.3	3.9

For more detaild study of the classification of developing countries according to their average annual urban growth rate '1960-1975', these countries could be subdivided to several groups as shown in table '1-5'.

1/ البنك الدولى - تقرير التنمية فى العالم - أغسطس ١٩٨٠ .

Table'1-5'.[1/] Classification of Developing Countries According to the Percentage of urban to Total Population, and Average Annual Urban Growth, 1960 - 1975.

Developing Countries Groups.	Percentage of Urban to Total Population %		Average Annual Urban Growth Rate '%', 1960 - 1975
	1960	1975	
Africa 'South of the desert'	14	19	5.0
North Africa & Middle East	32	44	5.0
Latin America	49	61	4.3
Asia	17	22	4.0
Southern Europe	40	51	3.2

Egypt as a developing country belongs to 'North Africa & Middle East' group which has the highest average annual urban growth rate between '1960-1975' as elucidated in table '1-5'.

This rapid urbanization of the world as a whole and the developing countries in particular during the past thirthy years has been caused due to several reasons as summarized here after.

1.2.2 Reasons of Rapid Urbanization

Generally, there were two main reasons for urbanization in pre-industrial countries. First,is the low productivity of medival agriculture in both per-acre and per-man terms, which implics that towns could not prosper on the basis of local agriculture alone but had to trade and to manufactor commodi-

---

١/ البنك الدولى ـ تقرير التنمية فى العالم ـ أغسطس ١٩٨٠ .

ties. Second, is the fudal social system, which had to specialize in commerce and manufacture, and evolved local institutions suited to this role for the purpose of gaining political dominance over these towns. In addition, the industrial revolution had created many job opportunities for the rural-urban migrants who looking for better standard of living.

'In the 19th and early 20th centuries, the growth of cities arose from and contributed to economic advancement, Cities took surplus manpower from the countryside and put it to work producing goods and services that in turn helped to modernize agriculture. But today in underdeveloped countries, as in present-day avanced nations, City growth has become increasingly unhinged from economic development and hence from rural-urban migration. It derives in greater degree from overall population growth, and this growth in nonindustrial lands has become unprecedented because of modern health techniques combind with high birth rates.

The speed of world population growth is twice what it was before 1940, and the swiftest increase has shifted from the advanced to the backward nations. The problem is not urbanization, not rural-urban migration, but human multiplication. It is a problem that is new in both its scale and its setting, and run away city growth is only one of its painful expressions,'[1/] - (Davis, 1972, pp. 19).

This statement, is true in the case of advanced countries which already reached reasonable stability of their population growth and rural-urban population Nevertheless, in case of developing countries, where urban growth rat

---

1/ The Urbanization of the Human Population - Brcese, G. (editor), The City In Newly Developing Countries, Printice Hall International, INC., London, 1972.

is almost twice that of total population, human multiplication couldn't be the only reason for the rapid urban growth, but together with the rural-urban migration. Otherwise, there wouldn't be so big difference between urban and total population growth rates of these developing countries.

As mentioned previously, the developing countries urbanization was not accompanied by similar economic or industrial growth like what had happend in the pre-industrial countries. There are some other reasons for the rapid urban growth of developing countries, that could be stated as follows ..

i) The low income of small farmers and peasants, which pushes them to migrate to urban areas searching for better conditions.

ii) The unequal distribution of development programs between rural and urban areas. The majority of these programs are directed to urban areas.

iii) The increase of unemployment rates in rural areas due to the imbalance of population growth rate with that of cultivable lands.

iv) The strong attaction of urban areas because of their good education, health and social services, in addition to different recreational facilities.

v) Population explosion due to high fertility, high birth rates and low death rate. This renders the population problem in developing countries more serious than that in advanced countries which have low fertility and birth rate.

The high urbanization trends of developing countries create a number of

problems that conflict with the ambitious development programs of these countries.

1.2.3 Urbanization Problems in Developing Countries

Generally speeking, rapid urban growth is always accompanied by several problems. Some of the developing countries urbanization problems could be summarized as follows ..

i) The collapse of infrastructure facilities due to the continuous popula tion increase in urban areas.

ii) The decrease of investments necessary for production improvements and long-term development programs due to the increase of urgent consumption demand 'social, health, education and health services' reauired for those urbanists.

iii) The spread of slums and informal housing on the peripheries of cities. A lot of money has to be annually used by the government for improving and rehabilitating such areas.

iv) High inflation rate due to the imbalanced growth of population and their purchase abilities.

v) The spread of disguised unemployment. Those immigrants to urban areas have to accept very hard works at small wages, usually in service sector as the industrial sector can not absorb these huge number of new comers. Thus, service sector has to grow not to meet the consumption

needs ' as in industrial countries ', but to absorb more and more un-productive labourforce.

1.3 SYNOPSIS

Egypt, is a medium income developing country, belonging to 'North Africa & Middle East' group which has the highest average annual urban growth rate between 1960 - 1975, among the different groups of developing countries.

Developing countries generally suffer from rapid urbanization growth which is mainly due to the population explosion (high birth and fertility rates accompanied by low death rate are responsible for this population explosion) together with rural-urban migration which plays an active role in increasing the rates of urbanization in these countries.

The low income of small farmers and peasants, the spread of unemployment in rural areas and the concentration of development programs in urban areas, in addition to the strong attraction of these areas due to their high standard of social and physical infrastructure facilities, are together responsible for increasing the urbanization trends of developing countries.

This rapid urban growth is always accompanied by several problems, especially in developing countries where, urbanization is not accompanied by similar economic or industrial growth. These problems include the collaps of infrastructure facilities of urban centres, the spread of slums and informal housing on the peripheries of cities, the spread of disguised unemployment, and the decline of investment resources due to the continuous rise in consumption demands and high inflation rates.

II

URBANIZATION IN EGYPT SINCE THE 19th CENTURY — AN HISTORICAL REVIEW

The previous chapter disscussed the development process and its problems in developing countries, specially the population explosion and the rapid urbanization problems, with emphasis on the Egyptian case. In spite of the common problems,and the common development objectives of different developing countries, each one has its special characteristics and own features.

This chapter is mainly concerned with the Egyptian case it attempts to follow up the history of population and urban growth of Egypt since the end of the 19th century and their future expectations up to the year 2000. Through this historical overview a geographical distribution analysis of urbanization in Egypt will be carried out, and an identification of its problems will be attempted.

2.1 POPULATION GROWTH

'Egypt's population is estimated to have totaled only 2.4 million at the beginning of the 19th century. Since then, it has roughly quadrupled twice, once during the 19th century and again during the last seventy-five years. It is estimated to reach some 66 million by the year 2000 'CAPMAS' Depending on different sets of assumption, however, the projected population by the end of this century could range between a low of 60 million and a high of 75 million people.' - (Sabbour Associates et. al., September 1976, pp. 1-5)[1/]

Egypt's population increased from about 2.5 million in 1800, to be about 10 million in 1899, then doubled that size in 1947 with about 19 million and they doubled again to account about 36 million in 1976. This historical population growth is elucidted in table '2-1' and Fig '2-1'.

1/ The Planning of Sadat City - Status Report 1, Cairo.

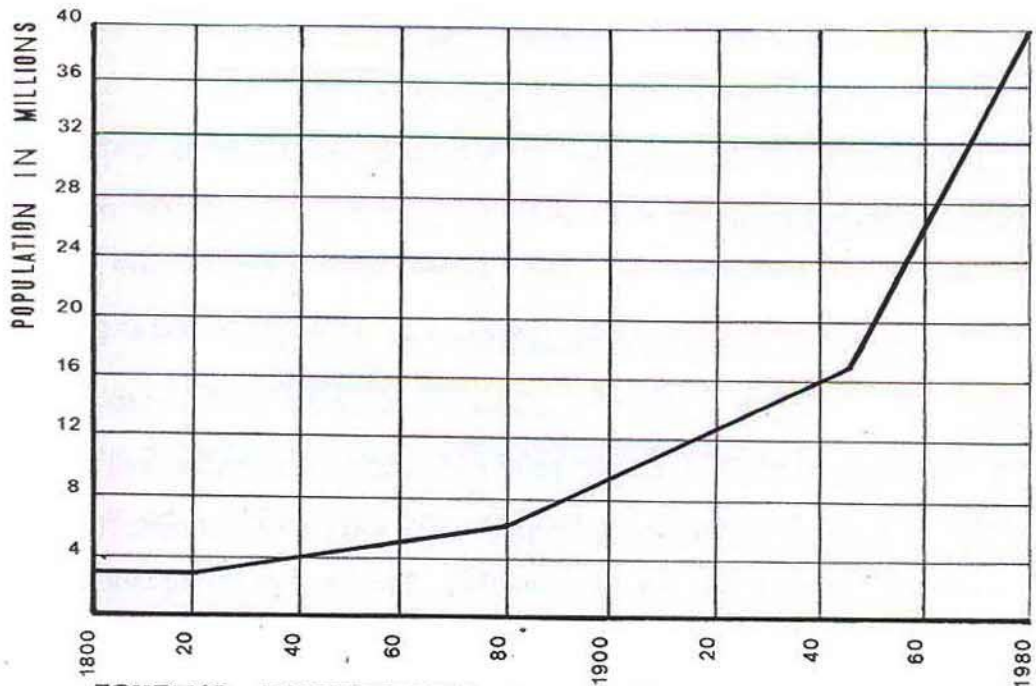
Table '2-1'. Egypt's Population Growth, 1800 - 1976 [1/]

Year	Population	Source
1800	2,460,200	Estimations during the frensh occupation
1821	2,536,400	Estimations
1846	4,476,440	Estimations from housing accounts
1873	5,250,000	
1882	6,712,000	
1897	9,669,000	
1907	11,190,000	
1917	12,718,000	Estimations from official census
1927	14,178,000	
1937	15,921,000	
1947	18,976,000	
1957	24,026,000	
1960	26,085,000	
1966	30,076,000	
1976	36,626,204	

The rapid population growth which commenced during the last four decade after an earlier period of relative stability is totally due to the natural crease. The birth rate has been generally stable, except few fluctuations, with a gently declining trend. However, rapid improvement in public health measures, particularly in infant care, has sharply reduced in the death rat Both of these trends are expected to continue their declination with furthe economic, social and educational improvements[2/]. Fig. '2-2', indicates thes

1/ د. أحمد أمين مختار ـ العوامل المؤثرة فى نمو السكان فى جمهورية مصر العربية ص (٢٢) ـ مكتبة الكيلانى ـ القاهرة ـ ١٩٧٥ .

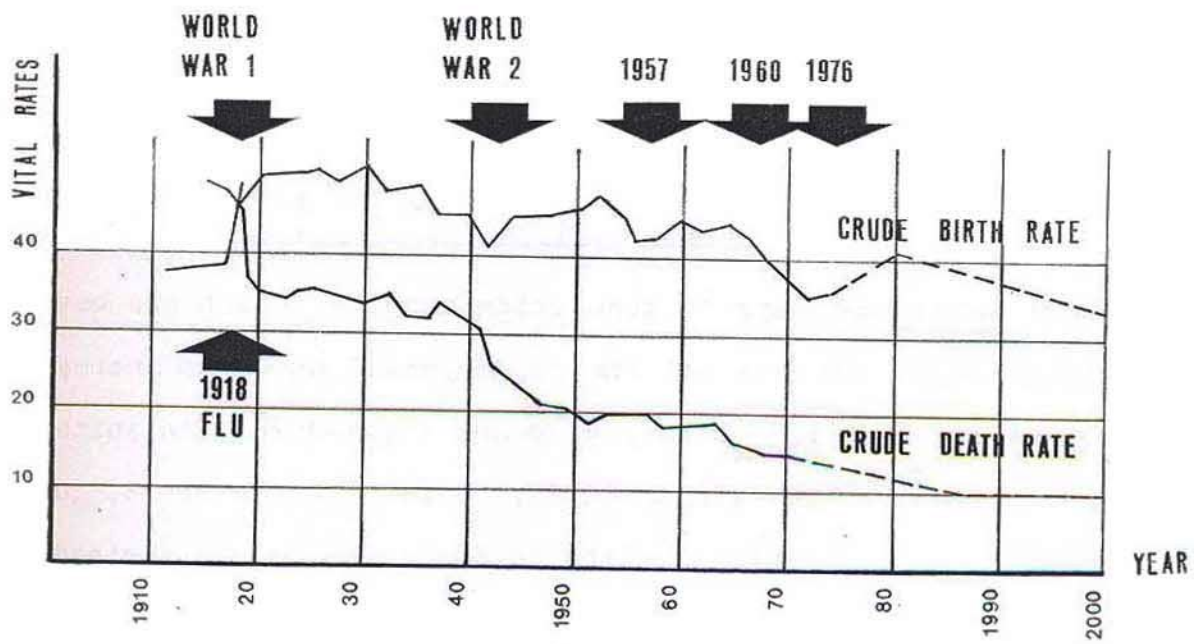
2/ Sabbour Associates et. al., The planning of Sadat City - Status Report 1, Cairo, September 1976.



EGYPT'S POPULATION GROWTH, 1800 — 1980

Source: داحمد أمين مختار – العوامل المؤثرة فى نمو السكان
فى ج.م.ع. ص ١٨–مطبعة الكيلانى – القاهرة – ١٩٧٥

Fig. No.: 2 - 1



CRUDE BIRTH & DEATH RATES, EGYPT , 1900 — 2000

Source: United Nations Development Program, Suez Canal Regional Plan, Human Development, Vol.2, pp. 24, Cairo, 1976

Fig. No.: 2 - 2

fluctuations in both birth and death rates, the rapid declination of the deat rate after the 2nd world war and the future expectations up to the year 2000.

This population growth hasn't been accompanied by similar increase of the cultivated land. The population has grown 14 times since the beginning of the 19th century, while by contrast the amount of clutivated land hasn't quit doubled. It has been increased just from something like 3.5 million feddans to 5.3 million feddans in 1937, (Table '2-3'). This inelastic supply of cultivated land and lands suitable for settlement have entailed a serious decrease in the land-man ratio in the Nile Valley and the Delta, to make Egypt one of the most densely countries in the world. Table '2-2' illustrates how the population density has continuously increased between 1927 up to 1976.

Table '2-2'[1/], Egypt's Population Density, 1927 - 1976.

Year	1927	1937	1947	1960	1966	1976
Population Density ' Person/Km^2'	410	466	456	733	845	690

Table '2-2' shows that Egypt's population density, which has been estimated using total ihhabited area not the geographical one, has increased one and half times within a period of only 40 years '1937-1976', in spite of increasing the inhabited area in 1976 to be 55,039 km^2 instead of 35,580 km^2 in 1937 which reduced the population density to 690 'person/km^2' instead of 845 'person/km^2' in 1976 and 1966 respectively.

1/ الجهاز المركزى للتعبئة العامة والاحصاء - التقديرات العامة لسكان جمهورية مصر العربية - القاهرة - أول يونيو ١٩٧٦ .

This High population density is a natural result of the over-concentration of population in the Nile Valley and the Delta, where only 4% of the total area of Egypt is inhabited by about 96% of its population. This makes Egypt, which is still primarily an agricultural country, is more densely populated than other industrial countries such as England and Belgium.

Table '2-3' follows up the population growth and the corresponding increase of both cultivated and cropped[1/] areas between 1821 - 1975. It also shows how per capita cultivated and cropped areas have been severly reduced due to the imbalaced growth of both population and cultivable land, fig '2-3'.

1/ Cropped area, measures the surface that is cultivated more than once a year.

Table '2-3' [1/], Growth of Population, Cultivated and Cropped Land, Egypt, 1821 - 1975.

Year	Population	Cultivated Are '1000 Feddans'	Per Capita Cultivated Area	Crooped Area '1000 Feddams'	Per Capita Crooped Area
1821	4,230,000	3,053	0.73	3,053	0.73
1846	5,290,000	3,764	.71	-	-
1882	7,930,000	4,758	0.60	5,754	0.72
1897	9,717,000	4,943	0.53	6,725	0.71
1907	11,190,000	5,374	0.48	7,595	0.67
1917	12,718,000	5,309	0.41	7,729	0.60
1927	14,178,000	5,544	0.39	8,522	0.61
1937	15,921,000	5,312	0.33	8,302	0.53
1947	18,967,000	5,761	0.31	9,133	0.43
1960	26,085,000	5,900	0.23	10,200	0.39
1966	30,075,000	6,000	0.20	10,400	0.34
1970	33,200,000	5,900	0.18	10,900	0.33
1975	37,000,000	5,700	0.15	10,700	0.19

2.2 EGYPT'S URBANIZATION TRENDS

2.2.1 Historical Stages of Urban Growth in Egypt

'The world passed three main stages in general, during which urban

1/ Waterbury, J., Egypt - Balance of People, Land and Water, pp.87, The American Universities Field Staff Reports, American University Publications, Cairo, 1975.

shapes and characteristics had major changes. These three urban stages could be summarized as follows ..

i) First Urbanization Stage, '4500 B.C. - 500 A.D.' .. this is the classical urbanization period, during which urban centres had been constructed to serve agro-commercial activities, but mainly for defence purposes.

ii) Second Urbanization Stage, '1000 - 1800 A.D.' .. This is the period known as Medieval or Dark Ages, during which towns had commercial or religious function.

iii) Third Urbanization Stage, '1800 - up to now' .. This stage is characterized by the wide expansion of urban centres due to the spread of industrialization, besides the great complication between different ecological factors, such as people, society, technological level, ... etc.' - (Boskoff, Alvin, Ibid, pp. 15-27) 1/.

Due to the importance of this last stage, during which the world in general has experienced a rapid urban growth, the study of the Egyptian case will concern with the period since the end of the 19th century up till now. Egypt has experienced three urbanization stages during this period, that could be classified as follows :

i) Slow Urban Growth Stage, '1882 - 1907' .. During which the number of urban centres was almost constant in addition to the low rural-urban migration movements.

١/ د. محمود الكردى ـ النمو الحضرى (دراسة لظاهرة الاستقطاب الحضرى فى مصر) دار المعارف ـ القاهرة ، ١٩٧٧ .

ii) Moderate Urban Growth Stage, '1908 - 1937' .. Rural-urban migration increased during this stage and some new towns were created for agro-commercial and transportation functions.

iii) Rapid Urban Growth Stage, '1938 - up till now' .. Several industrial centres were developed during this stage which attract many rural migrants, 1/

Table ' 2-4', illustrates annual growth rates for both urban and total population during each stage.

Table '2-4' 2/, Annual Urban and Total Population Growth Rates, Egypt. '1882 - 1976' :

Aspect	Slow Urban Growth Stage			Moderate Urban Growth Stage			Rapid Urban Growth Stage		
	1882	1897	1907	1917	1927	1937	1947	1960	1976
Total Population 'in million	6.7	9.7	11.2	12.7	14.2	16.0	19.0	26.1	36.6
Anuual Growth Rate (%)		2.98	1.54	1.34	1.18	1.26	1.87	2.87	2.51
Urban Population 'in millions'	1.3	1.9	2.1	2.7	3.8	4.5	6.4	10.0	16.(
Annual Growth Rate (%)		3.5	1.05	2.8	4.07	1.84	4.22	4.32	3.75

د. محمود الكردى ـ النمو الحضرى (دراسة لظاهرة الاستقطاب الحضرى فى مصر) ـ ص (١٥٠) ـ دار المعارف ـ القاهرة ـ ١٩٧٧ .

2/ The previous source, several modifications have been by the auther.

2.2.2. Urban Growth Projections and Future Expectations

Both the rapid population growth and the inheritance system have effectively diminished land holdings in rural areas. The imbalanced man /land ratio, table '3-3', lead to high rates of rural-urban migration. Overcrowded villages have pushed people towards urban areas due to the spread of unemployment among landless labourers and the decrease in per-capita income and economic opportunities.

Thus, the urban population component has witnessed more rapid increase than that of the total population. The percentage of urban to total population has nearly doubled since the turn of this century, it went up from 19% in 1907 to 44% in 1976. Table '2-5', follows-up the continuous increase in the percentage of urban population between 1870 - 1976, specially during the past four decades during which the average annual urban growth rate was about 4.0%.

This rapid urban growth has lead to an increase in the population densities of cities which extended both vertically and horizontally. About 10% of Egypt's best agricultural land has been lost during the past decade or so, to urban sprawl, military installation, buildings, roads ... etc.

Expensive reclamation of new lands of inferior fertility has probably failed to keep pace with the loss which is estimated to be about 60,000 feddans annually between 1963 - 1973 and are probably still absorbing at least this amount till now. Thus, in spite of over 900,000 feddans have been reclaimed since 1952, cultivated area has increased only very slightly.

Table '2-5' [1/], Egypt's Urban, Rural and Total Population, 1870 - 1976, and Their Expectations Up to Year 2000.

Years	Urban Population 'millions'	%	Rural Population 'millions'	%	Total Population 'millions'
1870	1.0	19.0	4.2	81.0	5.2
1882	1.3	19.0	5.5	81.0	6.8
1907	2.1	19.0	9.2	81.0	11.3
1917	2.7	21.0	10.0	79.0	12.7
1927	3.8	27.0	10.4	73.0	14.2
1937	4.5	28.0	11.4	72.0	15.9
1947	6,4	34.0	12.6	66.0	19.0
1960	10.0	38.0	16.1	62.0	26.1
1966	12.1	40.0	18.0	60.0	30.1
1976	16.0	44.0	20.6	56.0	36.5
Future Expectation Up to Year 2000					
Low	35.0	58.0	25.0	42.0	60.0
High	45.0	60.0	30.0	40.0	75.0

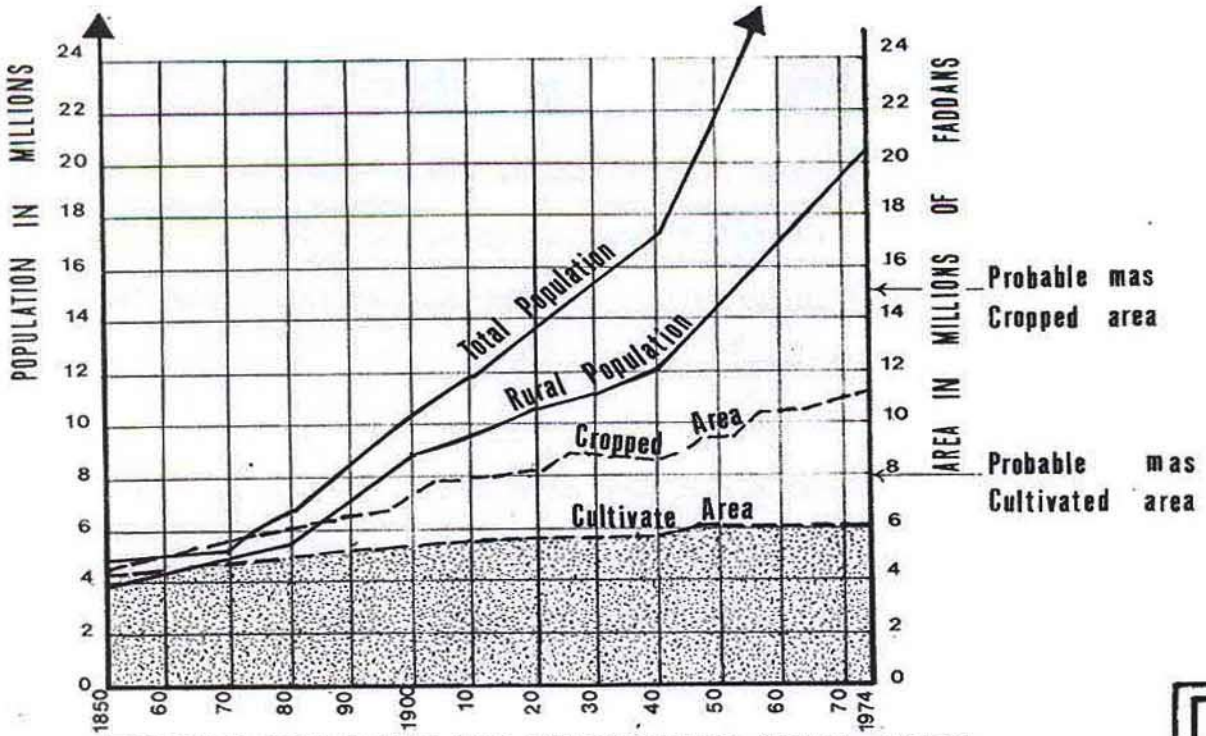
1/ Sabbour Associates et. al., The Planning of Sadat City - Status Report', pp.'1-5', Cairo, September 1976.

The trend towards, higher degrees of urbanization is likely to continue at faster pace in the future with efforts to diversify and industrialize the national economy. The proportion of urban population is expected to accomodate some 68 - 60 % of total population by year 2000. Given different assumptions about population growth, this implies an urban population of 35 - 45 millions by that time,[1/] table '2-5'.

In the same time, rural areas may have difficulty in absorbing more people due to the constraints, mentioned previously, in the agricultural sector. The majority of forecasted population is expected to be absorbed in town and cities, adding complications and proplems to what they already have.

Fig. '2-4', shows both urban, rural and total population growth during the past four decades and their future expectations up to year 2000, considering low and high figures estimated by CAPMAS and the Sadat City Planning Study group.

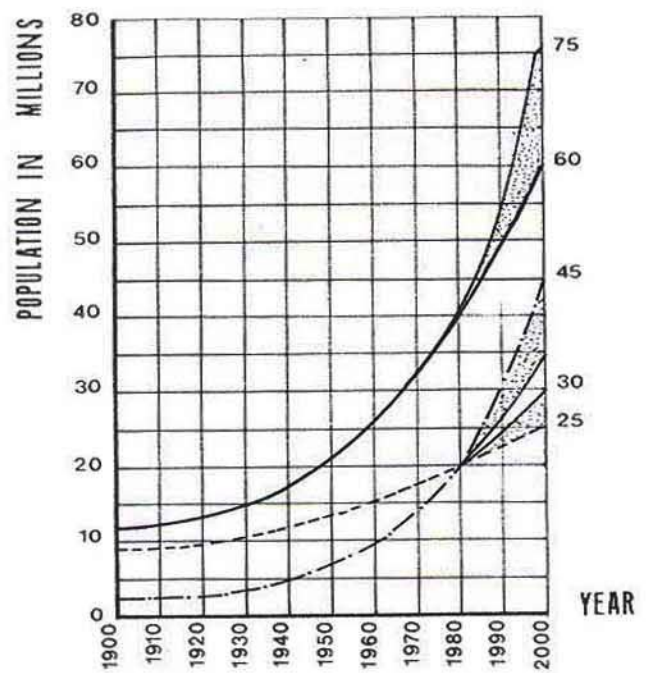
1/ Sabbour Associates et. al., The Planning of Sadat City_Statuse Report 1, Cairo, September 1976.



POPULATION/LAND RELATIONSHIPS, 1850 - 1974

Fig. No.: 2-3

Source: United Nations Development Program, Suez Canal Regional Plan-Human Development, Vol.2, pp. 34, Cairo, 1976



PROJECTED POPULATION RANGES TO THE YERA 2000

Fig. No.: 2-4

Source: Sabbour Associates et. al., The Planning of Sadat City, Status Report I, pp. 16, Cairo, September 1976.

2.2.3 Geographical Urbanization Distribution

Egypt's governorates could be classified into five groups according to urbanization degree. If considering the percentage of urban population of each governorate to its total populations as an indicator of its urbanization degree, these governorates could be classified as follows ..

i) Urban Governorates .. These are totaly urban areas due to their unique location on sea shoars or being an industrial, commercial and service center. there are four urban governorates, namely, Cairo, Alexandria, Port Said and Suez.

ii) Governorates of High Urbanization Degree.. These are governorates which over 40% of their total population are classified as urban, namely: Qalyobia, Ismailia and Giza.

iii) Governorates of Medium Urbanization Degree .. these are governorates which 25 - 40% of their total population are classified as urban, namely : Gharbia, Aswan and Assuit.

iv) Governorates of Low Urbanization Degree .. These are governorates which less than 25% of their total population are classified as urban, such as Munofia, Fayom and Beni Suef.

v) Borders Governorates .. These couldn't be classified as real urban settlements in spite of having high percentages of urban population 'according to official statistics'.

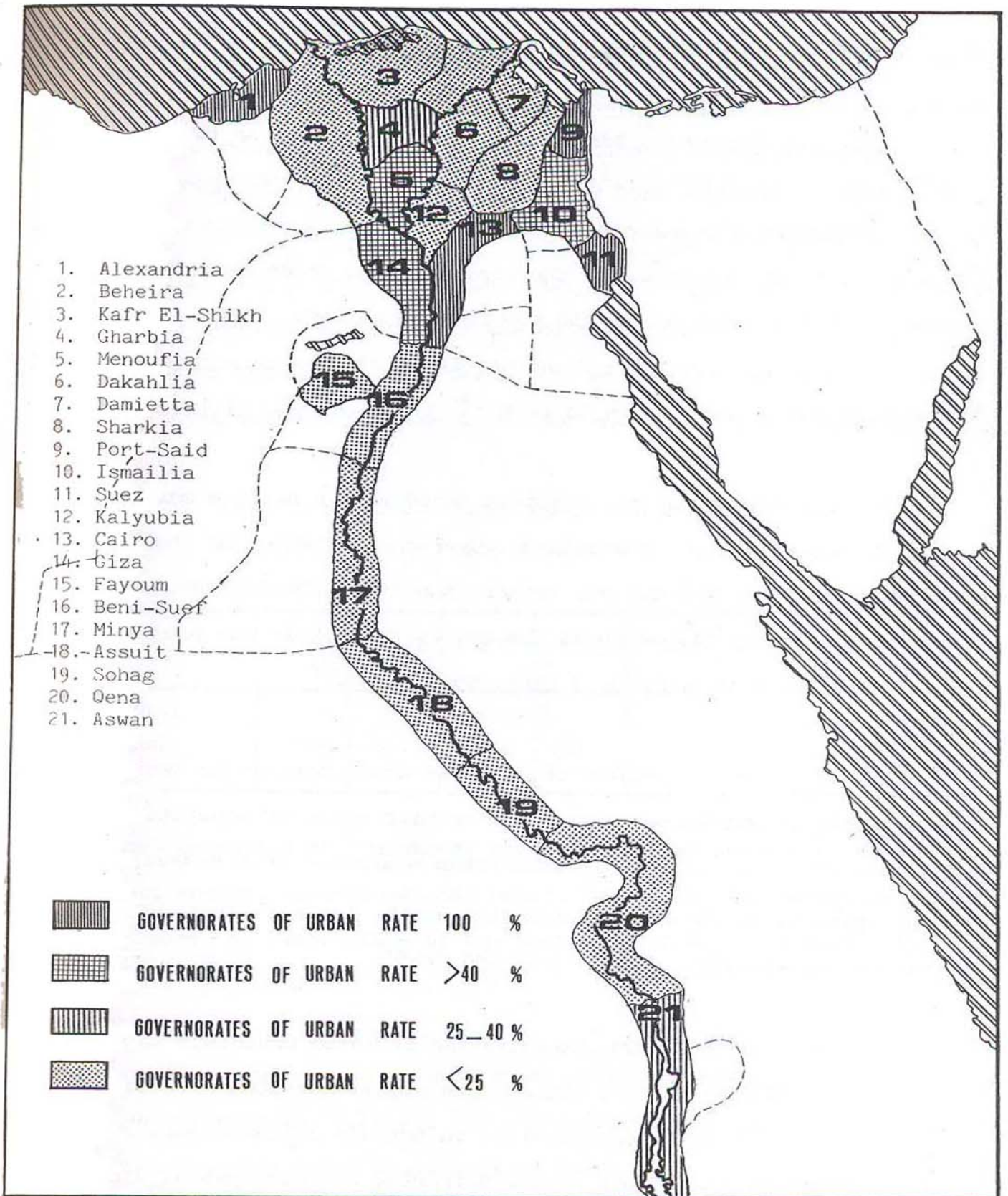
Table '2-6', ileucidates the geographical distribution of Egypt's urbanization. Also fig. '2-5', depicts this classification which shows the concentration of Egypt's urban population in few governorates while the majority are of low urbanization degree.

Table '2-6'[1/], Geographical Distribution of Egypt's Urbanization ..

Geographical Distribution According to Percentage of Urban Population									
Group 1		Group 2		Group 3		Group 4		Group 5	
Governorate	%	Governorate	%	Governorate	%	Governorate	%	Governmorate	%
Cairo	100.0	Giza	57.0	Aswan	38.0	Beni-Suef	25.0	Red Sea	
Alexandria	100.0	Ismailia	49.0	Gharbia	33.0	Damietta	25.0	New-Vally	
Port-Said	100.0	Qalyobia	41.0	Assuit	28.0	Behiera	24.0	Matrouh	
Suez	100.0					Fayom	24.0	Sinai	
						Daqahlia	24.0		
						Qucna	23.0		
						Sohag	21.0		
						Mynia	21.0		
						Kafr El-Shikh	21.0		
						Sharqia	20.0		
						Munofia	20.0		

1/ د. محمود الكردى ـ النمو الحضرى (دراسة لظاهرة الاستقطاب الحضرى فى مصر) ص (١٥٦) ـ دار المعارف ـ القاهرة ـ ١٩٧٧ .

. (Several modifications have been carried out by the auther in table '3-5', to be up-dated one, and facilitate the study objectives).



GEOGRAPHICAL DISTRIBUTION OF EGYPT'S URBANIZATION

Fig. No.: 2_5

2.3 EGYPT'S URBANIZATION PROBLEM

'Egypt has frequently been cited as an example of an over-urbanized country. Support for this contention has come from both international and internal comparisons. For example, in 1950 when only 13 percent of the worlds population and only 9 percent of the population in under-industrialization regions lived in cities having 100,000 or more persons, almost one-fifth of Egypt's population was to be found in cities of this magnitude. By 1960, the proportion was closer to one in four.'[1/] (Abu-Lughod, J. 1965, pp. 313).

'In term of the future, Egypt is faced with a problem more critical than that of temporary over-urbanization. Over-concentration of the urban population in relatively few cities, rather than over-urbanization, appears more serious and likely to emerge as the key bottleneck in any program of industrialization.' (Abu-Lughod, J.1965, pp. 315).[1/]

The urbanization problem of Egypt is characterized by two main features. First, is over-urbanization due to high rates of population growth, in addition the great effect of rural-urban migration that pushes the urban growth rate to be about 4.0 % annually during the past four decades, as mentioned previously, tables '2-4' and '2-5'.

Second, is the over-concentration of these urbanists in just two cities 'Cairo and Alexandria', rather than being distributed through different urban areas. This over-concentration in primate cities creats such an imbalanced urban structure both of its heirarchy and its spatial distribution.

1/ Urbanization In Egypt - Present State and Future Prospects, Social Research Centre, The American University In Cairo, Reprint Series No.5, Cairo, 1965.

Fig. '2-6', shows the rank size distribution of the urban settlements of Egypt in 1976 which illustrates the un-balanced spatial distribution of these settlements. It shows also the over concentration of urban population in few cities instead of being evenly distributed all over the urban settlements.

The loss of arable land during the past few decades, is only one of the results of the over-concentration in the Delta rather than Upper Egypt. Table '2-7', follows-up this over concentration of both Cairo and Alexandria in relation to total urban population since the end of the 19th century.

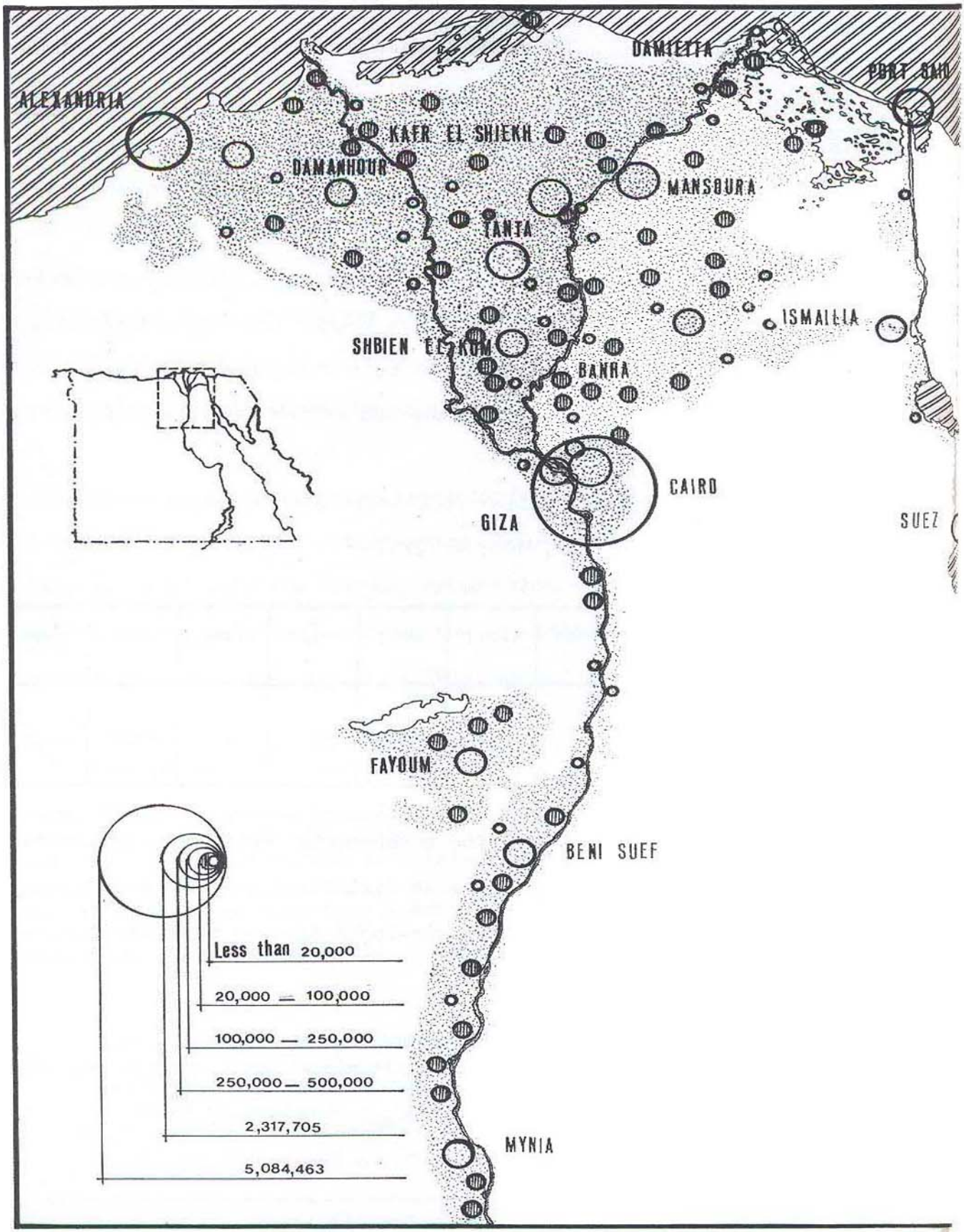
Table '2-7' [1/], Egypt's Primate Cities Population as Percentage of Total Urban Population, 1897 - 1976.

Year	1897	1907	1917	1927	1937	1947	1960	1976
% of Urban Population	64.9	64.7	56.3	56.1	55.0	54.9	52.0	45.9

The concentration of industrial and governmental activities in addition to different social, educational and health facilities in the two primates, specially Cairo, is responsible of the over-concentration of urban population in these two primates.

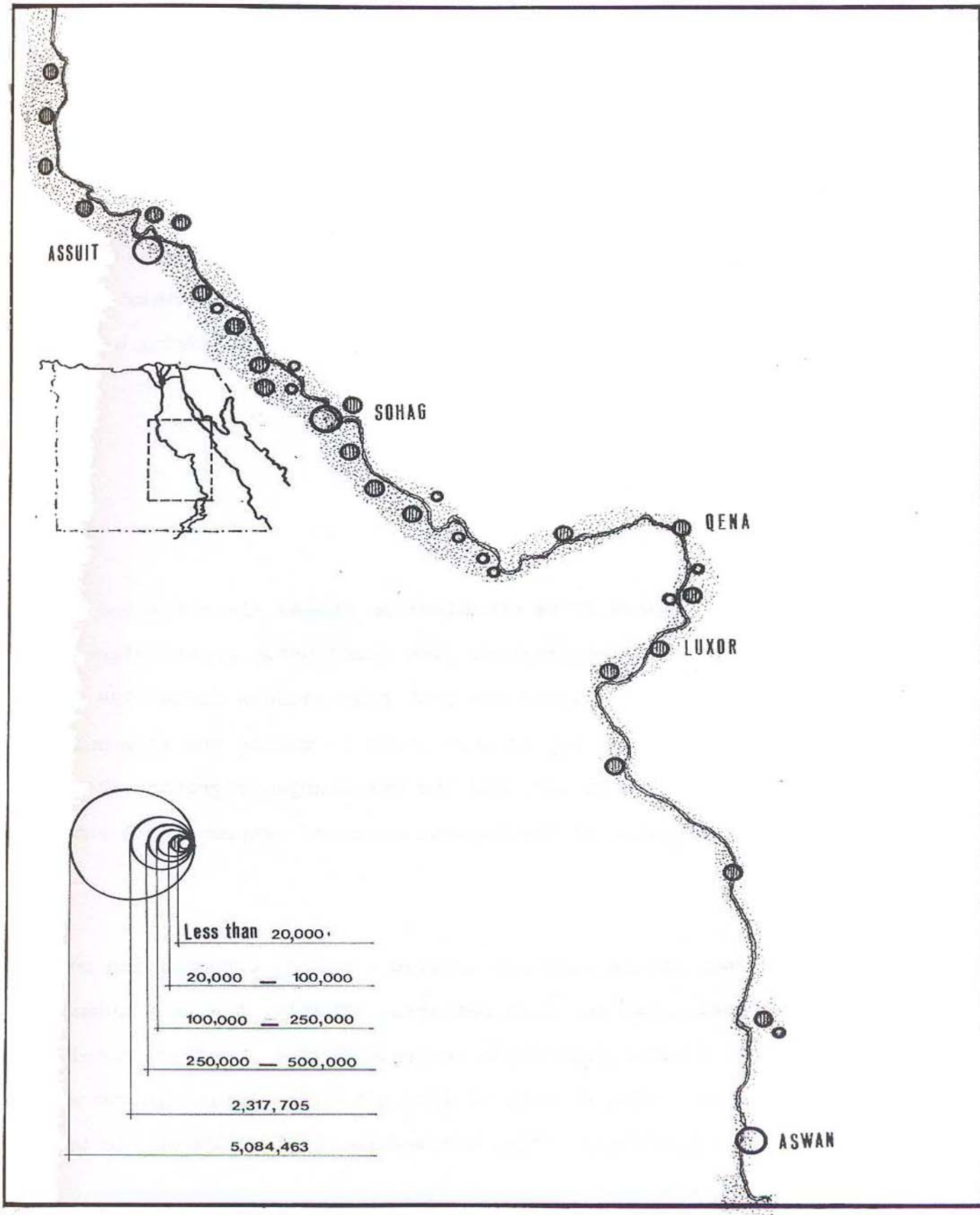
The continuation of the present urban situation leads to more primacy in Cairo and Alexandria 'with all its serious problems that there is no need to mention them,' just think about greater Cairo daily problems '.

1/ Abu-Lughod, J. Urbanization In Egypt - Present State and Future Prospects, Social Research Centre, The American University in Cairo, Repeint Series No. 5, Cairo, 1965.
. Population Censuses for years noted.



RANK SIZE DISTRIBUTION OF EGYPT'S URBAN SETTLEMENTS , 1976 .

Fig. N
2.6



RANK SIZE DISTRIBUTION OF EGYPT'S URBAN SETTLEMENTS, 1976.

Fig. No.: 2-6

On the other hand,other urban settlements all-over Egypt suffer from neglection and lack of essential service facilities or development programs except the capitals of governorates which has been started to pay attention to them recently, and thus continue push immigrants to the primates.

A more balanced urban structure for Egypt is urgently needed where the urban population is evenly distributed all over the country, this must be achieved through the creation of new urban settlements or making use of the existing ones.

2.4 SYNOPSIS

Egypt, has experienced three urbanization stages since the end of the 19th century and till the present time. The rapid urban growth stage, which is the most important, has spanned the last four decades since 1938 up till now. The rapid urban growth during this stage is mainly due to population explosion after the 2nd world war, and the rural-urban migration flow due to the imbalanced distribution of development programs between rural and urban centres.

The rapid urban growth rate has created a severe urbanization problem in Egypt. This problem has two main features. Firstly, the continuous rise in the proportion of urban population compared to the country's total and secondly, the concentration of half of this urban population in two primate cities, Cairo and Alexandria, which accomodate about 46.0% of the total urban population of Egypt.

As, the over-urbanization is directly related to the rapid population growth which is not expected to be slow down, there would be an urgent need for restoring balance to the urban structure of Egypt. Urban population have to be redistributed evenly over the country to be able to absorb the expected increase of urban population, This could not be sustained, without making full use of all existing urban centres, in addition to create new urban settlements to slow down the prinacy degrees of Cairo and Alexandria.

III

MIDDLE SIZE TOWNS IN EGYPT

'Within highly industrialized regions of the world, systems of cities have developed according to a hierachy of specialization. The geographic distribution of these cities and their mutual connections throughout the hinterlands have created, in the west, a complex network of urbanism that has tended to transform even the residual interstitial rural areas in the image of the city. On the other hand, countries of immature industrial growth often lack this full complement of urban stablishments. Instead one generally finds a single primate which has a virtual monopoly over urban-type goods and services, in which a disproportionately large share of the urban population is concentrated. Whether these countries are also over-urbanized, there is no doubt that they are over-centralized.'[1/] - (Abou-Lughod, J. pp. '315-316', 1965).

Egypt's urbanization problem, as mentioned in the previous chapter, is not only over-urbanization or rapid urban growth, but mainly its unbalanced urban structure and the over-concentration of urban population in two primates'Cairo and Alexandria, Table '2-7'.

This unbalanced urban structure has given no chance for any size class of urban settlements to play an active role in the urban life of Egypt, except the two primates and recently some of the capitas of governorates especially within Suez Canal region. Middle size towns as one of these size class categories, never have the chance to take part in solving the urbanization problems of Egypt.

This chapter deals with what is so called middle size towns, as one of the Egyptian urban structure components. First, it tries to define the term

---

1/ Urbanization In Egypt - Present State and Future Prospects, Social Research Center, The American University In Cairo, print series No.5, Cairo, 1965.

middle size town according to the urban circumestances of Egypt, then looks into the location of these middle size towns in both of the administrative system and the urban structure of Egypt. Finally, it follows-up the population growth of these towns considering their spatial distribution, through which an over-view on the problems of Middle size towns is carried out.

3.1 MIDDLE SIZE TOWNS _ DEFINITION

'The distinction of urban population at the limits of 20,000 and 100,000 suggests the use a multiplier of (five) to arrive at additional limits for a more detailed size classification. Accordingly, the following combinations of urban population have been estimated for countries, regions, major areas and the world :

20,000	and over	urban population
100,000	and over	city population
500,000	and over	big-city population
2,500,000	and over	multi-million cities population
12,500,000	and over	metropolitan regions population[1/]

(U.N. Bureau of Social Affairs, pp. 23, 1972).

In countries like Egypt suffering from over concentration of urban population in relatively few number of cities, in addition to its unbalanced urban structure, the previous classification is not satisfied. It considers that all localities with population size ranging between 20,000 - 100,000

1/ World Urbanization Treneds, 1920-1960 (an interim report on progress), Breese, G., (editor), The City In Newly Developing Countries, Open University Setbook, Prentice Hall International, INC., London, 1972.

are of the same category, while out of the total of the 157 settlements that classified as 'urban' in 1976 in Egypt, about 80% have a population size between 20,000 - 100,000 which could not be considered of the same category.

Only 20 cities are of a population size over 100,000 inhavitants, 52 localities are less than 20,000 'those could not be considered as urban according to the previous definition; while 85 settlements have a population size ranging between 20,000-100,000.[1/] There is a need for a more detailed classification to deal with such a wide group of urban settlements.

An attempt had been made to classify Egypt's urban settlements using three main groups for these settlements, namely: primate cities, large cities and small cities. The small cities group was also classified into three categories, starting with small cities then larg towns and finally small towns.This classification could be summarized according to each size class as table '3-1' ileucidates.[2/]

Table '3-1', Egypt's Urban Settlements Classification ..

Size Class	Primates	Large Cities	Small Cities		
			Small Cities	Large Towns	Small Towns
Population Size	300,000 and over	299,999-100,000	99,999-50,000	49,999-30,000	29,999-20,000

The previous classification states that, not only the population size of

---

1/ Central Agency for Public Mobilization and Statistics, General Census, Cairo, 1976.

2/ Abu-Lughod, J. Urbanization In Egypt - Present State and Future Prospects. Social Research Centre, The American University in Cairo, Reprint Series No. 5, Cairo, 1965.

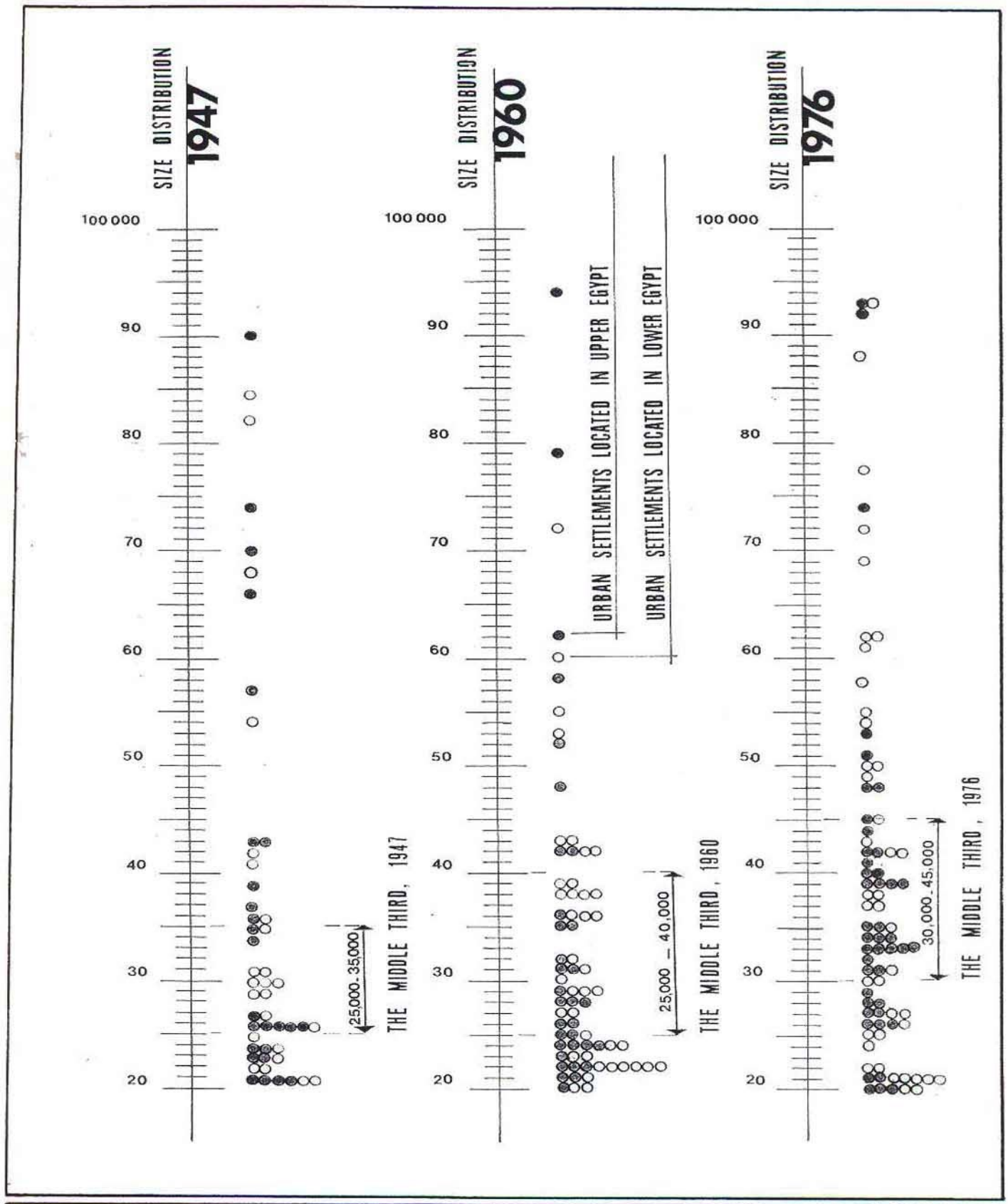
of 20,000 inhabitants is necessary for the definition of an urban settlement, but it must also have a population density not less than 1,500 person/km^2., and must have no more than one third of its labour-force engaged in agriculture.

The classification of The Egyptian settlements as rural or urban still mainly depends on the population size, and not on the transformation from agricultural (rural) activities to industrial or service (urban) activities. On the otherhand, the previous classification had considered the urban growth only till the year 1960, ater which several major changes took place in the urban life of Egypt.

Egypt's urban structure needs a new classification that could cope with all changes took place since 1960. Fig. '3-1', graphically presents the distribution of the Egyptian settlements having 20,000 - 100,000 inhabitants according to their population size in 1947, 1960 and 1976. It indicates the middle third of each period, (considering the range of size ecompassing the majority of these settlements) within which the middle size towns are locate

Middle size towns could be identified as follows :

The urban settlement roughly located within the middle third of settlement having a population size of (20,000 - 100,000) inhabitants. This middl third includes all towns with a population size ranging between 30,000 - 45,0 inhabitants (considering 1976 statistics).



GRAPHICAL SCHEME FOR THE SIZE DISTRIBUTION OF URBAN SETTLEMENTS (20,000-100,000), 1947-1976

Fig. No. :
3 - 1

The following items have been considered in the previous classification:

i) All urban localities of less than 100,000 inhabitants are considered as towns (the transitional stage from rural to urban life), as the majority of the Egyptian urban localities are still characterized by several strong rural features, 'except those of upper ranks'.

ii) Urban settlements classified as towns could be subdivided into other three categories, namely, small towns, middle size towns and large towns 'which is the intermediate stage of an urban settlement to transfer from a town still carrying rural features to be a city characterized by all urban features'. This urban settlements group (20,000 - 100,000) has experienced a continuous increase during the past four drcades (49 towns in 1947 , 72 towns in 1960 and 85 towns in 1976) as shown in fig. '3-1'.

iii) Both of population size and number of urban settlements between '20,000 - 100,000' inhabitants, must be considered when classifying this group into small, middle and large towns groups.

iv) Middle size, is one of the growth stages of any town. There are no fixed limits to determinate its range of population size, but it differs periodically according to several factors. First, is the number of urban localities ranging between 20,000 to 100,000 population during each period. Second, is the population size of each urban locality within this group, and third is the range of size encopassing the majority of these towns.

Table '3-2, classifies the lower ranks of Egypt's urban settlements, these having a population size ranging between '20,000 - 100-000' inhabitants, according to the previous assumptions.

Table '3-2', A Proposed Classification of Egypt's Urban Settlements, Having (20-000 - 100-000) Inhabitants

Size Class	Population Size	No of settlements in 1976
Grade 1 Large Towns	45,000 - 199,999	23
Grade 2 Middle Size Towns	30,000 - 44,999	34
Grade 3 Small Towns	20,000 - 29,999	28

3.2 THE LOCATION OF MIDDLE SIZE TOWNS IN THE URBAN STRUCTURE OF EGYPT

3.2.1 The Hierarchy of the Local Governments and Administration System in Egypt.

The administrative system in Egypt, comprises eight different levels. The nation is divided into eight, regions that consist of twenty six governorates, each is divided into number of counties 'Markaz', the latter are considered to be administrative centres for number of villages. These villages are of two ranks, the first where the village councils are located, while the second are administrated through the first village councils. Fig. (3-2) summarizes this administrative hierachical system of Egypt.

ADMINISTRATIVE SYSTEM OF EGYPT.

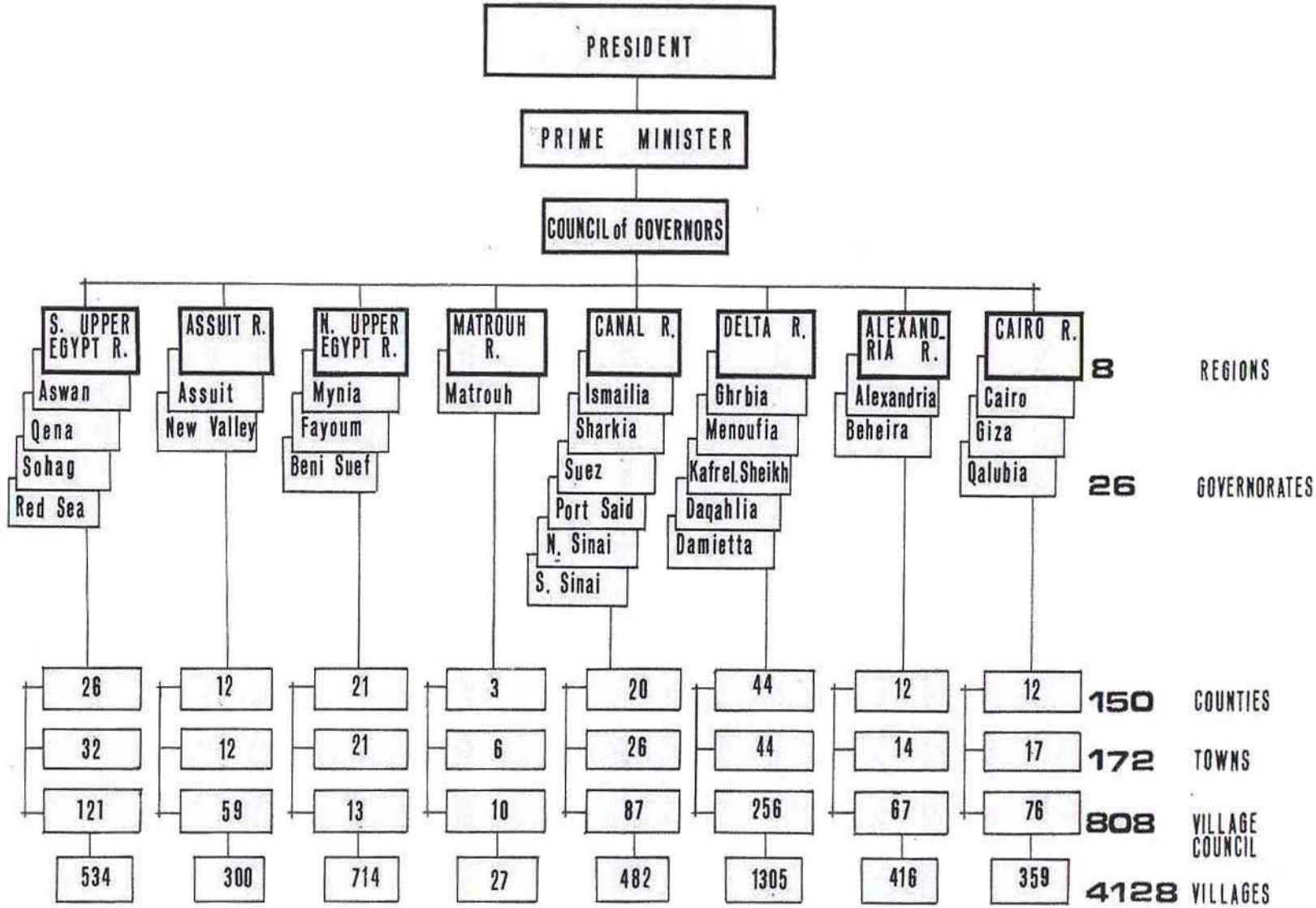


Fig. No.: 3-2

3.2.2 The Urban Structure of Egypt

Fig. '3-2', indicates that the urban structure incorporates within the administrative hierachical system of Egypt. through its urban componants which are capitals of either governorates or counties : Table '3-3', summarizes the urban structure of Egypt in 1976. according to the previous proposed classification for urban settlements, (Table'3-2').

Table 3-3[1/], Egypt's Urban Structure, 1976

Size Class	Population	No. of Urban Settlements	% of the Total Urban Settlements	% of the Total Urban Population	Remarks
Metropolitan regions	12,500,000 and over	-	-	-	Greater Cairo region
Multi-Million Cities	2,500,000-12,499,999	2	1.9%	48.0%	Cairo & Alex.
Big Cities	500,000- 2,499,999	1	0.9%	8.0%	Giza[2/]
Cities	100,000- 499,000	17	16.2%	21.9%	Capitals of Governorates
Large Towns	45,000- 99,999	21	20.0%	8.9%	Counties centres
Middle Size Towns[3/]	30,000- 44,999	36	34.3%	8.8	
Small Towns	20,000- 29,999	28	26.7%	4.4%	Urban localities
Total		105	100.0%	100.0%	

1/ Central Agency for Public Mobilization and Statistics, General Census, Cairo, 1976.
2/ Some new cities 'Sadat city, 10th of Ramadan city and New Ameriyah city' could be classified within this size class when completed.
3/ Kafr El-Zayat '45,207' and Tahta '45,242' are considered as middle size towns.

The over-concentration of urban population in relatively few urban settlements, negatively affects the balance of the urban structure in Egypt. Table '3-3', illustrates that, more than half of urban population, those living in urban settlements having not less than 20,000 inhabitants, are concentrated in only three cities. In other words, 56.0% of the urban population of Egypt are concentrated in 2.8% of its urban settlements, with 81.0% of the urban settlements accommodating a limited portion totaling 22.1% of the urban population (those living in towns). Generally speaking, the system is still moving towards higher degrees of primacy in both Cairo and Alexandria, which has been helped by the highly centralized governmental system over the centuries.

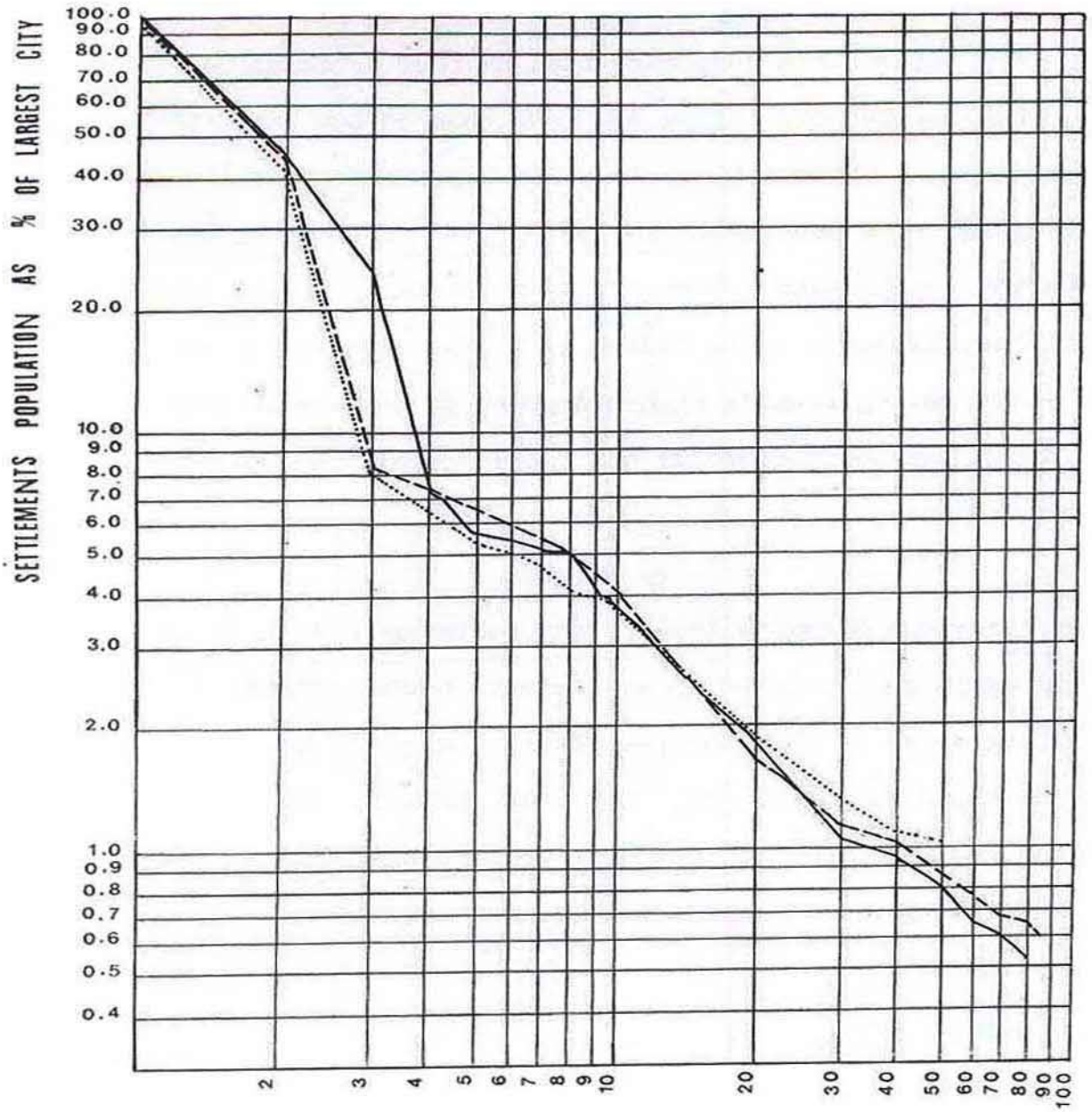
The previous attempts towards the achievement of a balanced urban structure in Egypt concentrated on settlements having 250,000 - 1,000,000 population,[1/] in order to fill the gap within the group of urban settlements ranking from third to tenth, fig. '3-3'. No attention has been given to smaller urban centres (20,000 - 100,000) for being usually located within arable lands and having relatively low absorbtion capacity due to the infrastructure thresholds.

This approach has to be altered, in the light of the preliminary results of implementation of the different new cities, 'that will be the subject of the next chapter'.

3.2.3 Middle Size Towns in the Urban Structure of Egypt ..

During the past four decades, there has been substantial increase in Egypt's urban population far excess the rate of the natural increase. This

1/ All new cities have been planned to accommodate this population size, 10th of Ramadan '500,000', Sadat city '1,000,000', New Ameriyah city '500,000' and El-Obour city '250,000' inhabitants.



SETTLEMENTS RANK SIZE DISTRIBUTION, 1947 – 1976

Fig. No.: 3-3

increase, however, has been confined to large cities. Although the persentage of urban population has increased from 22.9% in 1937 to 43.8% in 1976, the persentage of population accommodated to towns of a population size '20,000 - 100,000' remained almost constant of 9.5% during the same period[1/] table '3-4'.

Table '3-4', follows-up the share of each size class of urban settlements, over 20.000 inhabitants, in the urban structure of Egypt in relation to both of Egypt's total population and its total urban population accommodated in urban settlements having a population size not less than 20,000 inhabitants.

Table '3-5', demonestrates the growth of the tow primates 'Cairo and Alexandria' emphasising their effect on the general urban growth, especially the middle size towns growth.

The tow previous tables '3-4' and '3-5', summarize the historical growth of different size classes of the urban structure of Egypt. Some remarks could be inferred from those two tables as follows :

1/ Central Agency for Public Mobilization and Statistics, General consuses '1937 - 1976', Cairo.

Table 3-4 1/, Historical Urban Growth for Different Size Classes of the Urban Structure of Egypt, 1937-1976.

Size Class	No. of Urban Settlements 2/				% of Total Population				% of Urban Population 2/			
	1957	1947	1960	1976	1937	1947	1960	1976	1937	1947	1960	1976
Primates	-	-	1	2	-	-	12.9	20.1	-	-	35.9	48.0
Big Cities	2	2	1	1	12.5	16.0	5.8	3.4	55.0	54.9	16.1	8.0
Cities	1	5	12	17	1.0	3.0	8.0	9.2	3.0	11.7	22.3	21.9
Total Cities	3	7	13	18	13.5	19.0	13.8	12.6	58.0	66.6	38.4	29.9
Large Towns	n.a. 3/	17	16	21	n.a.	5.2	3.5	3.7	n.a.	17.6	9.5	8.9
Middle Size Towns 4/	n.a.	18	32	36	n.a.	2.8	4.3	3.7	n.a.	9.6	10.5	8.8
Small Towns	n.a.	15	24	28	n.a.	1.9	1.8	1.8	n.a.	6.2	5.7	4.4
Total Towns	43	50	72	85	9.4	9.9	9.6	9.2	42.0	33.4	25.7	22.1
Total	46	57	86	105	22.9	28.9	36.3	41.9	100.0	100.0	100.0	100.0

1/ Abu-Lughod, J. Urbanization In Egypt - Present State and future Prospects, Social Research Centre, The American University in Cairo, Reprint Series No. 5, Cairo, 1965. (Several modifications have been carried out by the auther for updating the figures).

2/ Over than 20.000 inhabitants.

Table '3-5', The Growth of Middle Size Towns in Relation to to Other Major Size Classes of Egypt's Urban Structure, 1937 - 1976.

Size Class	No. of Urban Settlements[1/]				% of Total Population				% of Urban Population[1/]			
	1957	1947	1960	1976	1937	1947	1960	1976	1937	1947	1960	1967
Primates	2	2	2	2	12.5	16.0	18.7	20.1	55.0	54.9	52.0	48.0
Total Cities	1	5	12	18	1.0	3.0	8.0	12.6	3.0	11.7	22.3	29.9
Total Tpwns	43	50	72	85	9.4	9.9	9.6	9.2	42.0	33.4	25.7	22.1
Middle Size Towns	n.a.[2/]	18	32	36	n.a.	2.8	4.3	3.7	n.a.	9.6	10.5	8.8
Total	46	57	86	1o5	22.9	28.9	36.3	41.9	100.0	100.0	100.0	100.0

1/ Over than 20,000 inhabitants.
2/ n.a., not available.

i) During the past four decades, urban population has almost doubled and increased from 22.9% to 41.9% of the total population in 1937 and 1976 respectively. The two primates have accommodated almost about 50% of this urban population, they have grown at the same rate the country has urbanized, to be over-concentrated with urban population. On the other hand, the rest 50% of this urban population have been distributed over all other urban settlements.

ii) Urban settlements of population size ranging between 100,000 to 500,000 (cities), have grown faster than those of the lower ranks (towns). Their urban population have increased from 1.0% in 1937 to 9.2% of the total population in 1976, and from 3.0% of the urban population in 1937 to 21.9% in 1976.

iii) The majority of the smaller communities (towns) have grown more slowly than the average rate of the natural increase, that they almost have experienced net population loss. their percentage of urban population has decreased from 42.0% to 22.1% in 1937 and 1976 (respectively). On the other hand, their population accommodation in relation to total population have remained almost the same (9.4% in 1 - 9.2% in 1976).

iv) Middle size towns did not play any active role in the urban development of Egypt during the past few decades. Their population have decreased from 10.5% to 8.8% of the total urban population between 1960 and 1976 (respectively), Their share of total population decreased from 4.3% in 1960 to 3.7% in 1976.

This might demonestrate how far the rapid urban growth of Egypt was not accommpanied by growth of different urban settlements. In fact it causes sever over-concentration of urban population in the two primates and relatively few cities, while the majority of smaller urban communities were stagnant or experiencing net loss of population.

3.3 THE GROWTH OF MIDDLE SIZE TOWNS, 1947 _ 1976

Accoring to the previously suggested classification of the Egyptian urban settlements, there are thirty six towns that could be classified as middle size towns in 1976. Table (3-6), follows-up the population growth and the average annual population growth rates of this group of towns since 1947 up till 1976.

Table '3-6' 1/, Population Growth and Average Annual Population Growth Rate of Middle Size Towns, 1947 - 1976.

Aspect / Middle Size Towns	Population '1,000'			Average Annual Growth Rate %		Remarkes
	1947	1960	1976	1947 1960	1960 1976	
Rosetta	22.5	30.0	43.0	2.23	2.27	
Hosh-Isa	20.0	25.3	42.3	1.82	2.62	Not urban in 1947
Fowa	17.6	27.0	37.8	3.39	2.12	
Biala	17.5	25.0	38.8	2.78	2.78	

1/ Central Agency for Public Mobilization and Statistics, General Censuses (for year noted), Cairo.

* Average annual population growth rates have been calculated by the auther.

Table '3-6', (contd.)

Aspect / Middle Size Towns	Population '1,000'			Average Annual Growth Rate %		Remarkes
	1947	1960	1976	1947 1960	1960 1976	
Talkha	12.5	16.9	37.3	2.34	5.07	Not urban in 1960
Sherbien	12.8	23.4	31.7	4.75	1.91	Not urban in 1947
Dekernes	12.5	13.0	38.4	0.3	7.0	
Manzala	27.5	29.6	44.0	0.6	2.5	
Semenoud	9.5	10.4	35.4	1.56	7.95	Not urban in 1947
Basyoun	15.0	19.5	30.5	2.03	2.83	Not urban in 1960
Kafr El-Zayat	22.5	30.3	45.2	2.31	2.53	
Tala	17.5	23.4	30.3	2.26	1.62	Not urban in 1947
Ashmoun	17.5	29.1	39.5	3.98	1.92	
Menia El-Kamh	12.5	15.0	33.6	1.41	5.17	Not urban in 1960
Faqus	22.5	36.0	39.0	3.68	0.5	Not urban in 1960
Khanka	17.0	22.0	32.4	2.0	2.44	Not urban in 1947
Senoures	22.5	31.8	42.0	2.69	1.75	
Bosh[1/]	16.0	19.2	40.2	1.41	4.14	Not urban in 1960
Biba	16.0	20.8	33.0	2.03	2.92	Not urban in 1947
Fashn	12.5	26.0	33.5	5.79	1.59	
Maghagha	17.5	28.7	40.8	3.87	2.22	
Beni-Mazar	22.5	30.6	39.4	2.39.	1.59	
Fikriya	17.5	15.0	33.5	-1.17	5.15	Not urban in 1960
Dayrout	17.5	14.4	31.6	2.59	1.62	Not urban in 1947
Quseia	19.0	23.1	31.4	1.51	1.93	Not urban in 1947
Manfalout	22.5	28.5	41.1	1.83	2.31	

1/ Bosh, has been named lately as 'Minshat Naser'.

Table '3-6', (contd.)

Aspect / Middle Size Towns	Population '1,000'			Average Annual Growth Rate %		Remarkes
	1947	1960	1976	1947 1960	1960 1976	
Abnoub	21.0	22.8	37.4	2.18	1.87	Not urban in 1947
Abu-Tig	17.5	24.2	36.0	2.52	2.51	
Tema	17.5	10.7	35.0	-3.71	7.68	
Tahta	35.0	27.8	45.2	-1.75	3.08	
Qus	17.5	24.6	33.1	2.65	1.87	
'Armant	18.0	22.5	42.2	1.73	4.00	Not urban in 1960
Esna	22.5	25.3	34.2	0.9	1.9	
Edfu	15.0	25.1	34.9	4.04	2.08	
Kom-Ombo	13.0	21.8	44.5	4.05	4.56	

Among thirty five[1/] urban settlements that could be classified as middle size towns in 1976, nearly 55.0% of these settlements were classified as urban in 1947, and 80.0% as urban in 1960. This means that many of these middle size towns were originally rural centres till the past three or four decades when they became urban settlements for administrative or governmental reasons. On the other hand, about 40.0% of these middle size towns have experienced a decrease in their average annual population growth rate during 1960/1976 than 1947/1960. Also, among nine middle size towns experienced high annual growth rates during 1960/1976 (over than the national rate), there are five towns were not classified as urban in 1960. These towns achieved such high growth

---

1/ Qanater El-Khairia has been excluded from this historical study in spite of being considered as middle size town due to its location too close to Cairo.

rates for being transformed from rural to urban centres during this period.

Generally speaking, the average annual growth rates of middle size towns are lower than that of 'urban' areas in Egypt during the past four decades. Table '3-7', classifies the middle size towns group according to their average annual population growth rates (in respect to that of urban Egypt '3.1%' during 1960/1976) into three main groups, namely: low, moderate and high average annual urban growth rates, fig. (3-5)[1/].

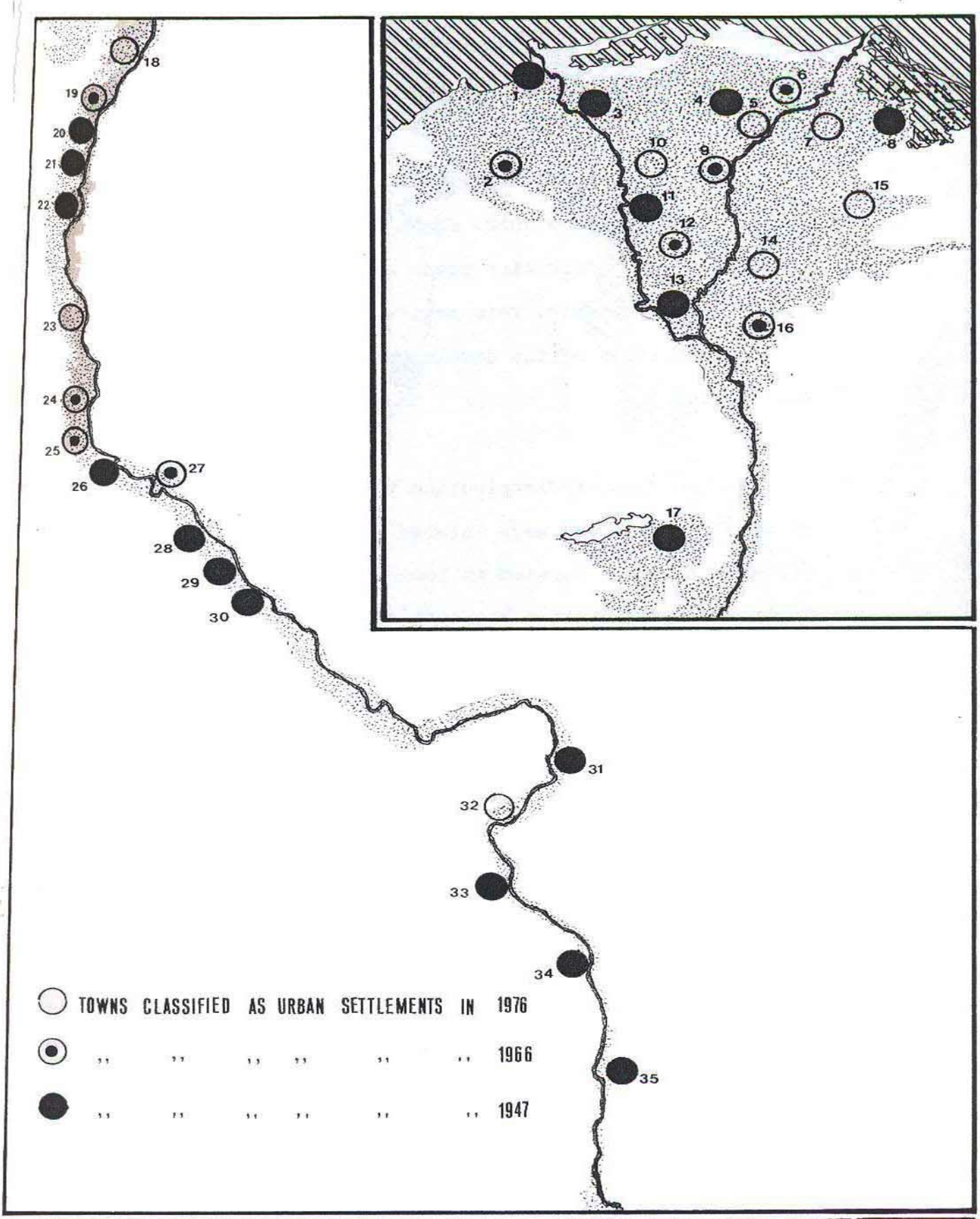
Table '3-7', Classification of Middle Size Towns According to the Average Annual Urban Growth Rate ..

Group	Average Annual Growth Rate	No. of Towns	Trmarks
Low Annual Urban Growth Rate	less than 2.5%	19	Tala - Beni Mazar - Esna
Moderate Annual Urban Growth Rate	2.5 - 3.5%	7	Basyoun - Biala Abu-tig
High Annual Urban Growth Rate	more than 3.5%	9	Talkha - Semenoud - Arman

3.4 THE SPATIAL DISTRIBUTION OF MIDDLE SIZE TOWNS

Figs. '3-4' and '3-5' illustrate the spatial distribution of middle size towns in 1976, according to the year of being classified as urban

1/ For more detailes about population growth and average annual growth rates of middle size towns group, please, refere to appendix 'B'



SPATIAL DISTRIBUTION OF MIDDLE SIZE TOWNS, 1976

Fig. No.: 3_4

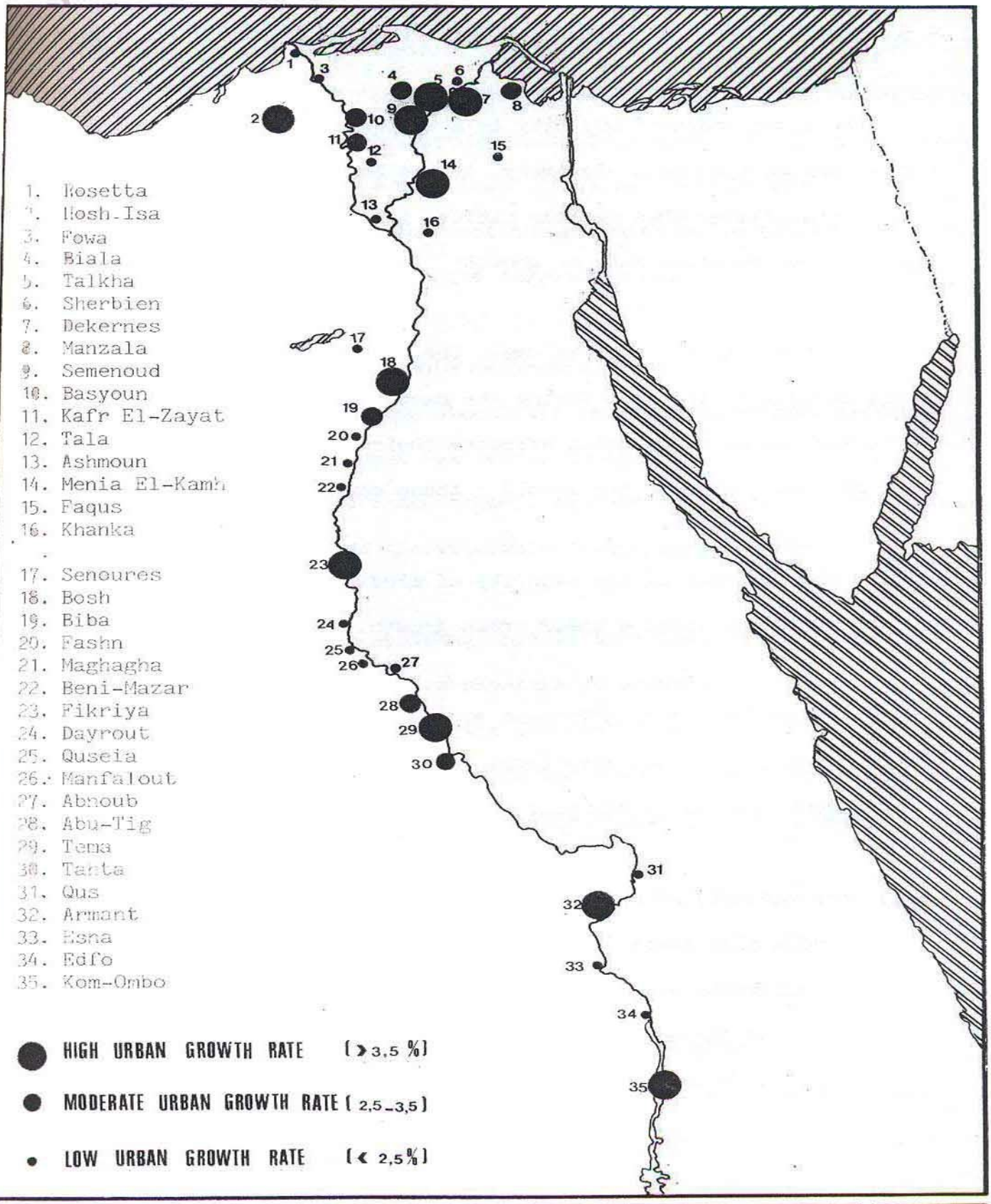
settlements and to the average annual population growth rates of these towns (1960 - 1976).

i) The spatial distribution of middle size towns was almost unbalanced one in both 1947 and 1960. Eight towns of 18 middle size towns, and 14 towns of 32 middle size towns were located in Upper Egypt in 1947 and 1960 respectively. This imbalanced distribution occured due to the concentration of the development programs in Lower Egypt during this period.

ii) In 1976 the spatial distribution tended to be balanced, 19 towns of 35 middle size towns were located in Upper Egypt. The majority of middle size towns located in Lower Egypt in 1960, have grown rapidly, that they have been classified at higher ranks in 1976. Therefore some new middle size towns have been appeared to satisfy the function of such a size of towns. On the other hand, those located in Upper Egypt have remained in the same size class due to their low growth rate in addition to some new towns which have been classified as middle size towns for administrative reasons.

iii) 75% of middle size towns have experienced lower annual urban growth rates than the national urban growth rate between 1960/1976. Out-migration towards the two primates and other big cities is responsible for this low urban growth rates.

iv) Lack of different infrastructure facilities and development programs in Upper Egypt have lead to continous out-migration from towns in Upper Egypt to those in the Delta. This has kept several towns such as Edfu, Abu-Tig and Senoures in the same size class since 1947.



SPATIAL DISTRIBUTION OF MIDDLE SIZE TOWNS, 1976 "ACCORDING TO ANNUAL URBAN GROWTH RATE"

Fig. No.: 3_5

3.5 PROBLEMS OF MIDDLE SIZE TOWNS IN EGYPT _ A Brief Revi

'The growth rate of any city is a variable related directly to the city's rank in the urban hierarchy. It has been observed that large cities tend to grow faster than smaller cities, in short the large the city is, the higher is its relative rate of growth'[1/]. (Abu-Ughod, J. pp.336, 1965).

This true in the Egyptian case. The passive role of middle size towns in the urban life of Egypt during the past four decades is a direct result of the serious problems which affected their growth (aside from the size point of view mentioned previously) these could be summarized as follows:

i) The location of the majority of middle size towns inside agricultural areas has limited their urban growth.

ii) Lack of existing efficient exonomic base sufficient for the urban growth of middle size towns that could be relied upon in any development process or economic growth of these towns.

iii) The maturity of urban activities and infrastructure services in middle size towns is not sufficient for satisfying different urban requirements of their population, which makes big cities more attractive for the population of such size class of settlements and ecourages them to migrate out of these towns.

1/ Urbanization In Egypt - Present State and Future Prospects, Social Research Centre, The American University In Cairo, Reprint Series No. 5, Cairo.

iv) The concentration of industrial projrects and different urban services in the two primates during the past decades, while no real urban activities or suitable infrastructure facilities have been located in smaller communities 'middle size town', this has lead to over-concentration of urban population in these two primates while middle size towns have remained as centres for the surrounded rural areas.

v) Lack of sufficient investments necessary for developing middle size towns, because of directing almost all investments towards different new cities during the past few years, furthermore, the two primates (Cairo and Alexandria) and other large cities compete for the rest of these investment and the avialable development programs.

To reiterate; generally speaking, middle size towns in Egypt are suffering from several problems such as shortage of urban activities and services 'health, education .... etc.', the bad condition of different infrastructure facilities, lack of new job opportunities, in addition to the spread of rural housing within the towns' boundaries which gives these towns more rural character.

3.6 SYNOPSIS

A middle size town may be regarded as one of the growth stages of most towns. The range of population size determinating this stage is not fixed, but it changes periodically according to several factors. Middle size towns could be identified as: (the urban settlements roughly located within the middle third of settlement having a population size of '20.000 - 100,000') inhabitants. This middle third includes all towns with a population size ranging between 30,000 to 45,000 inhabitants, (according to 1976 statistics).

There are 36 towns representing about 34% of the total number of urb settlements of Egypt that could be classified as middle size towns, consi dering the previous definition. The majority of these towns were original rural centres till the middle of this century, when these were classifie urban for governmental or administrative reasons. The spatial distributio of these towns is almost balanced in Upper and Lower Egypt, nevertheless, their average annual population growth rates are lower than that of Egyp (urban) during the past four decades. The out-migration towards the tw primates and other large cities is the main reason for such low urban gr rates.

Generally speaking, middle size towns have a little or no active rol in the urban development of Egypt during the past few decades. Their shar of total urban population has decreased from 10.5% in 1960, to 8.8% in 19 Furthermore, their share of the total population have decreased from 4.3% to 3.7%.This demonestrates that, the rapid urban growth of Egypt during t past four decades was mainly due to the over-concentration of urban popul tion in the two primates, while the majority of smaller urban communities were stagnant or experiencing net loss of population.

This passive role of middle size towns in the urban life of Egypt i due several reasons, that affected their growth. Some of these reasons a related to the towns themselves, such as, their location inside the agri tural land, having no existing economic - base that could be relied upon any development or economic growth and the immaturity of their urban ac ties and infrastructure facilities. Other reasons are related to the nat al policies during the past few decades which have lead to the concentra of industrial projects and different urban services in the two primates ther than smaller communities, and directing a considerable volume of t

the avialable investments towards the new cities without giving any attention to existing towns.

Aside from the range of population size, low annual growth rate and location inside agricultural lands, middle size towns are characterized by the variety of problems they suffer from, such as: shortage of urban activities and services, bad condition of infrastructure facilities, lack of job opportunities in addition to the spread of rural housing in the peripheries of these towns.

In spite of all problems affecting the growth of middle size towns, there must be a comprehensive strategy for their development, as they do represent one third of the existing urban settlements, that should play an active role in solving urbanization problems of Egypt, within acomprehensive national urban policy.

IV

THE ROLE OF SECONDARY SETTLEMENTS IN SOLVING URBANIZATION PROBLEMS OF EGYPT

The three previous chapters brifely illustrated the population and urbanization problems in Egypt, with special emphasis on the middle size towns and their Historical role in the urban structure of Egupt. This chapter concentrates on the National Urban Policy Study[1/] and its alternatives for solving Egypt's urbanization problems.

The importance of this study stems from its comprehensive nature and that it is the first in that respect. This study has not completed to date, though its concepts, format and conclusions took good shape. In Spite of, only considering urban settlements with 50,000 inhabitants and more in the National Urban Policy Study, a number of these urban settlements could be classified as secondary cities . This makes the study of great benefit when concerning with lower ranks of secondary cities such as middle size towns due to the similarity in characteristics, problems and development potentialities of the secondary cities group.

In addition the National Urban Policy Study presents an evaluation and comparative analysis for all main urban projects that have been implemented during the past few years 'new cities such as 10th of Ramadan city, Sadat city .. .. .. etc'. By evaluating such projects, some real figures and indicators could be obtained and used in comparative analysis of other Projects.

In brief, this chapter is mainly concerned with the National Urban Policy Study as a comprehensive study of the urbanization problems of Egypt.

1/ PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study,
. Working Paper, Cairo, October 30, 1980.
. Interim Action Report, Cairo, January 31, 1981.
. Working Paper on First Round Alternatives, May 31, 1981.

It attempts to investigate the different basic settlement concepts and al
natives to trend pattern presented by this study. Then it tries to evalua
the role of secondary cities emphasis strategy in these alternatives and
criticizes the assumptions of which this concept was formulated in the
National Urban Policy Study. Also, it tries to evaluate the potentialitie
of the secondary cities emphasis strategy as an inter-regional deconcentra
ion concept that can provide alternative solutions for urbanization probl
of Egypt.

4.1 THE BASIC SETTLEMENT CONCEPS

'The concepts fall into two distinct classes : these which respond t
settlement problems unique to Egypt, and those which respond to settlemen
problems that Egypt shares with other nations in both the developed and
developing worlds.

The use of a multiple - strategy approach is necessary not only beca
of the existence of special urban problems but also, because no single se
ment strategy has yet been identified which at once satisfies all of the
major goals of society. This due chiefly to the fact that settlement stra
gies are essentially population redistribution strategies implemented by
shifts in the spatial distribution of investments and employment. Towards
attaining the goal of economic efficiency, some strategies require relati
concentrated spatial distribution; in pursuit of inter-regional eauity, s
reauire relatively dispersed spatial distribution. Thus, a universal tec
cal solution would only exist if (i) all nations experienced the same ki
of urban problems, and if (ii) governments sought only to promote a sing
social objective. Because the world is far more complex, all well-articu

national urban policies are multi - strategic in content'.[1/] (PADCO, 1981, pp. 5).

The problem is not to find that settlement strategy through which the goals of a society could be satisfied, but to search for that combination of settlement strategies which respond to local urban problems of a unique nature and which best satisfy the multiple goals of that society,

4.1.1 Intra - Regional Deconcentration [2/]

The objective of this strategy, is to provide a solution to the very difficult problem of primate city over-concentration within the region of the primate city itself.

Over-concentration of the primate city is a widespread problem usually found in the world's great centres. This record of spatial concentration has not occured without side effects; beyond a certain 'optimal' city size, urban scale diseconomies,notably congestion, begin to (i) impaire the efficient functioning of the urban core, (ii) create visible social problems; and (iii) give rise to an inefficient use of the urban periphery in the form of sprawl. The strategy of intra-regional deconcentration appears to be pertinent to the Egyptian settlement conditions, as it is clearly evident that Cairo, and to lesser extent Alexandria, suffers greatly from primate city over-concentration caused by the existence of urban forms that are now obsolete.

1/ The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.
2/ The same refrence above.

'On the basis of a great deal of accumulated experience in other parts of the world, it is equally clear that a strategy of intra-regional deconcentration will not by itself be nearly adequate to resolve the fundamental problems. But by far the most important reason why this strategy sould be included in Egypt's national urban policy is the indisputable fact that it is currently being implemented in the Cairo region. Indeed, the construction plans for such satellite communities as 15th of May, 10th of Ramadan, 6th of October, El-Obour, are the virtual equivalents of the new towns of Paris both in term of their population targets for the year 2000, and in their commuting distance from the central core.'[1/] (PADCO, 1981, pp.15).

The importance of including intra-regional deconcentration strategy in Egypt's national urban policy provides a sound straight forward concept, though the comparison here between Cairo and Paris is not accurate. They might approximately have the same population size of satellites that surrounded each of the two primates, but they differ in so many details. For example the commuting time couldn't be the same, due to the great difference in transportation facilities and their travel time in Cairo and Paris (even in case of the same commuting distance).

The major problem of such alternative strategy with the Egyptian case, is the fragmentary procedures instead of a system approach. Each satellite community appears to have been planned in a vacuum rather than being strongly related to other satellite communities and the primate core within a comprehensive regional development plan. (A study[2/] was recently carried

---

1/ The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.

2/ Dr. Toulan, N. New Towns in the Greater Cairo Urban Region, General Organization for Physical Planning, Cairo,
- Report 1, Existing conditions, August 1979.
- Report 2, Regional Planning Guidines, March 1980.

out to evaluate new towns in the greater Cairo region ' Al-Amal, El-Obour and 6th of October 'in a trial to provide a system approach to comprehensive regional development plan to greater Cairo region).

4.1.2 Inter - Regional Decentralization[1/]: Growth Centres Emphasis

Inter-regional decentralization strategies seek solutions to primate city over-concentration out side its region, within other cities and regions located throughout, the nation. This strategy has several forms, some emphasize growth centres while others foucs on small medium-sized or secondary cities. But all these forms attempt to accomplish greater degrees of inter-regional equity in the distribution of economic opportunity and population.

4.1.2.1 Regional Concentration : The Countermagnet

' While all growth centre concepts feature inter-regional equity as their primary social objective, they also share a common secondary objective : the regional economic development. Countermagnet concepts pursue these two objectives by attempting to creat another major metropolitan region to compete for migrants to the primate city. Such attempts to promote agglomoration economies are usually implemented by intense concentrations of investments in or near one of the nation's largest existing cities - as in the case of Islamabad " Rawalpidi ", New Delhi " Delhi" or New Bombay " " Bombay ".[2/] (PADCO, 1981, pp. 16, 17).

1/ 'This approach originated in the U.K. in the 1930's when the first generation of British new towns were built in an attempt to intercept the heavy migration to London comming from depressed areas in the north of England and Wales'. (PADCO. 1981, p. 16).
The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.

Egypt could very well use another major city as it is one of the few countries in the world that has only two major metropolitan areas, Cairo and Alexandria, in spite of having population over than 40 million. This could be one of the positive sides of the applicability of the countermagnet strategy tp Egypt. Several locations has been recommended by the 'N.U.P.S.' to create another major metropolitan region that can compete with Cairo (specially that Alexandria governorate couldn't play that role due to the topographical constraints) such as Aswan, Quna - Naga-Hammadie and Fayoum in Upper Egypt. But the highly recommended site by the 'N.U.P.S.' for applying such strategy is Ismailia, due to its centrality, aminity factors and accessibility to water supplies, electric power, international markets and roads networks.

On the other hand, it must be always remembered that, the countermagnet concept requires heavy concentration of investment resources in a single region for a long period of time.

4.1.2.2. Regional Dispersion : Growth Poles[1/]

This concept has the same objectives of the countermagnet concept. It attempts however to induce agglomoration economies in a number of urban regions throughout the nation so as to achieve a more balanced geographic structure of development. It is based on, search for relatively high-growth urban areas with the capacity to absorb additional investment in general economic activity,

The impact of growth poles strategy when applied on altering nations.

1/ For more details, please refer to chapter (V).

urban hierarchies has been generally negligible, due to several factors that have been summarized by the National Urban Policy Study in the following: 1/

i) Success prospects vary inversely with the number of growth poles targeted for implementation, as the balanced regional growth objective frequently results in dilution of effort and capital expenditure over too many regional constituencies.

ii) The general understimation of the provision of associated infrastructure, to ensure adequate linkages between the growth poles and domestic and international markets.

iii) This strategy needs a decentralized administrative or political system, to achieve any modicm of sucess, that has permitted the transfer of human capital, in the form of competent administrators and managers of public investments, to the areas chosen for development. In case of not having such a system, growth pole targets have to be located close enough to the capital city to enjoy adequate access to the central government. 2/

4.1.2.3. Secondary Cities Emphasis

The primary objective of this strategy is to slow migration to primate cities by improving the invironmental conditions in the medium and small-size cities, while its secondary objective is to raise the level of inter-regional equity in the provision of both technical and social infrastructure

---

1/ PADCO, IN C. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.

2/ This difficulty is greatly relevant to Egypt.

by providing secondary settlements with better roads, sewerage, housing, health facilities, vocational training .. .. etc.

In applying such a strategy to existing medium and small-size communities, two main difficulties are likely to be experienced, these are :[1/]

i) It relies exclusively on inter-regional shifts in infrastructure investments to induce agglomoration economies, instead of shifts in employment on which migration to the primate city is largely based.

ii) The capital dilution over large number of settlements targets in lower end of the hierarichy.

To achaive the best results, the National Urban Policy Study has stated that, the secondary cities strategy should be implemented by concentrating investments in the largest of the secondary settlements and the new secondary settlements for large regions that have been targeted for development.

4.2 INTERACTION BETWEEN NATIONAL OBJECTIVES AND DIFFERENT SETTLEMENT CONCEPTS

' The major objectives for urban policy are those of the national poli namely :

i) Achievement of high rates of economic growth.

ii) Enhancement of social justice through inter-personal and inter regional equity.

1/ PADCO, INC, with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.

iii) Protection of arable land; and

iv) Reduction of the adverse consequences of over-concentration in Cairo[1/]

(PADCO, 1981, pp. 1).

As mentioned previously, no single settlement strategy can sufficiently achieve all the major goals of any society. The problem is to find which combination of settlement strategies that satisfies the multiple goals of that society. Each of the different settlement concepts could be the optimum satisfaction for one objective, but usually has some side effects to the others. So, a combination of different settlement strategies that make full use of all the merits of each concept could satisfy all national objectives.

For example, both of intra-regional deconcentration and countermagnet strategies can achieve high rates of economic growth due to the agglomoration economies, but they can not achieve satisfactory inter-regional or inter-personal equity (social justice). The main difference between these two concepts is that, while the first one attempts to solve the over-concentration problem of Cairo within its metropolitan area itself 'satellites and new cities such as 6th October, El-Obour .. .. etc', the countermagnet tries to solve the same problem by creating another metropolitan area to compete with Cairo for migrants to primate city 'Ismailia'.

Furthermore, growth poles and secondary cities emphasis strategies can manage higher degrees of social justice, but they achieve less rates of economic growth than the other two concepts due to the wide dispersion of investments. They attempts to reduce the over-concentration of Cairo by

---

1/ The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.

improving infrastructure and personal services in different centres to slo the migration to the primate city.

The arable land conservation is one of the most serious problems in Egypt. Protection of arable land is one of the national objectives, but in the same time it represents one of the main constraints to the urban growt The following statement summarizes the problem of Egypt's arable land.

' Land reclamation and associated infrastructure, though vigorously pursued by Government, has simply not kept pace with encroachment. Between 1952 and 1978 a total of 915,000 feddans were reclaimed - an annual rate about 35,000 feddans. However, according to Professor Weidemann:

Only 770,000 feddans of this area are considered cultiviable. Of th cultivable area, large areas either have not been brought into cultivation or have subsequently reverted to desert. Thus no firm figures are availab concerning the actual amount of land reclaimed. It has been stated that on about 60% of land having been reclaimed is actually under cultivation. (Th a more realistic figure might be 460,000 feddans'.[1/] (PADCO, 1981, pp. 11).

Even more disheartening is the more recent record of land reclamation between 1970 and 1978, a total of only 48,000 feddans have been reclaimed an annual rate of just 6,000 feddans.

Aside from its lower productivity, the major problem with land recla tion as a solution to urban encroachment is its high cost. Our estimat of

---

1/ Weidmann, W. Effect of Urbanization on the Agricultural Land Resource Base : Status and Future Expectations, National Urban Policy Study Wo ing Paper, Cairo, 1980.

the current cost of reclaiming a single feddan is in the region of L.E. 1900 (although it can go as high as L.E. 4200 per feddan as in the case of the West Nubariya Extension). Thus, if it is assumed that about 50,000 feddans are lost to urban encroachment each year, the total cost to Government of reclaiming an equal amount would be L.E. 95 million. Since it is well known that production on reclaimed land has lower yields, the actual cost would be several times higher to replace production losses.

While the loss of agricultural land to urban uses is perhaps most acutely felt in the prime agricultural area of the Delta, it is also a serious problem throughout the Nile Valley. The strategy of arable land conservation is therefore proposed for all agricultural land. As a first step in its implementation, the strategy calls for a moratorium on industrial and institutional location on agricultural land. The Government clearly has the power to influence these location decisions and while all infringement on arable land is probably beyond present control, a ban on industrial usurpation of agricultural land would prevent or discourage the associated use of such land by commercial and residential activities.' [1/] (PADCO, 1981, pp. 11,12).

The problem of arable land could be solved more easily in a strategy such as intra-regional deconcentration, due to the freedom to choose suitable desert land location for the proposed new settlements far from the arable land ' El-Amal city, El-Obour ..... etc '. On the other hand, this problem represents a strong constraint to a strategy such as the secondary cities emphasis, that depends mainly upon developing secondary urban centres which are usually located within agricultural areas specially in the Delta. Arable land has to be carefuly protected either when choosing areas for future urban

---

1/ The National Urban Policy Study (Interim Action Report), Cairo January 31, 1981

expansion, or when suggesting different land uses in these areas in secondary cities.

The National Urban Policy Study has presented four different alternatives[1/] as possible results of choosing various spatial investment pathes over the period of 1980-2000. These alternatives could be summarized as follows :

Alternative A:

he major emphasis of this alternative is on the large metropolitan areas of Cairo and Alexandria. Cairo is assumed to grow at the 1960-1976 trend rate and reach a population of 16.35 million by the year 2000, while the growth of Alexandria zone has to be accelerated than the trend. New settlements, in addition to currently planned satellites and new towns, will be needed to locate the large population in these areas. furthermore, the achievement of population targets for the Canal Zone and some increase over the trend in North Upper Egypt are necessary to reduce the growth of Delta Zone when compared to the trend pattern.

Alternative B:

It emphasizes inter-regional decentralization through two types of growth centre strategies. Alternative B_1, colles for creation of a major countermagnet in the Canal Zone in Ismailia to draw additional population from Cairo and the Delta Zone, This would be coupled with the same degree expansion of Alexandria as in the previous alternative. Alternative B_2, is a growth centre strategy emphasizing additional growth poles in North and South Upper Egypt and the Red Sea. Alexandria and Canal cities receive les

---

1/ PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study (Interim Action Report) Cairo, January 31, 1981.

emphasis in this alternative than B_1. The geographic spread of this alternative is expected to have the effect of reducing population growth in Cairo and the Delta, but not as much as alternative B_1.

Alternative C:

It is the most extreme decentralization strategy, that includes more expansion of secondary cities in Upper Egypt, North West Coast and the outlying settlements of the Red Sea, Western Desert and Sinai Zones. The intent of this strategy is to hold conciderably more people in areas from which substantial number of people now migrate to Cairo by maintaining and improving secondary cities' infrastructure and developing the service capacity of rural population.[1/]

4.3 THE ROLE OF SECONDARY CITIES

The following statement could summarize the role of secondary cities emphasis strategy in the urban policy of Egypt as has been estimated by the National Urban Policy Study.

' Secondary city strategy has the lowest probability of influencing migration to major metropolitan areas and should probably be concentrated in the largest of these. The intent of such strategy would be to upgrade the infrastructure and local service facilities of the secondary cities to improve their capacity to hold expected population growth, rather than to induce substantial in-migration. Cities which should be considered in this strategy are mostly in North and South Upper Egypt and include: Minya, Mallawi,

---

1/ Key characteristics of different alternatives are shown in tables 'B-1' to 'B-4', please,refere to Appendix B.

Assuit, Sohag, Akhmim and Luxor. In the more remote regions; Matroh, Kharga, Mut, Ghardaka, Ras Ghareb, Safaga and El-Arish are possibilities'.[1/] (PADCO, pp. 64).

Generally speaking. 'the National Urban Policy Study tries to address the question of, where the most promising places are in the settlement system to locate investment with a reasonable chance of economic return as well as capacity to obsorb future population growth without intruding on arable land or unnecessarily increasing infrastructure costs to service the population.'[2/] (PADCO, INC. 1981, pp. 23). The National Urban Policy Study tries to answer this question throught the previous four alternatives, but secondary cities have not taken a real active part in any of these alternatives, even in Alternative C, which is the most extreme decentralization strategy through secondary cities emphasis.

Before, accepting or rejecting the National Urban Policy Study views regarding the efficiency of the secondary cities strategy, the main assumptions on which this strategy was formulated in the 'N.U.P.S.' have to be examined. These assumptions could be summarized as follows :

i) Investments have to be concentrated in the largest secondary settlements and the new settlements for large regions that have been targeted for development.

ii) The strategy relies exclusively on inter-regional shifts in infrastructure investments, while migration to primate city is mainly based on employment expectations.

1/ The National Urban Policy Study (Interim Action Report), Cairo, January 31, 1981.

2/ The same refrence above.

iii) All secondary cities included in any of the four previous alternatives have a population size over 50,000.

An evaluation to each of these assumption in addition to comparative analysis to implementation costs of several projects have been carried out hereafter, for identifying the role of secondary cities emphasis strategy in the Urban Policy of Egypt.

4.4 A CRITIQUE OF THE APPROACH TO SECONDARY CITIES STRATEGY

The views of the National Urban Policy Study regarding investments concentration in the largest secondary settlements and new secondary settlements for large regions (that have been targeted for development 'Sinai, the Red-Sea and Norhtwest Coast') to avoide the capital dilution over large number of settlements. Also the improvement of infrastructure facilities of secondary urban settlements as means to slow the flow of out-migration to primate cities. These views are justifiable and sound, though one could raise many objections on some of the issues. These are disscussed soon after :

4.4.1 Inter-Regional Shifts in Infrastructure Investments Versus Employment.

There is no doubt that, the improvement of infrastructure and local service facilities of a secondary city can create some employment opportunities in the service sector of these cities. Moreover, it will encourage their inhabitants to remain in their own settlements instead of migrating to primate and big cities which attract those migrants due to the high level of different services and infrastructure facilities. This up-grading of public services

has to be accompanied with creating some local industries, agro-industrial projects (Bilbeis case study), or even a heavy industrial complex (Naga-Hammadie case study) to provide new job opportunities which could not be absorbed by the services sector allone.

Inter-regional shifts in infrastructure investments are not efficient enough to hold the population of secondary cities, except in case of providing these settlements with suitable economic base through inter-regional shifts in industrial investments parallel to that in infrastructure.

Unlike new cities or countermagnet strategies, secondary cities emphasis strategy does not need to concentrate huge investments in one place from the beginning to creat agglomoration economies through constructing heavy industries. This needs a great effort to attract national and foreign investments to be directed towards only one place and a certain type of investment. Secondary cities strategy provides diffenent opportunities for investments in several types and locations. This due to the possibility of providing the sufficient level of economic development through different types and categpries of economic projects ' land reclamation, agro-industrial projects, light industries, medium industries .. etc ' according to the circumstances of each secondary settlement. Even in case of constructing a heavy industrial project in certain secondary settlements, this will enable such a settlement to play an active role, further far than its own region, in developing the surrounded area.[1/]

1/ Please, refere to Naga-Hammadie case study, PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, Illustrative Development Project'Qena - Naga Hammadie) - The National Urban Policy Study, Cairo, January 1982.

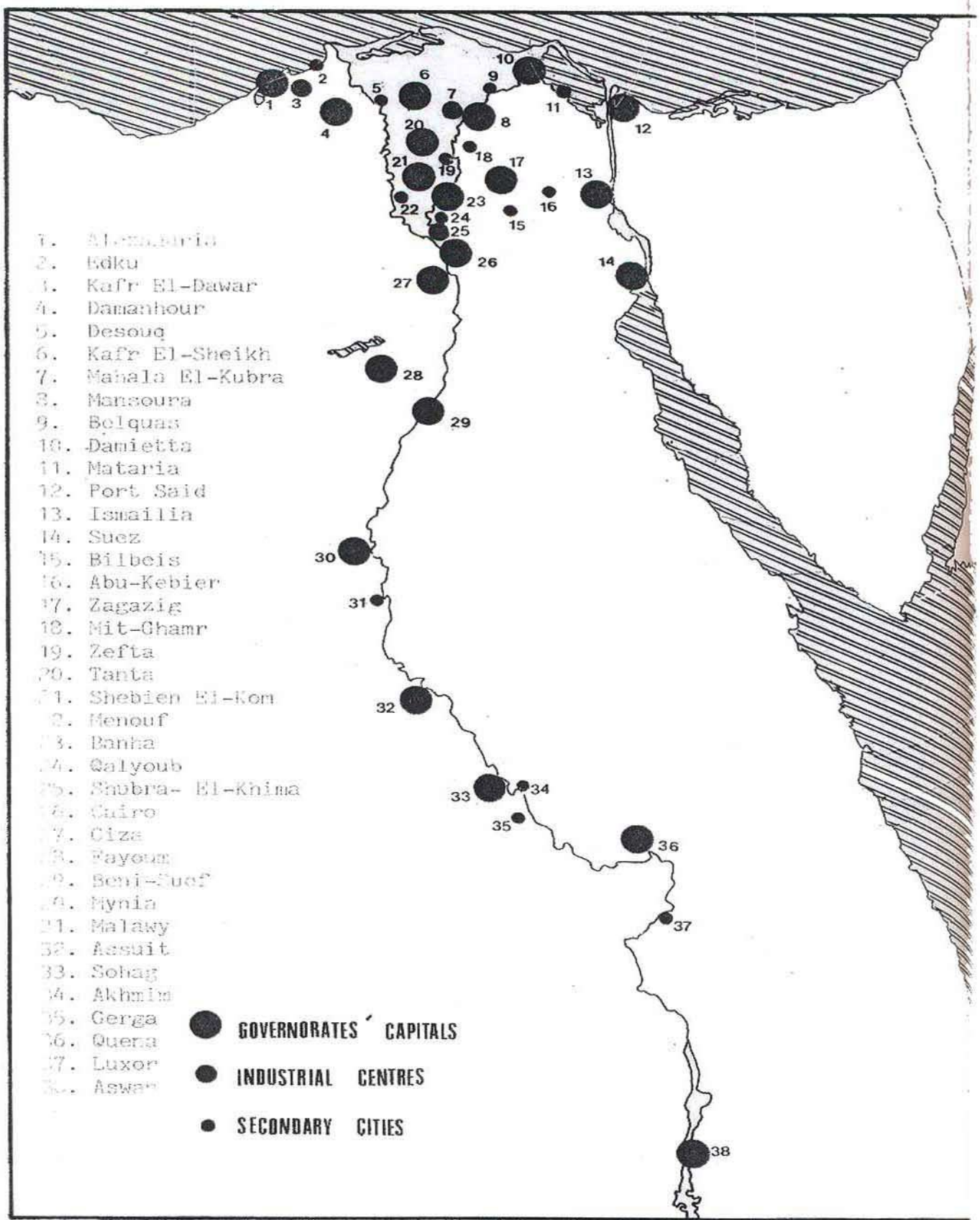
4.4.2 The Question of Size

The National Urban Policy Study has only focused its attention on settlements having population over than 50,000 inhabitants in 1976. The study includes some 38 urban settlements represent only 24% of the total number of urban settlements of Egypt, that accommodate about 88% of the total urban population of Egypt. But, this 88% is mainly due to the imbalanced urban structure, as about 48% of this urban population is accommodated in Cairo and Alexandria. Thus, the study has considered, beside the two primates, only 36 urban settlements that represent 23% of the total number of urban settlement and accommodate about 40% of the total urban population. Thus it neglects some of 76% of the existing urban settlements which already have, to different degrees, urban growth potentialities.

Moreover, among these 38 cities, 22 cities, in in addition to Cairo and Alexandria, are either governorates capitals or large industrial centres 'Mahala El-Kubra, Kafr El-Dawar and Shubra El-Khima. These have already experienced relatively high urban growth rates during the last few years and become over-concentrated with population compared to their infrastructure networks capacities and the public services standards. The other 14 cities, are located mainly in the Delta (10 cities) while only (4 cities) are located in Upper Egypt from which the majority of immigrants are coming to the primates, fig. '4-1'.

In brief, considering only urban settlements over 50,000 inhavitans, is not sufficient to examine the secondary cities strategy due to different reasons, that could be summarized as follows :

i) The majority of these cities have already reached a relatively high



SPATIAL DISTRIBUTION OF CITIES HAVING OVER 50,000 INHBITANTS IN 1976

Fig. 4.

urban growth rates for being administrative centres, governorates capitals, or large industrial centres which are in need to control their growth not to increase their urban growth.

ii) There are only 14 secondary cities that represent only 9% of the total number of urban settlements of Egypt (Aside from governorates capitals and industrial centres) which is relatively small percentage to be depended upon.

iii) The imbalanced spatial distribution of the proposed 14 cities from both numerical and locational point of view. As mentioned previously, Among these 14 cities, there are 10 settlements located in the Delta while only 4 settlements are located in Upper Egypt. In the same time Upper Egypt is suffering from lack of urban development, while the Delta is over-concentrated with population.

4.4.3 Implementation Costs

One of the main factors which has to be considered when recommending any of the previous strategies, is the implementation costs of this strategy. The importance of this factor increases if the country is a developing one such as Egypt. A comparative analysis study has been carried out between the implementation costs of secondary cities emphasis and new cities strategies. New cities strategy is the only strategy that has started to be applied till now, and some data about its implementation costs are available.On the other hand, due to the lack of data about implementation costs of secondary cities some demonestration and low income,(World Bank) projects in some existing cities have been chosen to be just indication for expected implementation

costs in similar projects in existing secondary cities.

Tables '4-1' to '4-3', provide a comparative study about land consumption, per-capit investments and per-capita costs of infrastructure between a number of selected new cities, 10th of Ramadan - Sadat City - 6th of October, and demonestration and low income projects in several existing cities, (Suez - Ismailia- Assuit - Alexandria) which in spite of being generally larger than the proposed secondary cities, counties centres, in population size, they can give good indicators and real figures to be compared with new cities strategy.

Table '4-1', indicates the per-capita land consumption, residential - services - open spaces - circulation - industry and tourism, in both of new cities and existing ones. This figure is ranged between 137.0 - 74.9 m^2 / person in new cities, while it is reduced to be ranged between 49.3 - 16.8 m^2 / person in existing cities. This great difference between the two groups is due to the high standard levels of land consumption for different land uses which used in new cities. On the other hand,it has to be noticed that, although the per-capita land consumption in existing cities is small it cau great loss if these cities urban expansion is in arable land. But in case o expanding in desert land, such as new cities, a lot of money could be saved.

Table '4-2', illustrates the per-capita investment in land, housing infrastructure and community facilities for the two groups. the total per-capita investment is ranged between 2,122 - 3,907 L.E. in the projects of new cities, while this figure becomes in the range of 200 - 761 L.E.[1/] in

Table '4-1'*, Per-Capita Land Consumption in Selected Case Studies.

1/ Per-capita land reclamation cost has to be added to that figure to substitute equity up of arable land in expanding existing cities. Considering the reclamation cost is 2,000 L.E./ feddan, please refere to pp. and gross population density of 100-120 person/feddan, the added per-capita cost has to be 20-16.6 L.E. This bring the total per-capita investment in existing cities to ranged between 220-781 L.E.

Community	Stage	Population	Residential m^2/ Persons	Services m^2/ Person	Open Space m^2/ Person	Circulation m^2/Person	Industry m^2/Person	Tourism m^2/Person	Total m^2/Persons
m^2/Persons									
NEW COMMUNITIES									
* 10th of Ramadan	I	150,000	46.3	21.8	(In services)	30.5	33.3	-	132.0
* Sadat City	5 years	61,000	14.3	35.1	" "	12.6	13.0	-	74.9
	10 years	150,000	18.3	36.3	" "	12.7	17.8	-	85.1
	2000	500,000	24.4	39.6	" "	12.6	20.3	-	96.8
* 6th of October	5 years	68,000	24.4	7.1	7.3	24.7	48.4	22.0	137.9
	10 years	84,500	25.2	7.3	7.6	21.6	43.9	22.1	128.4
	2000	350,000	25.5	7.6	7.6	21.6	39.9	22.1	126.0
DEMONSTRATION PROJECTS									
* Ismailia (Abu Atwa)	2000	44,000	23.6	2.7	1.5	10.4	-	-	38.3
(El Hekr)	2000	90,000	16.1	2.2	1.7	5.0	-	-	25.1
* Suez (Cabanon)	2000	40,600	34.5	8.9	4.4	1.5	-	-	49.3
WORLD BANK LOW INCOME PROJECT									
* Alexandria (South Metras)	1984	9,000	10.7	0.9	0.3	4.3	0.6	-	16.8
* Assiut (Sourth Gharb El-Bols)	1984	14,000	10.7	0.5	0.3	4.8	1.1	-	17.4

* Source: PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study (Working Paper), P.23, Cairo, October 30, 1980.

Table '4-2'*, Comparative Analysis of Planned Per-Capita Investment in Land, Housing, Infrastructure and Community Facilities.

SETTLEMENT	POPULATION	AVERAGE PER CAPITA INVESTMENT 1/												
		LAND	HOUSING	INFRASTRUCTURE						COMMUNITY FACILITIES				TOTAL INVESTMENT
				WATER	SANITATION	ELECTRICITY	ROADS	OTHER	TOTAL	EDUCATION	HEALTH	OTHERS	TOTAL	
NEW TOWNS														
-10th of Ramadan	150,000 500,000	-	1,111 1,111	144 85	133 192	500 179	133 425	- -	910 1,083	643 NA	228 NA	842 NA	1,713 1,713	3,734 3,907
-Sadat City	41,900 500,000	- -	903 903	138 209	85 94	370 64	148 244	- 55	741 671	242 610	20 321	213 493	505 1,423	2,122 2,997
-6th of October	70,000 350,000	- -	1,725 1,725	208 264	205 180	245 94	244 169	57 144	959 851	NA NA	NA NA	NA NA	342 619	3,025 3,195
DEMONSTRATION PROJECTS														
-Ismailia(El Hakr & Abu Atwa)	134,000	7	-	31	41	15	15	11	114	43	12	12	67	200
-Suez (Cabanon)	41,000	-	444	50	66	23	20	7	166	67	9	74	151	751
WORLD BANK LOW INCOME PROJECTS														
-Alexandria Sites & Services	9,000	-	206	4	22	26	14	1	67	5	10	2	17	290
-Assiut Sites & Services	14,000	44	124	6	18	17	23	1	65	5	10	3	18	251

* Source: PADCO. INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy ... 1982, October 30, 1982.

* ... Per-Capita Costs of Infrastructure in Selected Case Studies (All Costs ...

Table '4-3', Per-Capita Costs of Infrastructure in Selected Case Studies, (All Costs [illegible])

COMMUNITY	STAGE	POPULATION	WATER SUPPLY			WASTEWATER			TOTAL WATER & WASTE-WATER	SOLID WASTE	ROADS	ELECTRICITY			TELECOM-MUNICA-TIONS	SITE GRADING & LAND-SCAPING	TOTAL INFRA-STRUC-TURE
			NET-WORK	TREAT-MENT	TOTAL	NET-WORK	TREAT-MENT	TOTAL				NET-WORK	SUB-STATIONS	TOTAL			
New Towns																	
10th of Ramadan	5 years	150,000	-	-	81.1$	-	-	187.5	263.6	-	202.7	-	-	172.3	193.2	NA	831.8
	2000	500,000			85.2$	-	-	191.6	276.8	-	425.8	-	-	179.5	200.8	NA	1082.9
First Phase Contrator Prices		150,000	81.3	62.3	143.6	118.3	15.0	133.3	276.9	-	133.3	266.7	233.3	500.0	NA	NA	910.2
Sadat City	5 years	61,000	162.3	71.7	234.0	78.0	43.0	121.0	355.0	2.9	415.7	52.8	71.9	124.7	54.6	-	952.9
	2000	500,000	120.2	88.5	208.7	54.2	39.2	93.4	302.1	17.2	243.5	42.0	27.1	69.1	(65)**	-	686.8
Initial Construction	(1980)	16,780	54.4	83.4	137.8	110.8	-	110.8	248.6	11.5	147.7	NA	369.5	369.5		-	
6th of October	Year 5	70,000	111.5	96.7	208.2	170.9	34.4	205.3	413.5	-	243.9	56.7	189.0	245.7	56.9	-	1016.7
	2000	350,000	111.5	153.0	264.5	147.9	332.4	180.3	444.8	-	169.3	28.9	66.1	94.4	144.2	-	852.7
Demonstration Projects																	
Ismailia (El Hekr)	2000	90,000	33.8	-	33.8	49.7	-	49.7	83.4	-	15.0	15.7	-	15.7	-	14.3	129.1
(Abu Atwa)	2000	44,000	40.4	-	40.4	64.0	-	64.0	104.4	-	25.0	20.3	-	20.3	-	18.3	168.6
Suez (Cabanon)	2000	40,900	59.5	-	59.5	35.6	30.3	65.9	125.4		20.2	15.8	7.3	23.1	4.1	2.5	175.4
Lowest Income Projects																	
Alexandria		9,000	3.6	-	3.8	22.5	-	22.5	26.3	0.8	14.3	25.8	-	25.8	-	-	67.2
Assiut		14,000	6.0	-	6.0	18.2	-	18.2	24.2	0.7	23.1	17.0	-	17.0	-	-	65.2

NA Not Available
$ Masterplan Estimates
** Estimated From First Stage

* Source: PADCO, INC. with Engineering Cpnsultants Group and El-Hakim, S. & Associates, The National Urban Policy study (Working Paper), P.58, Cairo, October 30, 1980.

Table '4-4'*, Physical Standards and Costs of Selected Industries (1980 Cost Estimates)

SETTLEMENT AND POPULATION	TYPE OF INDUSTRY	DESCRIPTION	NUMBER OF ESTABLISHMENTS	NUMBER OF EMPLOYEES	DENSITY (WORKERS PER HECTARE)	TOTAL AREA PER WORKER (m^2/worker)	WATER CONSUMPTION (l/w/d)**	WASTEWATER FLOWS (l/w/d)	ELECTRICITY PER CAPITA W	ELECTRICITY PER CAPITA MW	INFRASTRUCTURE COSTS PER ESTABLISHMENT	INFRASTRUCTURE COSTS PER WORKER	COSTS PER WORKER (1980 TENDER ESTIMATES)
10th OF RAMADAN (150,000)	Heavy		26	3,500	32 *	317			8,571	30	516,162	3,829	2,189
	Medium		140	8,000	47 *	213			4,750	38	147,335	2,575	1,969
	Light		340	8,500	315 *	32			470	4	9,618	389	219
	Totals		506	20,000	65 *	154	3,550	3,550	3,600	72	73,715	1,855	1,063
SADAT CITY (500,000)	Heavy I	Metals (Iron-Steel)	1	4,000	22	460	11,700	2,972	2,000	29.2	NA	NA	3,802
		Non-Metals, Chemicals, Paint	17	10,600			1,050				2,258,823	3,623	
	Heavy II	Assembly Plants, Glass, Sand-lime Brick, Reinforced Concrete Products	127	10,530	30	360	770		2,374	25.0	403,016	1,046	2,478
	Medium	Textiles, Printing, Large Bakeries Tobacco, Needle Trades,	44	11,400	100	100	590	284	1,500	17.1	167,416	645	827
	Medium-Small	Needle Trades, Furniture Hardware	268	11,510	330	30	180		591	6.8	10,363	241	248
	Small-Scale Craft	Small Bakeries, Tailors, Leather Goods etc.	1,500	12,000	670	15	50		608	7.3	1,117	140	129
	Totals (excluding Type I Heavy Industries)		1,839	45,440	94	106	384	284			12,417	502	877
	TOTAL ALL INDUSTRIES			60,000	52	192	1,257	938	1,423	85.4	NA	NA	1,590
6th OF OCTOBER (150,000)	Light			16,000	5	2,106	60	43		24		2,600	
SUEZ LIGHT INDUSTRIES (45,000)	Light			5,600	112	89	1,735	1,428		3		1,418	

* Net Densities
** Items per worker per day

* Source: PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy [illegible] October 30, 1980.

the existing cities' projects. The frastructure investment, which is the keystone of secondary cities emphasis strategy, is ranged between 671 - 1081 L.E. in new cities, but reduces between 65 - 166 L.E. in existing cities. On the other hand, total per-capita costs of infrastructure is ranged between 686.8 - 1,082 .9 L.E. in the projects of new cities, while they are greatly reduced in existing cities' projects to be in the range of 65.2 - 175.4 L.E., according to 1980 costs, table '4-3'.

Finally, table '4-4', demonestrates the relatively high costs of constructing industries in new cities, hence the enormous investments needed. Population projections of these new cities depend on establishing an economic industrial base to provide new employment opportunities in these cities. In a developing country like Egypt with limited resources and ailing economy, where many projects are competing for the available investments, new cities could not achieve the expected rates of growth because of the lack of funds among many other problems.

4.5 SYNOPSIS

There is no single settlement strategy (whether be intra-regional deconcentration or inter-regional decentralization ' countermagnet - growth poles - secondary cities emphasis ') that sufficiently satisfies all major goals of a society. All these strategies has to be reformulated and overlapped within a comprehensive national policy.

It is justifiable to pointout that, investments have to be concentrated in the largest secondary settlements and secondary cities for large regions that have been targeted for development such as Sinai, The Red Sea and

the Northwest Coast, to avoide the capital dilution over large number settlements.

On the other hand, in order to increase the ability of secondary cities of influencing migration to major metropolitan areas, secondary settlements have to be provided with suitable economic base. This could be achieved through inter-regional shifts in industrial investments parallel to that in infrastructure facilities, particularly, that the implementation costs of the secondary cities emphasis strategy are lower than that of other strategies such as the new cities strategy, 'considering either total per-capita investment or per-capita costs of infrastructure'.

Generally speaking, the secondary cities emphasis strategy satisfies two major national objectives. These are: the enhancement of social justice through inter-regional equity, and the reduction of the adverse consequences of over-concentratin of Cairo. On the other hand, the protection of arable land and the achievement of high rates of economic growth could be achieved through this strategy by applying certain policies. The recommended towns for development have to be carefully chosen, regarding their growth in non-arable lands and their development potentialities in addition to, the possility of allocating certain industries in these towns (Naga-Hammadie and Bilbeis).

The potentialities of different middle size towns for development and the various alternatives to their spatial distribution are fully disscussed in the following chapter.

V

ALTERNATIVE STRATEGIES FOR DEVELOPING MIDDLE SIZE TOWNS

This chapter provides a classification criteria for middle size towns taking into consideration all the previously mentioned advantages and limitations of the secondary cities emphasis strategy. This classification criteria is based on three main factors affecting the development of middle size towns, namely : geographical location, economic potentialities and the size of population of these towns.

According to the proposed classification criteria, middle size towns could be divided into several groups, with development policies for each group reflecting their own circumstances and typical problems.

In brief, this chapter tries to answer two basic questions. The first is , do the various middle size towns have the same development potentialities? and the second is, which policies should be followed in the development of these towns ?

5.1 CLASSIFICATION CRITERIA

In order to classify the middle size towns ' 35 towns ' into groups sharing the some degree of development potentialities. A proposed classification criteria for this purpose is presented in this chapter. This classification criteria comprises three major factors, each in turn comprises several elements, namely :

i) Location : geographical location - distance from large cities

ii) Economic potentialities: existing economic activities - potential economic resources

iii) Population : population size - average annual population growth rate - population absorption capacity.

5.1.1 Location

The development of any urban settlement is greatly affected by its geographical location in relation to its surroundings, such as sea shores, transportation nodes, arable or desert lands and to nearby the large urban settlements.

Having a unique location may increase the development potentialities of the town. On the other hand, being located on the peripheries or out side arable lands, may give the town a great chance for horizontal expansion with minimum loss of agricultural areas. Moreover, the role of the town on the regional level is greatly affected by its distance from large urban settements

The location advantages and constraints to the development of middle size towns could be briefly summarized as follows :

5.1.1.1 Geographical Location

Figs. '5-1' and '5-2', illustrate a classification of middle size towns according to their geographical location, they also show these towns with location advantages due to their unique location or the possibilties of horizontal expansion in non arable lands. These towns could be classified in four groups as follows :

i) Coastal Strips Towns : Those located on the sea shores or lakes such as ROSETTA and MANZALA.

ii) In-land towns : Those located inside agricultural lands with no possible horizontal expansion but in arable land, such as the majority of towns located in the DELTA and SENOURES in UPPER EGYPT.

iii) Peripheries of the Delta: Towns such as KHANKA, FAQUS and HOSH-ISA have expansion possibilities in the desert due to their location on the peripheries of arable land in the DELTA.

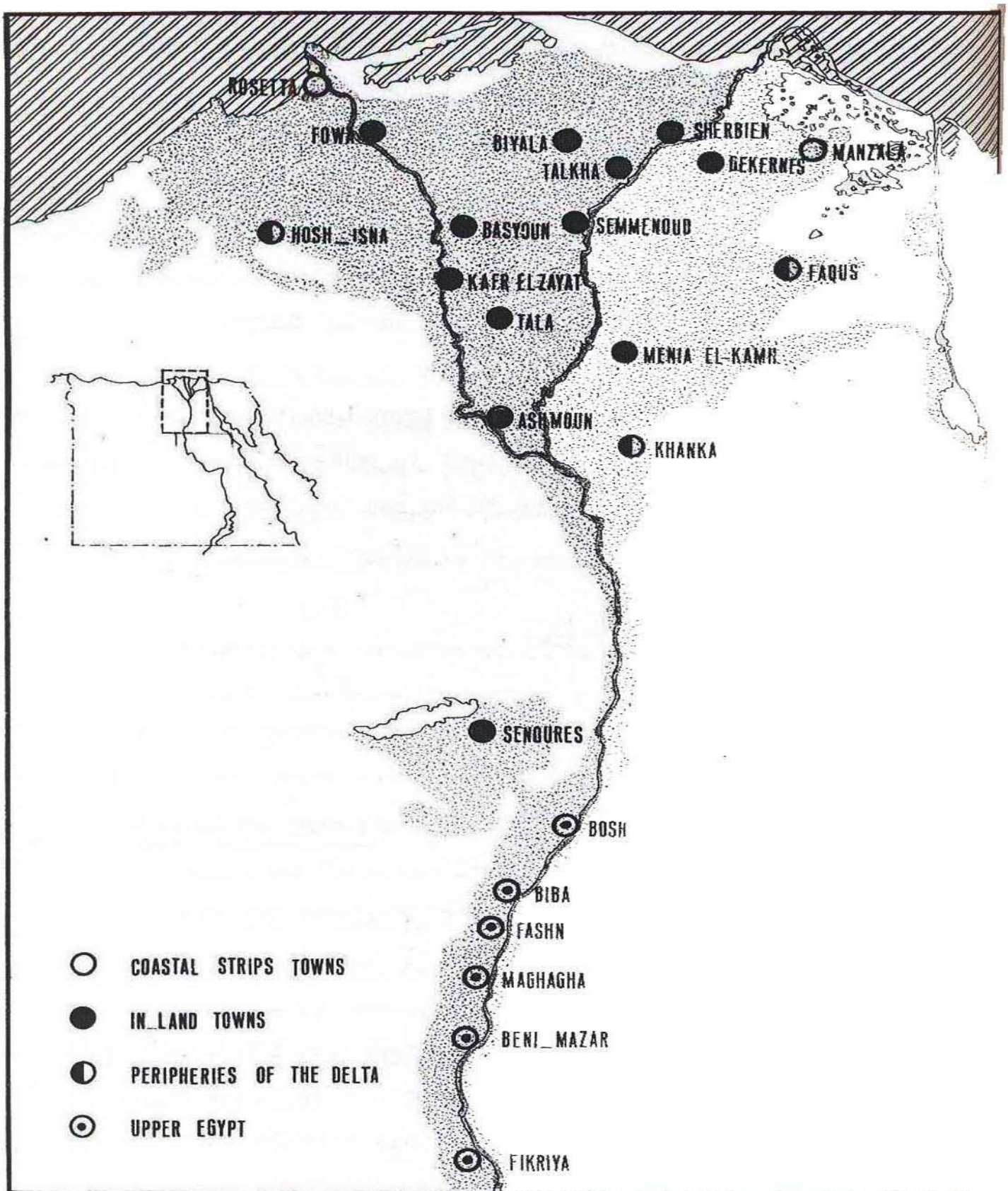
iv) Upper Egypt: Towns located in Upper Egypt have the chance of horizontal expansion in non arable land (in spite of being located inside agricultural lands) due to the narrownes of the Nile Valley.

5.1.1.2 Distance From Large Cities

The migration flow from small towns to large cities, together with the rural-urban migration are the two main reasons for the over-concentration of urban population in large cities, which causes severe urbanization problems. The effect of the attraction of large cities on the population of medium sized towns increases if these towns are located within the influence Zone of large urban settlements.

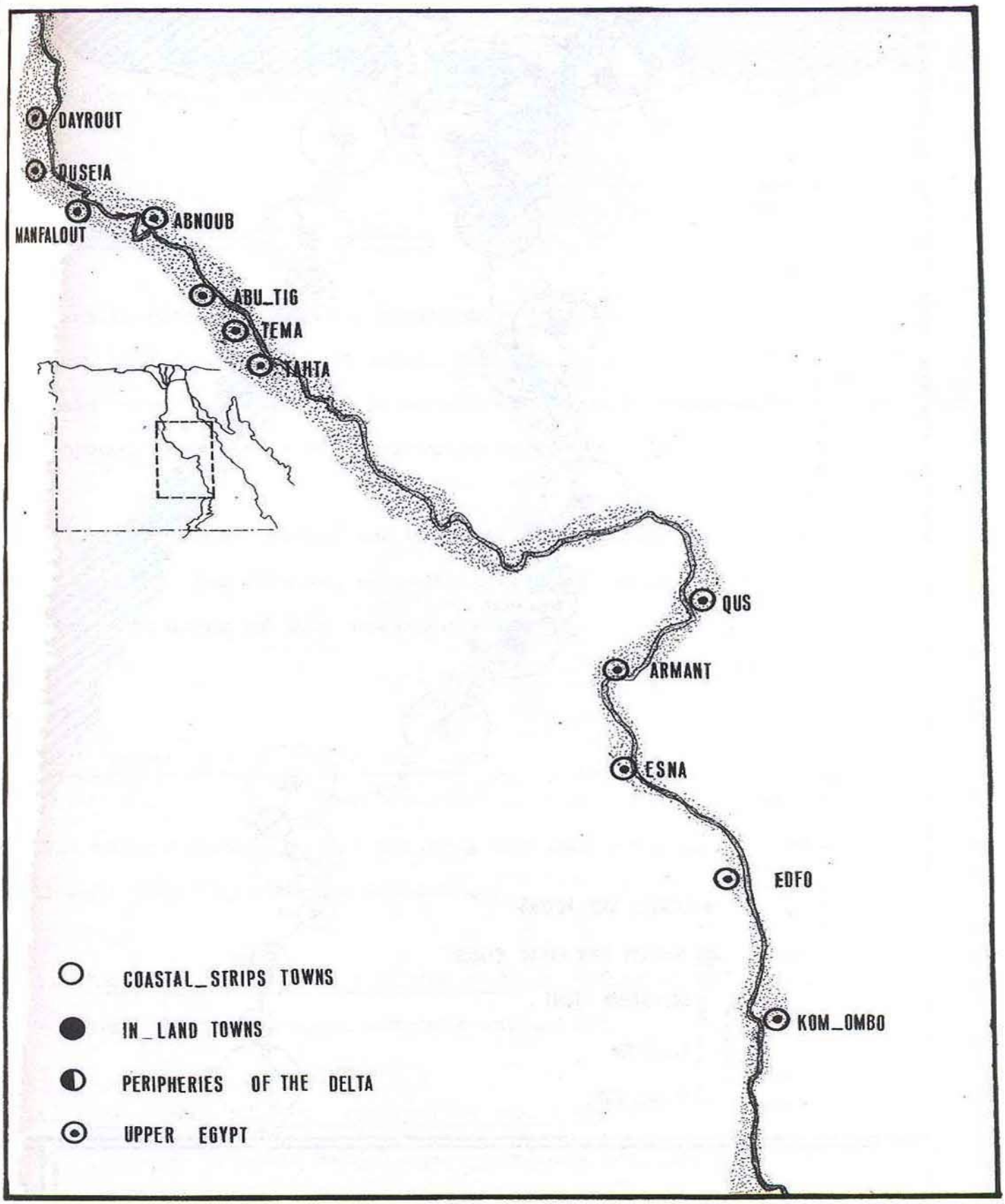
The further the distance is between the town and nearest large city, the greater its chance is for acting as a service centre on the regional level, through which more inter-regional equity could be achieved.

Fig. (5-3), illustrates the spatial distribution of middle size towns in relation to primate and large cities. The influence zone of large cities is considered to be (18-35) Km., while the influence zone of secondary centres,



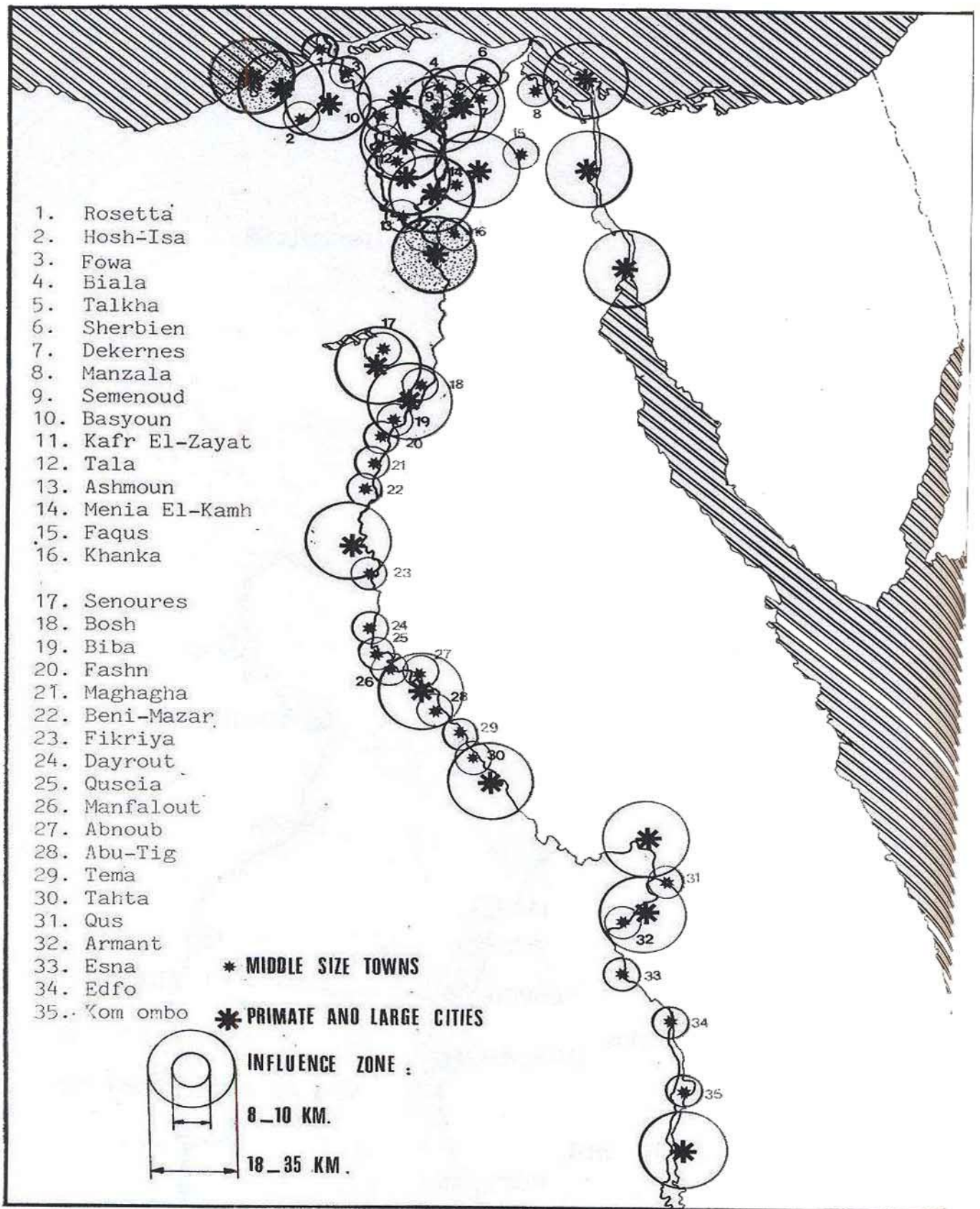
GEOGRAPHICAL LOCATION OF MIDDLE SIZE TOWN, LOWER EGYPT

Fig-No:
5.1



GEOGRAPHICAL LOCATION OF MIDDLE SIZE TOWN, UPPER EGYPT

Fig. No.: 5_2



DISTANCE TO PRIMATE & LARGE CITIES

Fig. 5.

middle size towns, is assumed to be (8 - 10) Km.[1/]

5.1.2 Existing Economic Activities

There is no possible urban development without an efficient economic base. Any town that possesses an economic base or the potentialities to secure such economic base, is considered to have development potentialities that make its development process easier, less expencive and shorter.

Two major factors affect the economic potentialities of an urban settee-ment, namely : the existing economic activitie and the availability of economic resources of this urban settlement.

5.1.2.1 Existing Economic Activities

The identification of the existing economic activities in middle size towns will cast some light on the following :

i) The main economic base of the town, according to the existing population distribution on basic economic activities.

i) The degree of urban maturity of the town, whether it is due to the increase of urban activities (services and industry) or only due to administrative reasons (still depending mainly upon agriculture as the main economic base).

1/ Sabbour Associates et. al., The Planning of Sadat City - Status Report 1, Cairo, September, 1976.

iii) Directions of future economic development, in order to be based on realistic economic situation.

Table '5-1' illustrates the middle size towns' active population distribution according to main economic activities. Fig.'5-4', indicates this population distribution in relation to the average total distribution of middle size towns' population.

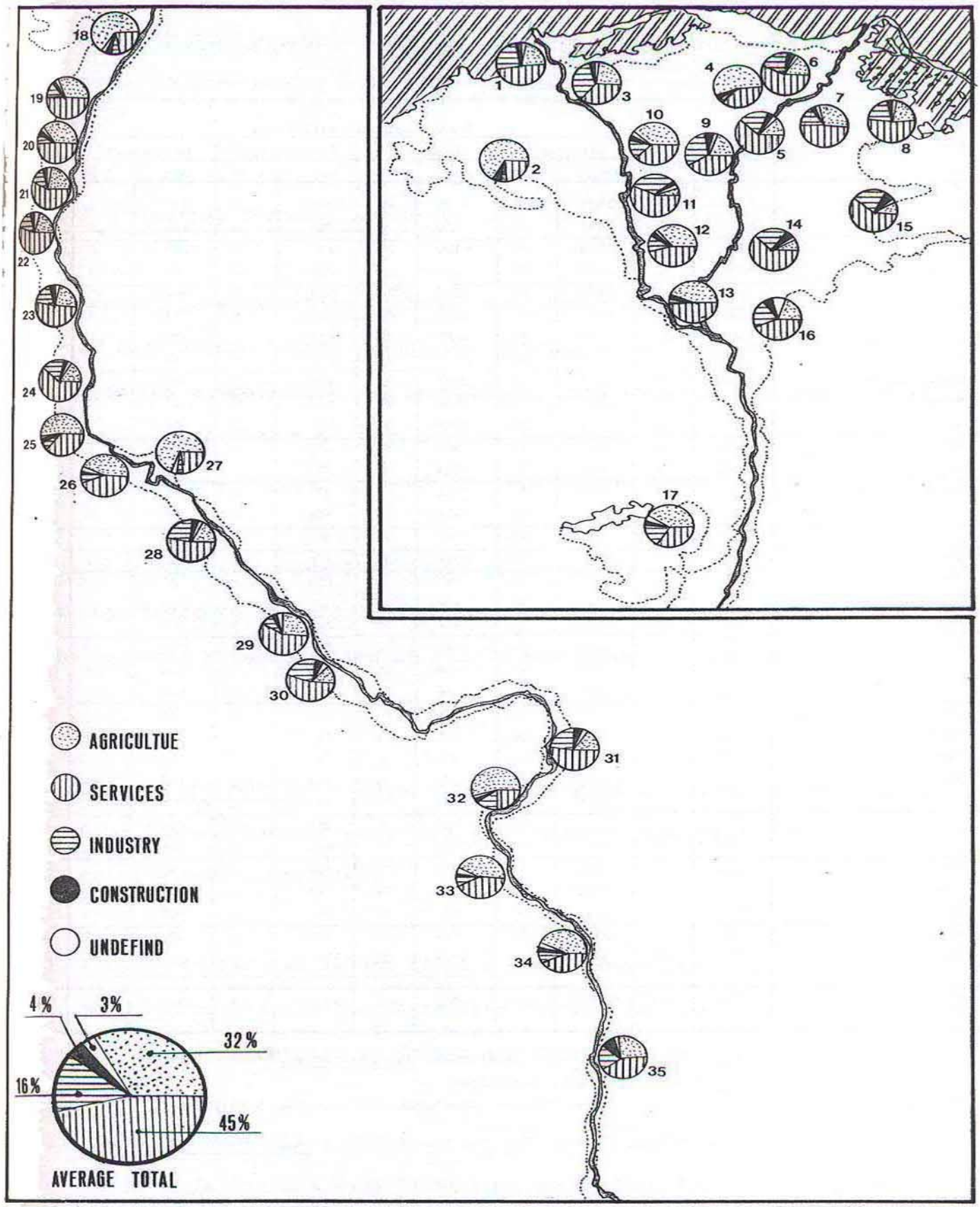
Some remarkes could be pointed out on table '5-1' and Fig '5-4', including :

i) 30% of middle size towns still depend upon agriculture . the percentage of population working in agriculture sector to total active population is ranged between 72.0% (ABNOUB) to 4.0% (KAFR EL-ZAYAT), the average is 32.0%.

ii) Services represent the main economic activity in the majority of middle size towns (63.0%), they considered as administrative centres for the surrounding rural areas. The percentage of population working in service sector is ranged between 70.0% (MENIA EL-KAMH) to 19.0% (Bosh , the average is 45.0%.

iii) Industry is the main economic base in only one town, FOWA (37.0% population working in industry), while it is ranked the second activity in eight towns. Industry accommodates only 3.0% of active population in some towns (ABNOUB), the average is 16.0%.

iv) Towns that mainly depend upon industry or services have achived higher degrees of urban maturity than those still depending upon agricult



MIDDLE SIZE TOWNS' POPULATION DISTRIBUTION ACCORDING TO BASIC ECONOMIC ACTIVITIES

Fig. No : 5_4

Table '5-1', [1] Middle Size Towns' Population Distribution According to Main Economic Activities, 1976 ' persons over 6 years old '

Town	Basic Economic Activities										Total Populat
	Agriculture [2]		Services [3]		Industry		Construction		Un-defined		
	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.	%	Pop.
Rosetta	2419	21	5499	46	3231	27	440	4	210	2	11799
Hosh-Isa	8060	68	2892	24	518	4	283	2	135	1	11888
Fowa	2720	24	3803	34	4106	37	230	2	307	3	11166
Biyala	6072	55	3465	32	924	8	299	3	87	1	10947
Talkha	1047	11	5670	58	2327	24	521	5	142	1	9707
Sherbien	1783	21	5110	60	1220	14	421	5	116	1	8550
Dekernes	3449	33	5274	50	1485	14	231	2	135	0.1	10564
Manzala	2888	23	6501	51	2373	19	637	5	267	2	12666
Semmenoud	1780	19	4007	42	3039	22	426	5	180	2	9432
Basyoun	3534	42	3228	38	1238	15	443	5	70	1	8513
Kafr El-Zayat	423	4	7079	59	3799	32	561	5	155	1	12017
Tala	2990	36	4071	49	879	11	214	3	125	2	8279
Ashmoun	5183	46	1387	39	1384	12	279	2	133	1	11366
Menia El-Kamh	643	7	6179	70	1522	17	377	4	142	2	8862
Faqus	861	9	6006	66	1634	18	489	5	151	2	9141
Khanka	1326	19	3183	45	1267	18	490	7	767	11	7033
Senoures	5426	43	3923	31	2558	20	315	2	437	3	12657
Bosh	8544	71	2312	19	892	7	265	2	70	0.5	12083
Biba	4580	29	4763	54	960	11	344	4	172	2	8625
Fashn	4993	33	4485	50	986	11	341	4	156	2	8961
Maghagha	2924	23	5865	60	1160	12	295	3	294	3	9828
Beni Mazar	1872	19	5492	56	1468	15	358	4	565	6	9755
Fikriya	1765	22	4064	51	1098	14	240	3	294	4	7961
Dayrout	1415	18	4938	63	1118	14	201	3	119	2	7836
Quesia	4589	52	3092	36	815	9	180	2	89	1	8458
Manfalout	4657	43	4877	45	984	9	285	3	98	0.7	10698
Abnoub	7746	72	2466	23	375	3	118	1	126	1	10823
Abu-Tig	1775	19	5024	53	2211	23	314	3	141	1	9460
Tema	2309	25	5405	59	737	8	354	4	296	3	9099
Tahta	1930	16	6451	55	2457	21	655	6	296	2	11789
Qus	1396	17	4303	54	1571	20	631	8	119	1	8020
Armant	6208	56	2400	22	1957	18	244	2	247	2	11056
Esna	3861	47	3790	42	881	10	363	4	148	2	9043
Edfo	3724	42	3724	42	879	10	290	3	307	3	8924
Kom-Ombo	3156	28	4405	40	2487	22	771	7	305	3	11124
Average Total	113259	32	158119	45	56523	16	12635	4	7949	3	3-9791

1/ Central Agency for Public Mobilization and Statistics, General Census, Cairo, 1976

2/ Includes agriculture, hunting and mining activities.

3/ Includes public services, trade, transportation, insurance and financial activities

4/ Percentage of total population over 6 years old.

as their main economic base. In addition, the development process would be more easier and faster to the first group.

5.1.2.2 Potential Economic Resources

Economic potentialities include many factors, such as : existing economic activity that allows future expansion, tourism potentialities, locational advantages for establishing new industries, good location on nodal transportation links or sea shores or even near to land reclamation projects that allows the town to act as a central place for surrounding areas.

Having any of the previous types of economic potentialities would be of great importance to any middle size town to start its development stages. Some of the economic potentialities of middle size towns can be summarized as follows :

i) ROSETTA and MANZALA : These towns have good locations on the Mediterenian Sea and Manzala Lake that give them potentialities for fishing and recreational activities.

ii) TALKHA, KHANKA and KAFREL ZAYAT : These towns have existing industrial base represented in the fertelizer factory in Talkha, and several light and medium industries in Khanka and Kafr El-Zayat.

iii) FAQUS amd HOSH-ISA : The location of these towns near the reclamaited lands in Salhia and Wadi El-Natroun gives them the opportunity to be service centres for these areas.

iv) Qus, ARMANT and ESNA : There are sugar-cane refineries located in these towns on which several light industries could be based.

v) EDFO and KOM OMBO : These towns have great tourism potentialities in addition to the sugar-cane refineries located there.

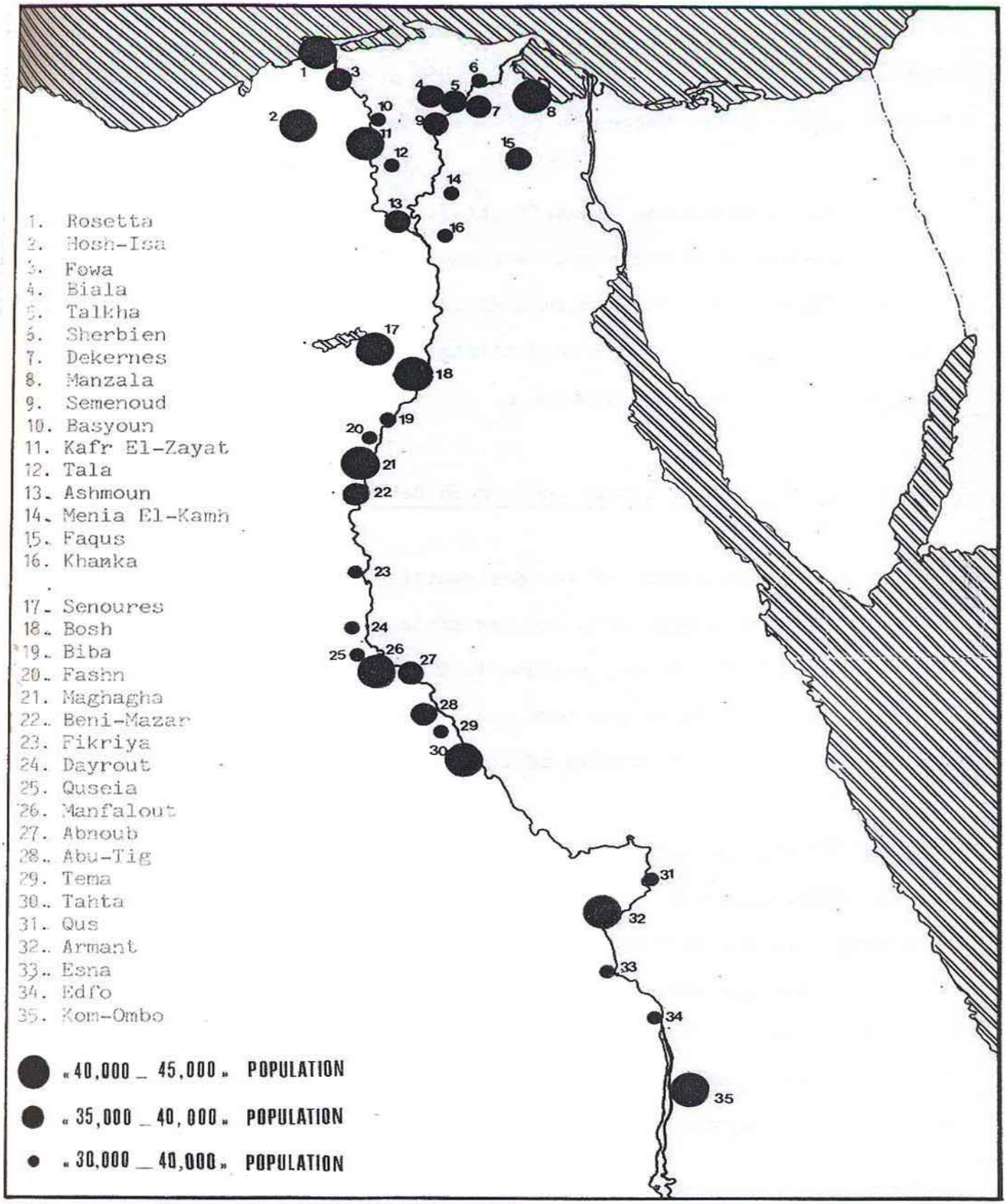
5.1.3 Population

As mentioned previously, one of the urgent needs of Egypt is to redistribute its population rather evenly throughout the country, taking into consideration all existing urban settlements and the proposed mew urban centres. Population size, average annual population growth rate and population absorption capacity of different middle size towns are important factors that help in forecasting the future capacities of these towns. Development programs should be directed towards those having possible increas of own population absorption capacity than those towns that already have reached their maximum capacities.

The impact of the existing and future population on the development of middle size towns is briefly discussed in the following sections ..

5.1.3.1 Population Size

Population size may be used as a true indicator of the degree of efficiency of the social and physical infrastructure facilities necessary to initiate the development process in any town. The greater the population size of a town is, the easier will be the start for the development process



POPULATION SIZE

Fig. No.: 5-5

and the less will be the costs of different infrastructure facilities. On the other hand, population size is an indicator of the availability of the necessary labour-force needed to different development programs in these towns

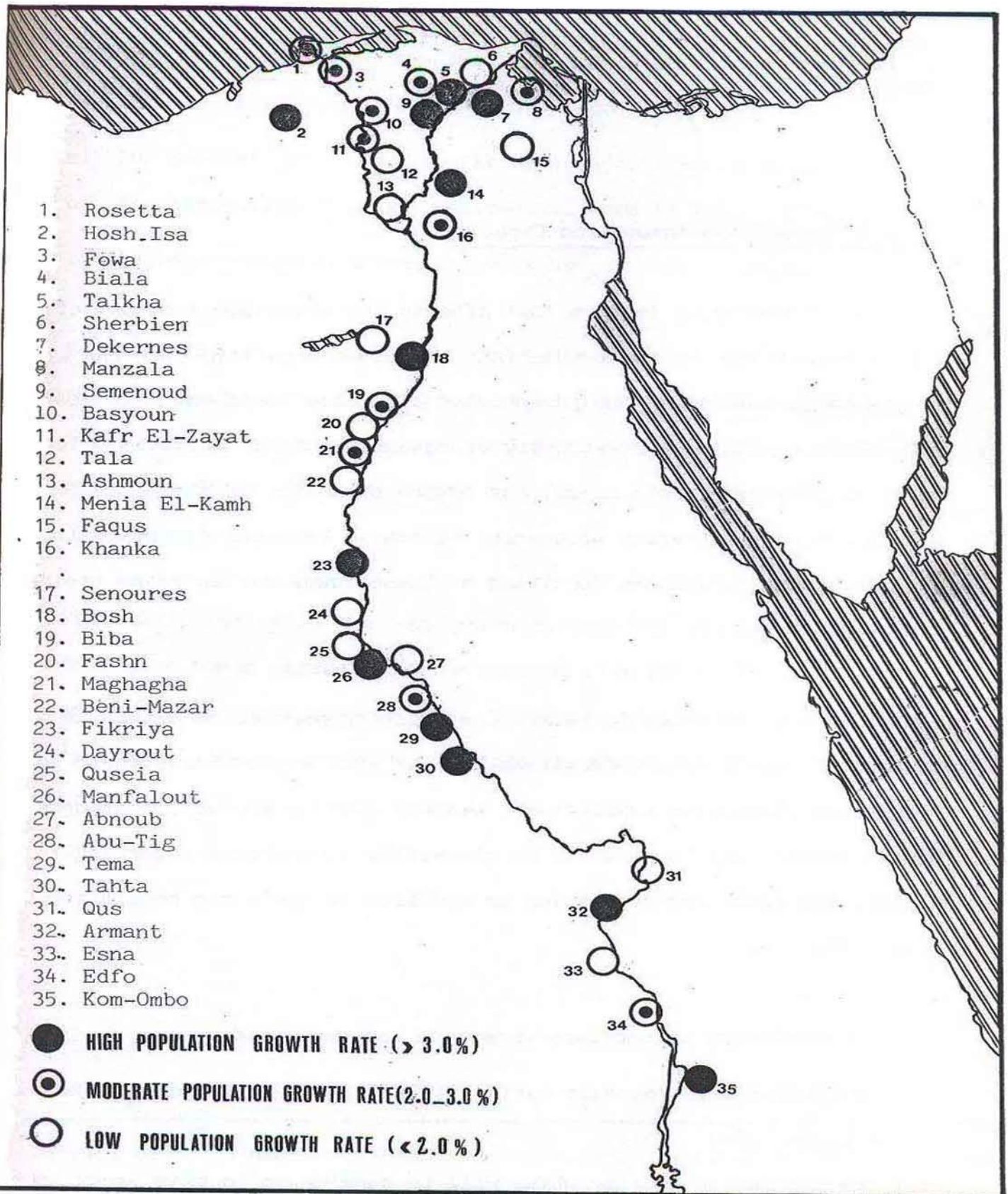
Fig. '5-5', shows the classification of middle size towns according to their population size. There are 14 towns of relatively small population size (30,000- 35,000) inhabitants.In addition, there are 10 towns of medium population size (35 ,000 - 40 ,000 inhabitants), and 11 towns of large population size (40,000 - 45,000 inhabitants).

5.1.3.2 Average Annual Population Growth Rate

This is an indicator of the desirebility of the towns as an attractive centre for people to settle in and immigrate to, (regardless of the reasons: physical, social or economic reasons). The higher is the average annual population growth rate of the town than its average natural increase rate, the greater is the desirability of the town, (the converse is also true).

Fig. '5-6', indicates the classification of middle size towns according to their average annual growth rates (1960 - 1976), in comparison to the average natural increase rate of Egypt in 1976.[1/] It clearly shows the effect of out-migration upon population growth rates of the majority of middle size towns in Upper Egypt, which are generally lower than that of other towns in Lower Egypt. Furthermore, the majority of those towns have experienced an average annual population growth rates lower than the averag

1/ Due to lack of historical data about the natural increae rate of each of the middle size towns, average natural increase rate of total Egypt in 1976 (2.47%) has been used for comparison with average annual population growth rate of each town (1960 - 1976).



AVERAGE ANNUAL POPULATION GROWTH RATE , "1960 _ 1976"

Fig. No.: 5_6

natural increase rate of Egypt in 1976[1/], that means a net loss of population through out-ward migration of these towns.

5.1.3.3 Population Absorption Capacity

One of the major factors that affects the development of any of the middle size towns, is its population absorption capacity. With the exception of few towns located on the peripheries of arable lands and have possible horizontal expansion, the majority of towns are within cultivated lands. In order to preserve arable lands, any future expansion of these towns must be within its administrative boundaries (cordon). Vertical expansion through increasing the population densities of these towns may increase their absorption capacities.

This section tries to relate the existing population densities of middle size towns, their future densities by year 2000 and estimate their possible population absorption capacities (whether plus or minous). Throughout the study, middle size towns would be classified into groups according to their ability for absorbing population in addition to their own population by the year 2000.

The following assumptions were made and respected :

i) Population will increase during (1976 - 2000) in the same growth rate between (1960 - 1976).

ii) The population density which will be considered in this study is the gross residential density[2/]

1/ For more details, refere to Appendix B.

2/ Cross residential density =

$$= \frac{\text{Total population}}{\text{Total areas used for residential, sevices and roads}}$$

iii) A sample of 16 towns (8 towns in each Upper and Lower Egypt) will be used for estimating average figures for :

a) The percentage of total built up area to overall area [1/]

b) The percentage of gross residential area to built up area [2/]

iv) Ideal gross residential density must not exceed 150 person/ feddan. [3/]

Table (5-2), provides a sample of middle size towns, through which it is tried to estimate the average gross residential area as a percentage of the overall area of middle size towns which is necessary for calculating gross residential densities of these towns.

Fig (5-7), indicates the population absorption capacities of each of the middle size towns regarding their exiting size of population (1976),& their expected population size in year 2000. Their net population absorption capacities (optimum) are estimated taking into consideration that the optimum Gross residential densities of these towns is 150 person / feddan by the year 2000.

1/ Overall area : Total area within the administrative boundaries of the town.

2/ Gross Residential Area : Total areas used for residential, services and roads.

3/ The By law of the Physical Planning Low No, 3, 1982 has determinated gross residential densities of Existing urban settlements by not more than 150 person/feddan.

Table '5-2'[1/], Overall, Built-Up and Gross Residential Areas of Diffent Types of Middle Size Towns and Their Per-Capita Land Consumption of Gross Residential Area.

Town	Population 1976	Population 1980	Overall[2/] Area	Built-Up Area		Gross Residential Area		Per Capita Land Consumption (Gross)
				feddan	%[3/]	feddan	%[4/]	m^2/ person
Talkha	37,048	44,561	602	262	44%	212	82 %	20
Manzala	43,749	48,124	421	565	134%	489	87 %	43
Sherbien	31,837	34,269	371	341	92%	293	86 %	36
Kafr El-Zayat	49,059	49,619	3215	217	7%	156	72 %	13
Basyoun	33,988	33,988	2180	211	10%	186	88 %	23
Menia El Kamh	33,579	40,523	388	220	57%	214	97 %	22
Ashmoun	39,494	42,527	407	217	53%	208	96 %	21
Biyala	38,787	43,100	952	481	51%	441	92 %	43
Average total	37,510	42,089	1068	314	56%	275	88%	23.0 m^2 / person
Senoures	42,022	44,964	614	225	37%	222	99 %	21
Bosh	40,151	46,800	933	312	33%	306	98 %	27
Biba	33,074	36,937	916	219	24%	-	-	
Maghagha	40,802	44,425	1612	336	21%	289	86 %	27
Beni Mazar	39,373	41,877	783	323	41%	-	-	
Fikriya	33,498	40,388	1061	177	17%	129	73 %	13
Qus	33,139	35,618	619	162	26%	149	92 %	18
Esna	34,186	36,784	462	171	37%	171	100%	20
Average Total	37,031	40,974	875	241	30%	211	91%	21.0 m^2 / person

Built up area and Gross residential area of middle size towns are based on Graduated Projects of [illegible] Department, El Azhar University 1980.

Table '5-3', elucidates the population capacity of different middle size towns. It assumed that, the ideal gross residential density is 150 person/feddan. The average percentage of gross residential area to built up area (table '5-2') is used for estimating the population density of these towns in case of its expansion within their all boundary boundaries.

From table '5-3', the following remarks could be extracted :

i) The population absorption capacity could be almost doubled by the year 2000 if these towns expand only within their administrative boundaries but with gross residential density of 150 person/feddan.

ii) The majority of towns can absorb more population within their administratives due to their relatively low density. Only '10' towns have population densities more than 150 person/feddan by the year 2000 (8 towns in Lower Egypt and 2 towns in Upper Egypt).

iii) Towns have population densities more than 150 person/feddan will be a source of out-migration towards other urban settlements otherwise these towns will expand over the surrounded arable lands in order to absorb the additional population within the determined population density.

iv) The majority of middle size towns have experinced low population densities in 1976. ROSETTA and FOWA were the only two having gross residential densities over 150 person/feddan in 1976, this means that they already expanded out their administrative boundaries.

v) The possible absorption capacity is a major factor in developing middle size towns. the higher the absorption capacity of the town is, the greater

Table '5-3', Middle Size Towns' Population Absorption Capacities by year 2000

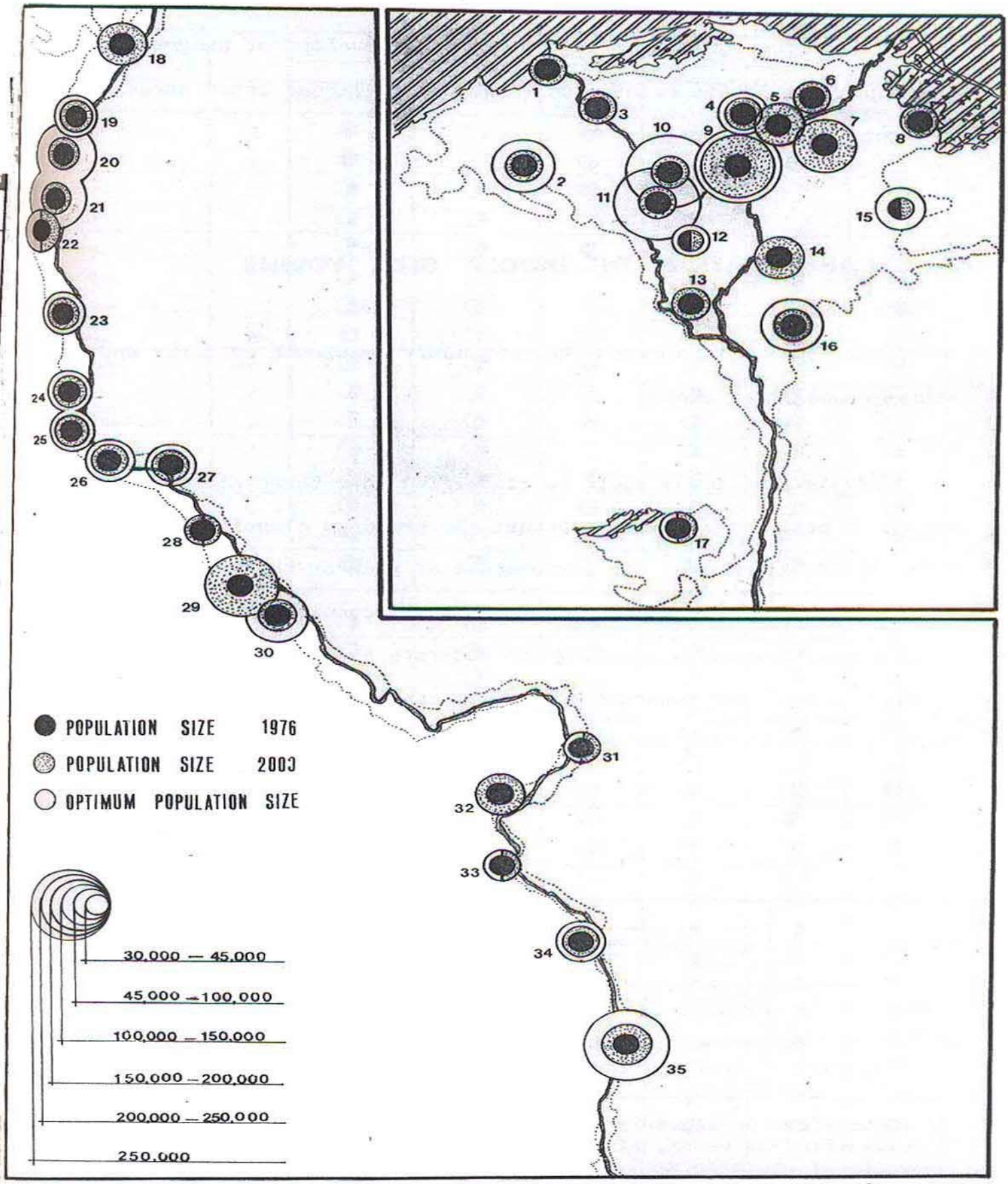
Town	Population '1976'	Population Growth Rate 1976-2000	Population 1/ '2000'	Overall Area 'Feddan'	Gross Residential 2/ Area 'Feddan'	Population 3/ Density 1976	Population Density 2000	Population Absorption Capacity
Rosetta	42,952	2.27	73.7	155	136	316	542	- 53,1
Hosh-Isa	42,257	2.62	78.7	1233	1085	39	73	+ 84,5
Fowa	37,809	2.12	62.5	69	61	620	1025	- 53,2
Biyala	38,787	2.78	75.0	952	838	46	89	+ 50,1
Talkha	37,048	5.07	122.2	602	530	70	230	- 42,7
Sherbien	31,837	1.91	49.9	371	326	98	153	- 1,.
Dekernes	38,433	7.0	194.8	1050	924	42	211	- 56,2
Manzala	43,749	2.5	79.6	421	370	105	215	- 24,9
Semmenoud	35,416	7.95	222.0	1937	1705	21	130	+ 33,7
Basyoun	30.532	2.83	59.6	2180	1918	16	31	+ 228,1
Kafr El Zayat	45,059	2.53	82.3	3215	2829	16	29	+ 342,7
Tala	30,345	1.62	44.6	652	574	53	78	+ 41,3
Ashmoun	39,494	1.92	62.3	407	358	110	174	- 8,.
Menia El-Kamh	33,579	5.17	112.7	388	341	98	330	- 61,5
Faqus	39,083	0.5	44.0	988	869	45	51	- 86,2
Khanka	32,381	2.44	57.8	1226	1079	30	45	+ 104,3
Total 'Lower Egtpt'	598,761		1,421,700					- 669,7
Senoures	42,022	1.75	63.7	614	559	75	114	- 30,1
Bosh	40,151	4.14	106.4	933	849	47	125	+ 20,2
Biba	33,074	2.92	65.8	916	834	40	79	+ 99,.
Fashn	33,506	1.59	48.9	1785	1624	20	30	+ 194,7
Nagnagha	40,802	3.22	69.1	1621	1475	28	47	+ 158,2
Beni-Mazar	39,373	1.59	57.5	783	713	55	81	+ 49,.
Fikeiya	33,498	5.15	111.8	1061	966	35	116	+ 31,.
Dayrout	31.679	1.62	46.5	809	736	43	63	+ 63,2
Ouseia	31,421	1.93	49.7	881	802	39	62	- 20,.
Manfalout	41,126	2.31	71.1	866	788	52	90	+ 47,.
Abnoub	39,423	1.87	58.1	740	673	59	86	+ 42,.
Abu-Tig	35,959	2.51	65.3	669	609	59	107	+ 46,.
Tema	34,969	7.68	206.7	759	691	51	299	- 108,.
Tahta	45,242	3.08	93.6	1102	1003	45	93	- 56,.
Qus	33,139	1.87	51.6	619	563	59	92	- 32,.
Armant	42,257	4.00	108.2	664	604	70	179	- 71,.
Esna	34,186	1.9	53.7	462	420	81	128	+ 5,.
Edfo	34,858	2.08	57.2	738	672	52	85	- 43,.
KomOOmbo	44,531	4.56	129.8	4144	3771	12	34	- 435,.
Total 'Upper Egypt'	711,215		1,514,700					+ 1,233,.
Total (Egypt)	1,309,976		2,936,400					+ 1,5..

1/ Middle size towns' population by the year 2000 have been estimated by the authet.

2/ Gross residential area = Overall area X average percentage of gross residential area to built up area for each of Upper and Lower Egypt.

3/ Gross residential density = $\frac{\text{Total population (1976 or 2000)}}{\text{Gross residential area}}$

4/ Net population absorption capacity = population could be absorbed in the tow if the gross residential area considered to be 19 person/feddan - town population year 2000.



MIDDLE SIZE TOWNS' POPULATION ABSORPTION CAPACITY, UP TO YEAR 2000

Fig. No: 5_7

is its opportunity for attracting more development programs, through whi it can play an active role in solving the imbalanced urban structure problems of Egypt.

5.2 CLASSIFICATION OF MIDDLE SIZE TOWNS

Table '5-4', illustrates the previously mentioned criteria and their relative weighting scale.

Middle size towns could be classified into three classes according their degree of active performance against the proposed classification criteria. Table '5-5', summarizes the performance of each of the middle size towns against the previous criteria (table '5-4'), considering that ● expresses th highest positive score, while ◑ is moderate score and ○ is expresses the negative score. Two moderate scores are considered to express one positive score when evaluating the performance of different towns.

Table '5-4', Relative Weighting - Assesment Criteria

Symbole		Classification Criteria					
	Geographical location	Distance from large cities	Existing[1/] economic activities	Potential economic resources	Population size	Population growth rate	Popula absorp capac
● 'Positive'	Advantage	Far	Urban	High	High	Large	High
◑ 'Neutral'	Moderate	Moderate	Semi-urban	Medium	Moderate	Medium	Moder
○ 'Negative'	Non-advantage	Low	Rural	Low	Low	Small	Low

1/ If services or industry are the main economic activities it could be classified as urban, if agriculture is the basic activity it would be rur while it would be semi rural if industry comes in the second rank.

2/ If the population density of the town by the year 2000 is lower than 10 person/feddan it has high absorption capacity., if it is ranged between 100-150 person/feddan it has mederate absorption capacity, while it has l capacity if the town's population capacity is over 150 person/feddan.

Table '5-5', The Performance of Middle Size Towns Against Different Classification Criteria.

Town	Class	Classification Criteria						
		Geographical Location	Distance from Large Cities	Existing Economic Activities	Potential Economic Resources	Population Size	Population Growth Rate	Population Absorption Capacity
Rosetta	A	●	○	●	●	●	○	◑
Hosh-Isa	B	●	○	◑	○	●	○	●
Fow	C	◑	◑	●	◑	○	○	◑
Biyala	C	◑	◑	◑	◑	○	○	●
Talkha	B	◑	◑	●	○	○	●	◑
Sherbien	C	◑	○	○	◑	●	◑	◑
Dekernes	C	◑	◑	○	◑	○	●	◑
Manzala	B	●	◑	○	●	◑	○	◑
Semmenoud	C	◑	◑	●	◑	○	●	○
Basyoun	C	◑	◑	◑	◑	◑	○	●
Kafr El-Zayat	B	◑	◑	●	●	●	○	●
Tala	C	◑	◑	○	◑	◑	◑	●
Ashmoun	C	◑	◑	◑	◑	○	◑	◑
Menia El Kamh	C	◑	◑	●	◑	◑	●	◑
Faqus	A	●	○	●	●	○	◑	●
Khanka	B	●	◑	○	●	◑	○	●
Senoures	C	◑	◑	◑	◑	●	◑	○
Bosh	C	◑	◑	◑	◑	●	●	○
Biba	C	○	◑	○	◑	◑	○	●
Fashn	C	○	○	○	◑	◑	◑	●
Maghagha	B	○	●	○	◑	●	○	●
Beni Mazar	B	○	●	○	◑	○	◑	●
Fikriya	C	○	◑	○	◑	◑	●	○
Dayrout	B	○	●	○	◑	●	◑	●
Quseia	B	○	●	◑	◑	●	◑	●
Manfalout	B	○	○	○	◑	○	○	●
Abboub	C	○	◑	◑	◑	◑	◑	●
Abu-Tig	C	○	◑	○	◑	◑	○	○
Tema	C	○	○	○	◑	◑	●	◑
Tahta	B	○	◑	●	◑	●	●	●
Qus	B	○	◑	●	○	◑	◑	●
Armant	B	○	◑	◑	○	●	●	◑
Esna	C	○	●	◑	○	◑	◑	○
Edfo	B	○	●	◑	●	◑	○	●
Kom Ombo	A	○	●	○	●	●	●	●

Fig '5-8', shows the spatial distribution of middle size towns according to their class of active behaviour towards the classification criteria. The features of these classes could be summarized as follows :

. i) Class A: Includes towns of highest positive performance against the classification criteria (having at least a total positive score of 5 against the 7 criteria). These towns are : ROSETTA, FAQUS and KOM OMBO.

ii) Class B: Includes towns of nutral active performance against the classification criteria (having at least a total oositive score of 3 against the 7 criteria). These towns are : HOSH-ISA, TALKHA, MANZALA, KAFR EL ZAYAT, MAGHAGHA, BENI-MAZAR, DAYROUT, QUSEIA, MANFALOUT, TAHTA, QUS, ARMENT, EDFO.

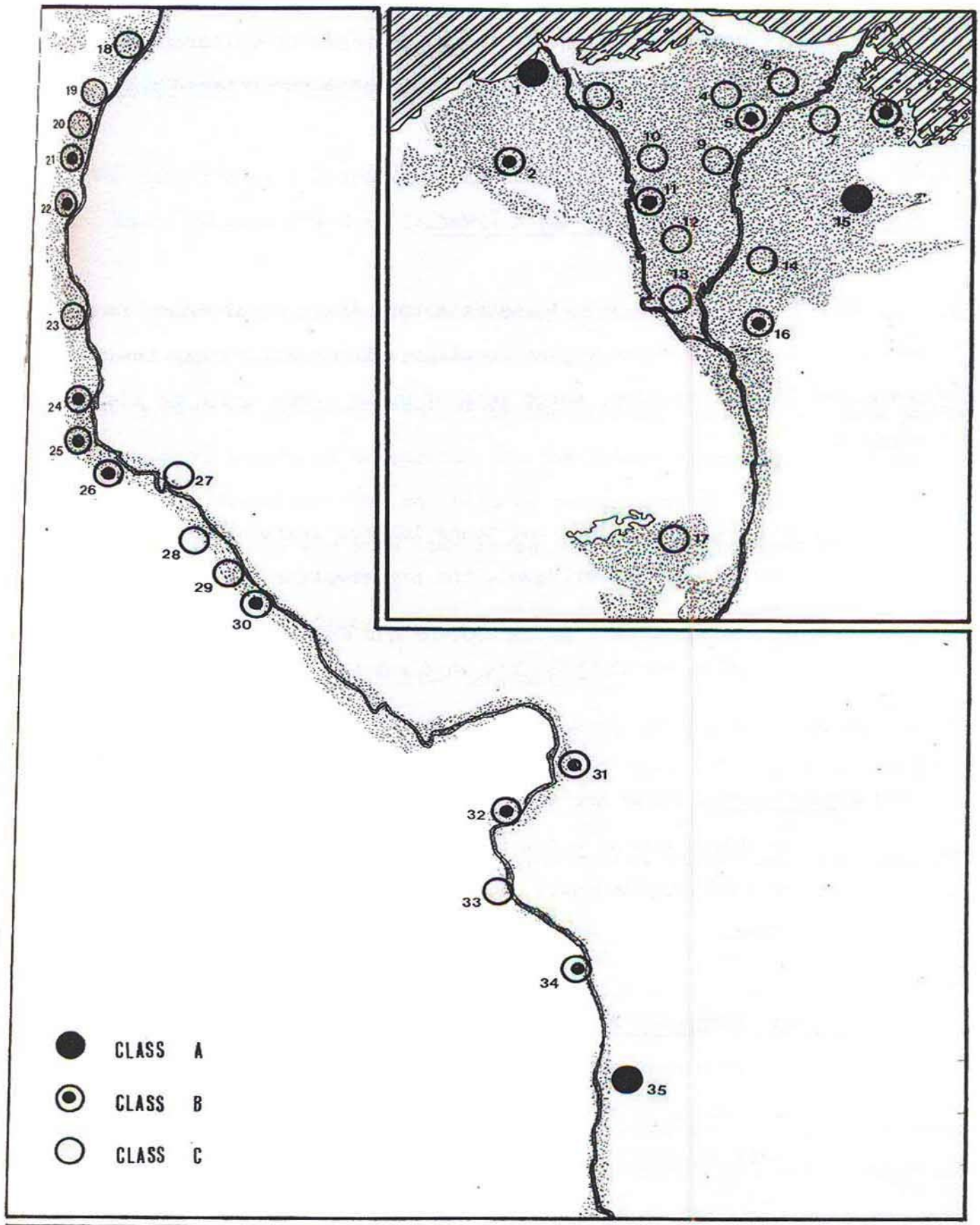
iii) Class C: Includes towns of negative performance against the classification criteria (having a score less than 3 against the 7 criteria). These are the rest 17 middle size towns.

5.3 TYPES OF LAND USES OF MIDDLE SIZE TOWNS

This section of the study tries to provide an overview of land uses of some of the middle size towns. 16 towns are presented (8 towns in each of Upper and Lower Egypt) in this study through which it is tried to identify

---

1/ Due to the lack of official up-dated maps of land uses of middle size towns, this section of the study is mainly based on Graduated projects of Planning Department - Faculty of Engineering - El Azhar University and has been modified by the available official data could be obtained.



SPATIAL DISTRIBUTION OF MIDDLE SIZE TOWNS ACCORDING TO THEIR CLASSES

Fig. No : 5_8

the various forms of these towns, the percentages of different land uses and the main features that characterizing the land uses of these towns.

5.3.1 Urban Forms of Middle Size Towns

Figs. (5-9' and '5-10', illustrate that the general urban form of the towns is directly related to the location determinats. Among the 16 towns presented in this section, three sets of urban forms could be identified, these are :

i) Compact Form : These are the towns located inside arable lands whether in Upper or Lower Egypt. The preservation of arable land is the main factor that affects this compact form. BASYOUN, BIYALA ASHMOUN and SENOURES are good examples for such compact form.

ii) Linear Form : These are the towns located either on the peripheries of arable lands or along side the river Nile or sea shores that extend longitudinaly. ESNA and FIKRIYA are good examples for this form.

iii) Informal (Organic) Form : Towns located on a major transportation line or on a natural dominant feature (the River Nile) are formed according to the shape of these major features. SHERBIEN, KAFR EL-ZAYAT and MENIA EL-KAMH are examples for this form.

5.3.2 Major Characteristics of Land Uses of Middle Size

The main features characterizing the land use patterns of middle size towns, could be summarized as follows, Figs '5-9' and '5-10' :

i) The existence of railway line passing through the towns and divides it into two sections, thus creates a dangerous barrier.

ii) The spread of water-ways inside or surrounding the built-up area which represents a natural constraint for the future extension of the town.

iii) Land uses are mixed together with no clear pattern and critical conflicting uses are some time mixed (industry / housing and cemeteries/ housing).

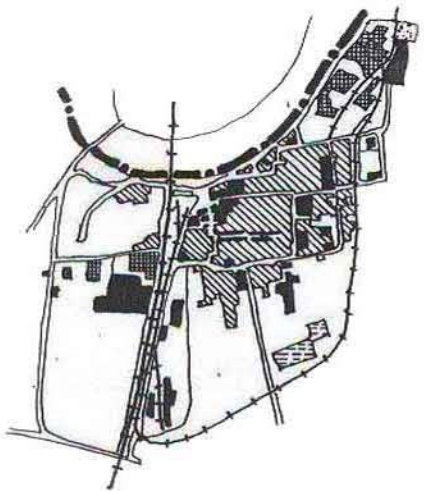
iv) The majority of towns are surrounded by arable lands whether inside or out side their administrative boundaries.

v) There are no vacant lands inside the towns, this means that any extension of these towns would represent a real threat for arable land if not being controlled.

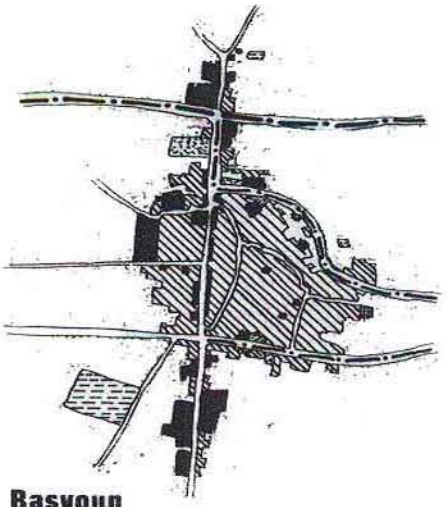
vi) There are almost no recreation or open spaces within the land uses of these towns.

5.3.3 Comparative Land Use Study

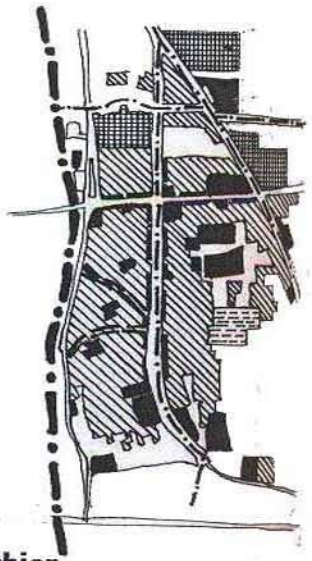
Table '5-6', provides a comparative brief analysis for major land uses in a sample of 14 middle size towns '8 towns in Lower Egypt and 6 towns in Upper Egypt'. This table illustrates the area of each land use, the built-up area and the administrative boundaries of these towns in feddans. In addition, it elucidates the percentage of different land uses to built-up area



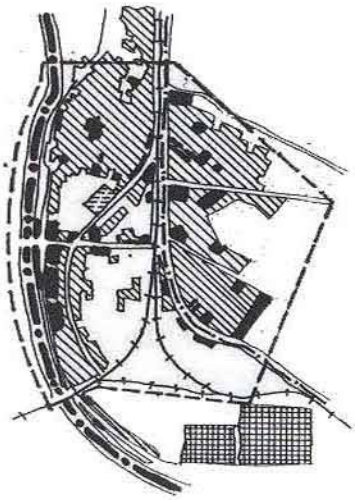
Kafr El zayat
Gharbia



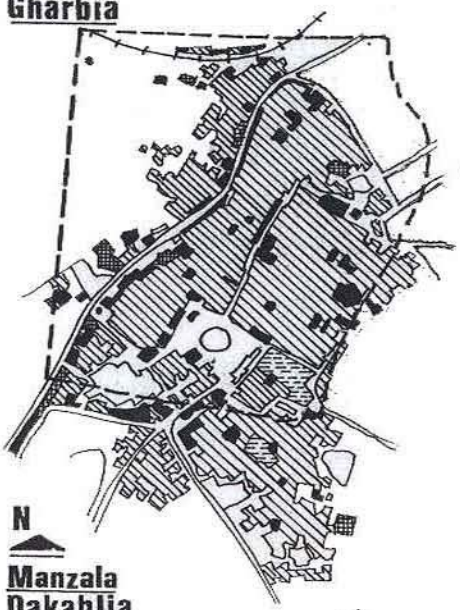
Basyoun
Gharbia



Sherbien
Dakahlia

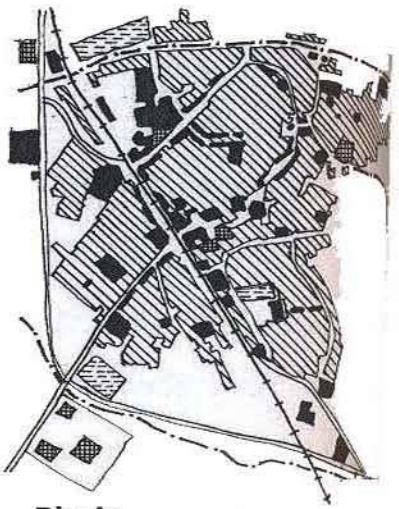


Talkha
Dakahlia

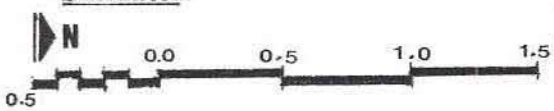


N

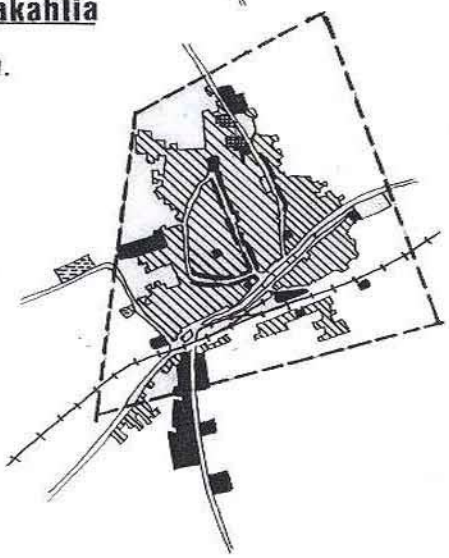
Manzala
Dakahlia



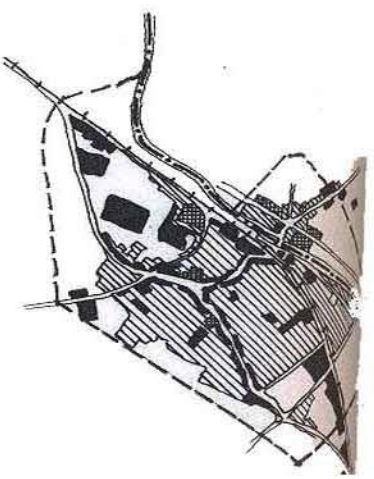
Biyala
Kafr El_Shiekh



Residential.
Industry.
Services.
Vacant lands.
Agriculture.
Cemeteries.
Roads.
Railways
Canals
Administrative Boundaries



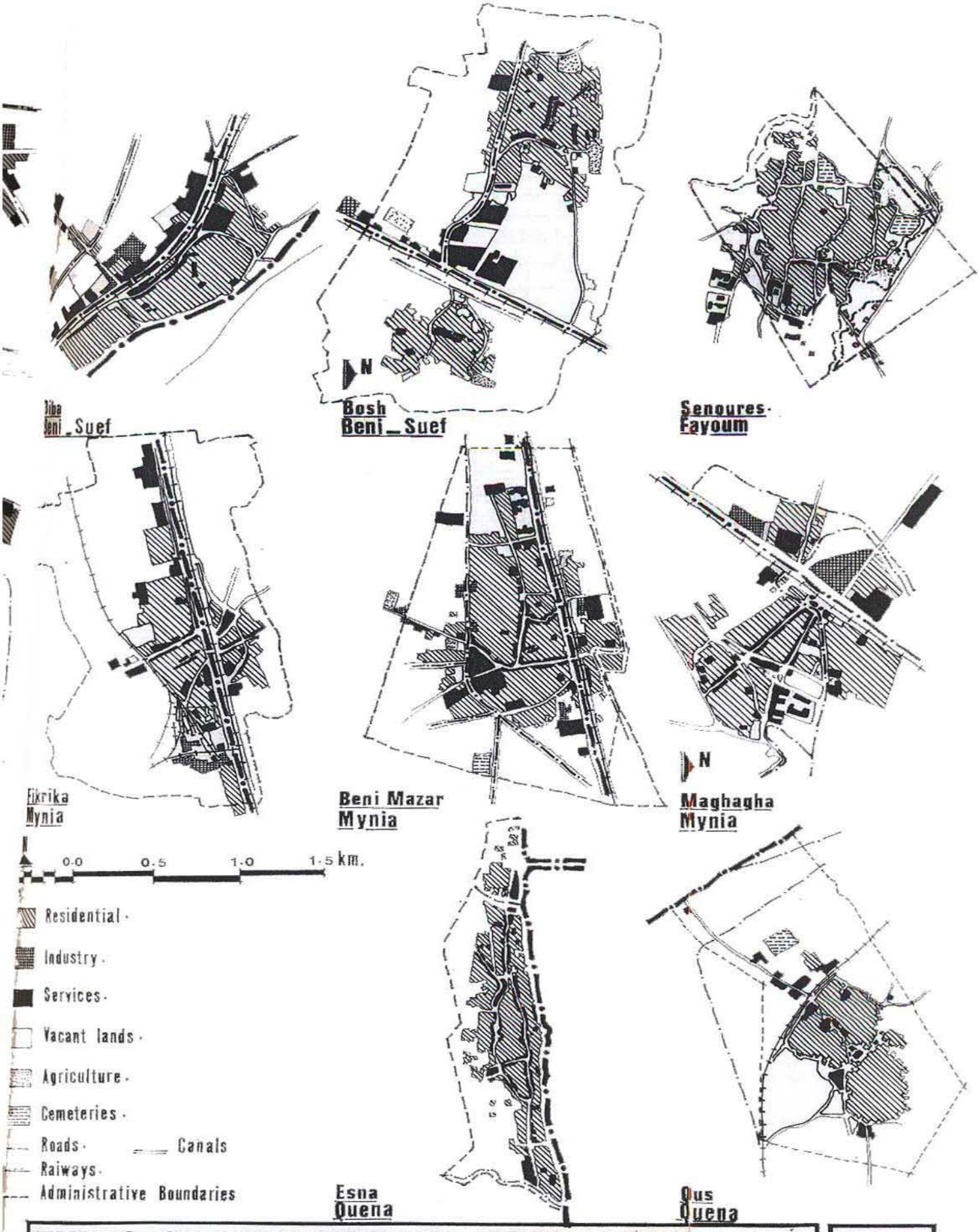
Ashmoun
Menoufia



Minya-El kamh
Sharkia

TYPES OF LAND USES OF MIDDLE SIZE TOWNS, "LOWER EGYPT".

Fig. No.
5_9



TYPES OF LAND USES OF MIDDLE SIZE TOWNS, "UPPER EGYPT".

Fig.No.: 5_10

Table '4-6', Comparative Analysis for Land Uses in Some of Middle Size Towns

Town	Aspect	Land Uses						Built up Area	Overa Area
		Residential	Industry	Services	Vacant lands	Roads	Cemeteries		
Talkha	Area 1/	112.7	15.7	41.4	31.4	59.0	1.3	262	
	% 2/	43.0	6.0	16.0	12.0	22.5	0.5		
	Percapita 3/	10.6	1.5	4.0	3.00	5.6	0.1		
Manzala		314.2	17.0	70.6	50.9	98.9	8.5		
		56.5	3.0	12.5	9.0	17.5	1.5		
		27.9	1.5	6.2	4.4	8.6	0.7		
Sherbien		147.0	4.1	69.2	34.1	78.1	8.5		
		43.1	1.2	20.3	10.0	22.9	2.5	341	
		18.0	0.5	8.5	4.2	9.6	1.1		
Kafr El-Zayat		80.3	49.9	30.4	9.8	45.6	1.1		
		37.0	23.0	14.0	4.5	21.0	0.5		
		6.8	4.2	2.6	0.8	3.9	0.1		
Basyoun		103.4	2.1	48.5	10.6	33.8	12.7		
		49.0	1.0	23.0	5.0	16.0	6.0	211	
		12.8	0.3	6.0	1.3	4.2	1.6		
Menia El -Kamh		116.4	2.4	45.1	-	52.8	3.3		
		52.9	1.1	20.5	-	24.0	1.5		
		12.1	0.3	4.7	-	5.5	0.3		
Ashmoun		138.9	1.1	30.4	4.3	39.1	3.3		
		64.0	0.5	14.0	2.0	18.0	1.5		
		13.7	0.1	3.0	0.4	3.9	0.3		
Biyala		267.9	36.1	84.2	-	89.0	3.9		
		55.7	7.5	17.5	-	18.5	0.8		
		26.1	3.5	8.2	-	8.7	0.4		
Average Total in Lower Egypt		160.7	16.1	48.0	17.6	62.0			
		50.2	5.4	17.2	5.3	20.1			
		16.0	1.5	5.4	1.8	6.3			
Senoures		188.2	1.3	20.9	1.3	40.3			
		74.7	0.5	8.3	0.5				
		17.6	0.1	2.0	0.1	3.8			
Bosh		157.6	1.9	77.4	3.4	71.8	-		
		50.5	0.6	24.8	1.1	23.0	-		
		14.1	0.2	6.9	0.3	6.4	-		
Maghagha		169.3	30.2	42.3	16.80	77.3	-		
		50.4	9.0	12.6	5.0	23.0	-		
		16.0	2.9	4.0	1.6	7.3	-		
Fikriya		76.1	17.0	22.0	15.9	46.0	-		
		43.0	9.6	12.4	9.0	26.0	-		
		7.9	1.8	2.3	1.7	4.8	-		
Qus		101.7	0.5	20.7	5.2	27.5	6.3		
		62.8	0.3	12.8	3.2	17.0	3.9		
		12.0	0.1	2.5	0.6	3.3	-		
Esna		86.5	-	39.3	-	35.1	-		
		50.6	-	23.0	-	26.4	-		
		9.9	-	4.5	-	5.2	-		
Average Total 'Upper Egypt'		129.9	8.5	37.1	7.1	51.3	1.05		
		55.3	3.3	15.65	3.1	21.9	0.65		
		12.9	0.85	3.7	0.72	5.1	-		

1/ Area in Feddan.
2/ Percentage of each land use to the built-up area.
3/ Percapita land consumption in square meter.

and the per-capita land consomption of each of these uses in square meters.

5.4 ALTERNATIVE STRATEGIES FOR DEVELOPING MIDDLE SIZE TOWNS

Two main approaches are discussed in this section. The first approach deals with different middle size towns separately according to the various circumstances of each one in order to make full use of the existing and potential resources of each town to develop it. The second approach provides alternative spatial distributions for middle size towns ' growth centres concept or growth corridors concept ', that allow these towns to play an active role on the regional and national levels as well as to local level. The main objective of this approach is, to recommend a number of towns of high development potentialities that can play a role in solving the urbanization problem of Egypt.

5.4.1 The 1st Approach[1/], The Development of Various Middle Size Towns

The previously mentioned factors of classification criteria, could be grouped under two main items that affecting the development of middle size towns, namely : the development potentialities and the possible population absorption capacities of these towns. In applying the previous classification of middle size towns against the two major factors, the following could be pointed out :

1/ A general discussion for this approach is presented in this section. A detailed study for each town separately is needed to be carriedout for idetifying specific actions for developing each town.

i) Class A : These towns have the higher development potentialities and population absorption capacity (except ROSETTA) Relatively different policies have to be used in developing these towns.

ROSETTA : The unique location of the town has to be taken into consideration, and to concentrate on the development of certain types of manufacturing industries related to fishing and sea activities. On the other hand, the population density of the town is relatively high, its administrative boundaries should be replanned in order to make full use of its potentialities regarding the future expansion.

FAQUS : Development policies have to concentrate on agriculture projects to make use of the town as a nodal retail market for agricultural services and agro-industrial activities.

KOM-OMBO : Tourism potentialities have to be considered in the development of this town in addition to make use of the existence of its sugar cane refinery.

ii) Class B : In order to identify the possible policies could be applied to these towns, towns of class B could be grouped as follows:

Group 1 : Kafr El-Zayat, Khanka and Edfo , these towns have high potential economic resources and population obsorption capacity. The development of these towns is mainly based on industrial activities in general (tourism potentialities in Edfo can take part in this development together with industry).

Group 2 : Hosh-Isa, Maghagha, Beni-Mazar, Dayrout, Quseia, Manfalout, Tahta and Qus, are enjoing high population absorption capacity and limited economic resources. By improving the economic base oof some of these towns (Hosh-Isa and Qus[1/]) and by providing a sound economic base

1/ Please refere to section (5.1.2.2.), pp. 115

the other towns,[1/] it could be made full use of their high population absorption capacity.

Group 3 : TALKHA MANZALA and ARMANT have limited economic potentialities and no possible population absorption capacity. Large scale development programs should be avoided in these towns, and strict control growth should be devised and monitored, these towns may greatly expand on arable lands.

iii) Class C : These towns have limited economic resources, they can be grouped in two groups according to their population absorption capacity as follows :

Group 1 : BIYALA, BASYOUN, TALA, BIBA, FASHEN and ABNOUB, have possible absorption capacity but their development process would be difficult, more expensive and longer due to their limited development potentialties. Improving the infrastructure facilities of these towns may help in reducing the out-migration flow of-these towns and to keep their own population within their administrative boundaries.

Group 2 : FOWA, SHERBIEN, DEKERNES, SEMMENOUD, ASHMOUN, MENIA EL-KAMH, SENOURES, BOSH, FIKRIYA, ABU-TIG, TEMA and ESNA, have limited / no possible population absorption capacity and low development potentialties. Any future expansion of these towns would be on surrounded arable land and the development actions would 't be economic. A controlled growth plans for these towns are more appropirate than large scale development.

Naga Hammadie, is a good example for developing such type of towns. The Aluminium Complex, has been allocated there as a huge industrial economic base to subsidize the development process.

5.4.2 The 2nd Approach, Alternative Spatial Distributions

This section of the study attempts to illustrate some of possible alternative spatial distributions through which middle size towns can play a role in solving the urbanization problems of Egypt within a national or regional urban structure frame work.

Two alternatives are presented in this section. The first, relies upon the growth centres concept within which each of the recommended towns play its role as a growth pole for its sub region. The second, is based on the growth corridors concept through which each of the recommended towns has to be located on a well defined active axes of growth on the national level. The two alternatives only cover classes A and B towns (which are highly promising for development).

The two alternatives only cover classes A and B towns (which are highly promising for development).

4.2.1 Alternative A, 'Growth Centres Concept'

This is not the proper place for disscussing the growth centre theory, but it is necessary to generally investigate the definition and scope of such concept. The following may briefly clarify the concept :

' Growth pole theory provides the stimulating hypothesis that development is polarized in geographical space around nodes which we may call growth centre '.

(Moseley, M. 1974, pp.8)

. 'Growth centre, is a main centre at the regional level which, in addition to its function as a regional service centre, also provides a prosperous and reasonably diversified industrial structure. The centre should either be growing or shows potential for growth of economic activity, employment, population and income. Such a centre will, ceteris paribus, need to be above a certain population level, or if it is to enjoy self sustaining growth, be planned for such a level '.

(Allen and Hermansen, 1968,pp. 64)

' An urban centre of economic activity which can achieve self-sustaining growth to the point that growth is diffused out-ward into the pole region and eventually beyoned into less developed regions of the nation '.

(Nichols, 1969, pp. 193)

' An urban place of less than 250,000 population which acts as the vital heart of its development district '.

(Fox, 1966, pp. i)

' Growth centres are medium-sized, not too big and not too small, perhaps midway between 'core regions' and 'roral growth points' and enjoying some of the advantages of each '.

(Moseley, M. 1974, pp.12)

' To say that there is no clear object which may be unequivocally termed a 'growth centre' may seem a strange conclusion to begin a book on the subject. But it seems the only reasonable conclusion. Nevertheless, it may be usefull to give a working 'definition' which is made to measore for the task in hand, that of examining just what attributes really due accompany growth : " A towns which has recently experienced or is presently experiencing or is planned to experience rapid growth ". This definition begs most of the questions set out above and does so quite deliberately '.

(Moseley, M. 1974, pp.19).

From the previous definitions, it could be said, that a growth centre is, a medium sized urban entity which has to experience rapid growth in order to achieve the development objectives of the urban centre itself and its surrounding region.

' Generally speaking, growth centre policies, probably accounts for larger proportion of its population for being a middle cource between concentration and dispersal, efficiency and equity, growth and welfare '.[1/]

As mentioned previously, alternative A is based on the growth centre concept. This alternative attempts to identify a number of towns to act as growth centres, Among the previous 17 towns classified as class A & class I

1/ Moseley, M. Growth Centres in Spatial Planning, Pergamon Press, Oxford, 1974.

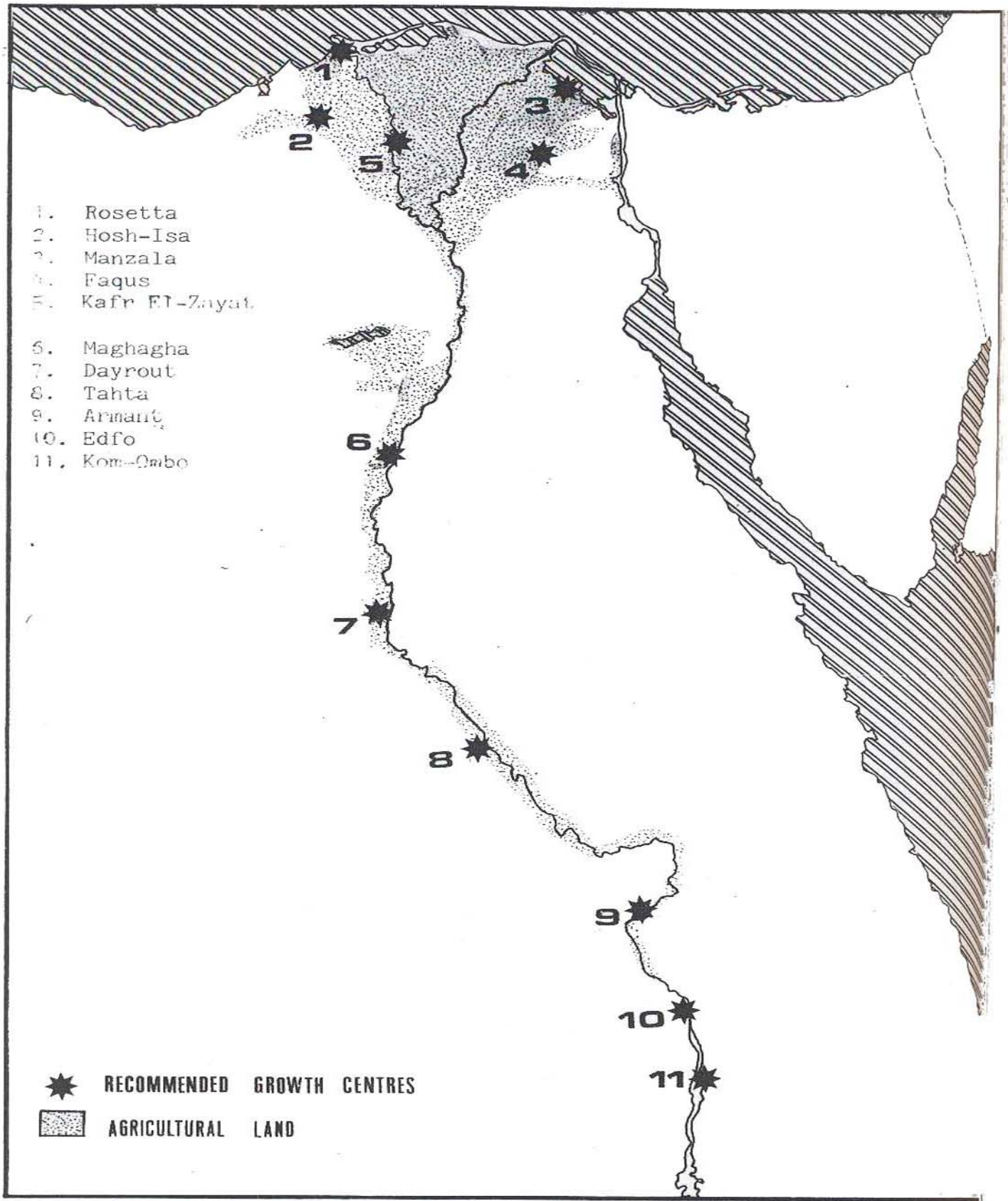
There are 11 towns that can take part in this alternative, namely : ROSETTA, HOSH-ISA, MANZALA, KAFR EL-ZAYAT, FAQUS, DAYROUT, TAHTA, ARMANT, EDFO and KOM- OMBO. On the other hand, 6 towns have been excluded among the 7 recommended middle size towns, namely : KHANKA, TALKHA, BENI-MAZAR, QUSEIA, MANFALOUT and Qus, fig. '5-11'.

KHANKA and TALKHA are excluded due to their location too close to primate (Cairo) and large cities in the Delta. Beni-Mazar, QUSEIA and Manfalout are excluded for not having any development potentialities in addition to their location very close to MAGHAGHA and DAYROUT reprectively'. which are more promising for development. Finally, QUS has not been recommended due to its location too close to Luxor which is planned to be a great growth centre depending upon its enormous tourism potentialities in addition to its weak industrial potentialities.

On the other hand, when speaking about the towns recommended for playing an active role in developing their surrounding regions and participating in attracting migrants to large cities by providing new job opportunities and improved social and physical infrastructure facilities, it must be clear, that different policies have to be applied according to the different circumentances of each town.

Towns such as ARMANT EDFO and KOM-OMBO, which have ' to some extent ' industrial bases represented in sugar cane refineries, must concentrate on developing this existing industry and paying attention to sugar based industries ;

' Prefeasibility studies are needed to determine the net gains from alternative ways of utilizing sugar cane baggase. Currently the sugar plants



ALTERNATIVE (A),
GROWTH CENTRES CONCEPT

Fig. N-
5_11

use the baggase to generate steam power. Alternatively, the baggase could be used in the manufacture of paper pulp and wood fibre. This industrial use, in turn, would stimulate further industries such as furniture and printing. The conversion of baggase to paper pulp and wood fibre proved successful in stimulating secondary employment in both Kom Ombo and Edfo in Aswan Governorate. The bagasse of Qena Governorate's four sugar plants might prove sufficient to support a similar industry. Further investigation is warranted.

Molasses could be fermented into alcohol and yeast. Sectoral studies already undertaken for food processing industries suggest an expansion in the production of yeast. Also, increased alcohol production could be used in the pharmaceutical and perfume industries.'[1/]

In addition, in Edfo and Kom-Ombo, tourism development has to be also considered. In Maghagha, Quseia and Tema with their relatively poor development potentialities, different policy has to be applied by providing such towns with a big industrial complex 'e.g. Naga Hammadie'. Such a support to these towns would enable them to satisfy the urgent social, economic and physical needs of their region's population and the national development objectives.

Furthermore, different polices have to be applied in developing the recommended towns, in the Delta region. In the case of towns such as Rosetta and Manzala which have a good location on the sea and lakes, it has to take advantage of its unique location, besids developing certain types of industries and manufactures which are related to fishing and sea activities. In other towns such as Faqus and Hosh-Isa located on the pripheries of

---

1/ PADCO, INC. with Engineering Consultants Group and El-Hakim,S.& Associates, Illustrative Development Project 'Qena - Naga Hammadie'. The National Urban Policy Study, Cairo, January 1982.

the reclamied lands in Salhia and Wadi El-Natroun the development policy has to deal with these towns as nodal retail markets for agricultural services and products in addition to some agro-industrial activities.

4.2.2. Alternative B, Growth Axes Concept.

This concept is rather similar in many aspects to the growth centre concept. Each of the recommended towns in this concept will play the role of a growth centre within its hinterlands, and in addition to this regional function, it has to play anational function by attracting the national development through certain growth axes. These growth centres has to be located on one of these growth axes.

In Egypt, since the dawn of its history, there has been only one axis of growth along the narrow valley of the river Nile in Upper Egypt and its delta in Lower Egypt. After the construction of the Suez Canal, another growth axis had taken place along side the canal with its main three cities ' Port-Said, Ismailia and Suez '. This axis became one of the main alternative solutions to the urbanization problems of Egypt, during the past few years (NUPS., has strongly recommended Ismailia to be a counter-magnat to compete with greater Cairo and Alexandria for migrants).[1/] In fact, the main chalenge to the national development objectives of Egypt is how to creat new axes of growth through which the development has to be channeled.

The basic idea of alternative B, is to creat new axes of growth in order to achieve the following objectives :

i) Escaping from the historical growth axis around the limited agricultural

---

1/ Please, refere to PADCO, INC. January 31, 1981, pp. '16-18' (The National Urban Policy Study - Interim Action Report).

land in the Delta and the Nile Valley.

ii) Making full use of the existing urban settlements which are located away from the arable land, through developing such settlements to be as growth centres.

iii) Conquering the desert, not through scattered new cities, but by creating strong growth axes depending upon the existing towns (as short term planning) to make use of the already existing basic development potentialities and infrastructure of facilities. New urban settlement can take part (as long term planning) in improving and strngthening these axes of growth.

Three main axes of growth are suggested here, namely[1/]:

i) The Northern Growth Axis :

To develop the northern regions along side the sea coast. It could be subdivided into three secondary axes, these are : Northern Sinai axis, Northern Delta axis and the Northern-West coast axis.

ii) The Southern Growth Axis :

To develop Upper Egypt through attempting to create a perpendicula axis to the Nile Vally extending from the Red Sea to the western desert. This axis of growth could be subdivided also into three secondary axes, namely: The Red Sea axis, Upper Egypt axis and the Oasis axis.

1/ Three articles were published in 'El-Ahram' news paper*, in which a study for proposals of new growth axes was carried-out, which is, in priciple, agreed with alternative B.

* محمود مراد – نحو خطة قومية شاملة لمصر تعيد توزيع السكان وتستثمر كل الامكانيات
جريدة الاهرام – ص ٩ – القاهرة بتاريخ ٨٢/٧/١٦ ، ٨٢/٧/٢٣ ، ١٩٨٢/٧/٣٠ .

iii) The Delta Extension Growth Axis :

This is directed towards widening the (V) shape of the Delta by linking the new reclaimed lands in Salhia and Wadi El-Natroun to the existing cultivated areas in the Delta.

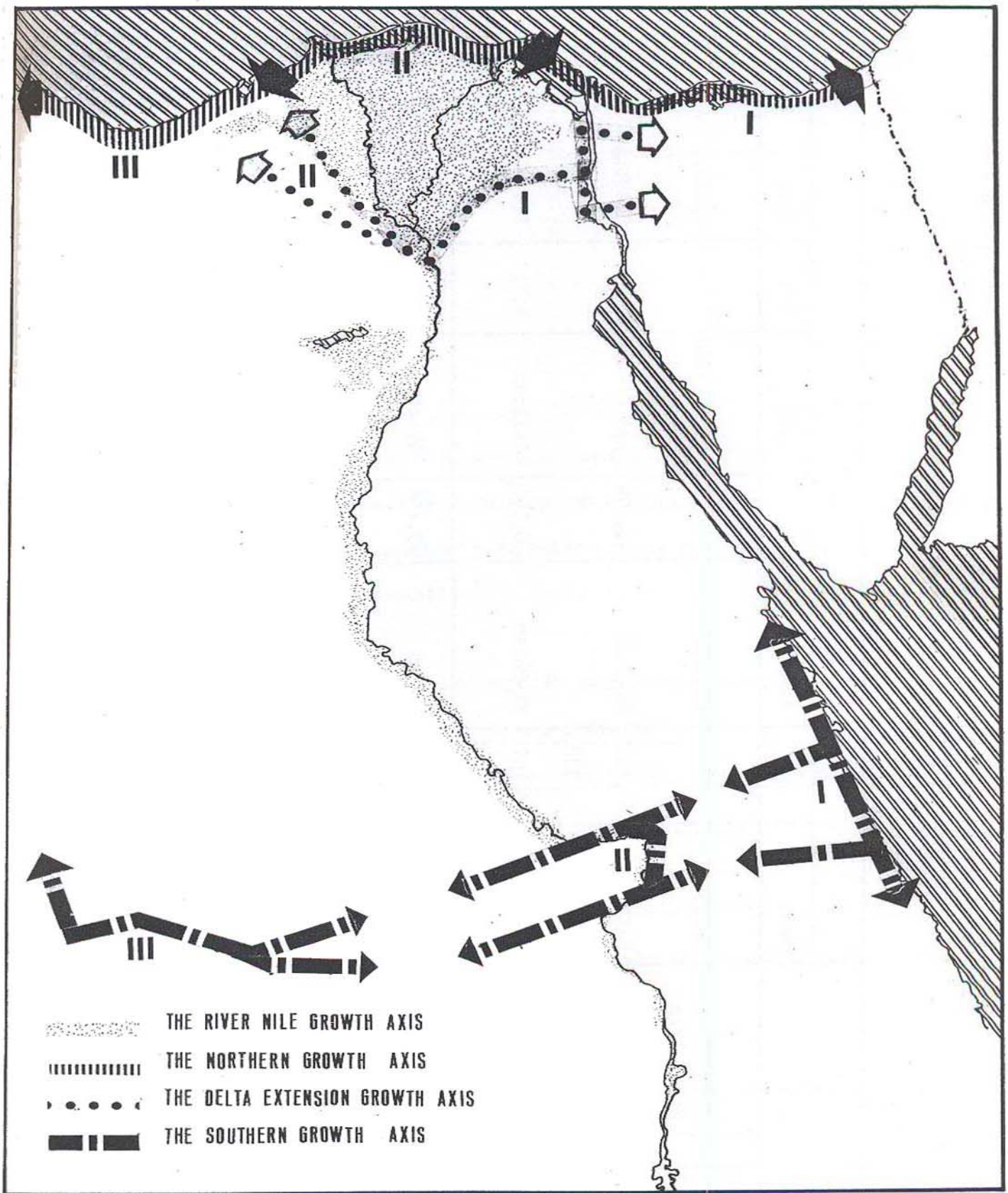
Fig. '5-10', illustrates the previous growth axes, while table '5-7' classifies the existing towns located on these axes according to their location and population size. The following are based on fig. '5-12' and Table, '5-7'.

i) Several towns such as, Edku, Qantara, Abu-Hammad, Quseir .... etc, which are not classified as middle size towns, must be re-examined and considered in applying such an alternative.

ii) Qantara and Fayed have been recommended in this alternative due to their unique location on the Suez Canal. these towns can act as urban gates linking the Delta extension and the northern Sinai across the Canal.

iii) The efficiency of the strong growth axis of Naga-Hammadie in Upper Egypt, will be enhanced by including Luxor with its huge tourism potentialities weight, in addition to both of Qus and Armant as middle size growth centres. On the other hand, this axis is the key stone of the proposed perpendicular new axis to the Nile Valley between Red Sea and the Western desert.

iv) Several secondary growth axes perpendicular to the Nile Valley furnish a good opportunity for any town to extend in desert area away from the arable land, either to the east or west (Naga Hammadie).



ALTERNATIVE **B ,**

GROWTH CORRIDORS CONCEPT

Fig. No.:

5_12

Table '5-7', Classification of Existing Towns Located on the Proposed Growth Corridors

Main Growth Axes	Secondary Growth Axes	Exiting Towns							
		Name	Pop.	Name.	Pop.	Name.	Pop.	Name.	Pop.
The Northern Axis	Northern Sinai Axis	Rafah	-	El-Arish	-	Bir El-Abd	-	Qantara	0.919
	Northern Delta Axis	Mataria	61,153	Manzala	43,964	Ras El-Bar	2,499	Rosetta	42,992
		Edku	62,330						
	Northern-West Coast Axis	Matrouh	27,857	El-Hamam	6,588	Salloum	4,161	Sidie Brani	1,574
The Southern Axis	The Red Sea Axis	Hurghada	10,635	Safaga	9,218	Quseir	10.246		
	Upper Egypt Axis	Naga-Hammadie	19,791	Quena	93,787	Luxor	92,748	Armant	42,214
	Oasis Axis	Kharga	26,375	Mut	8.032	El-Qasr	-		
The Delta Extension Axis	The Eastern Axis	Abu-Hammad	17,606	Tal El-Kebier	16,719	Fayed	10,568	Faqus	39,000
	The Western Axis	Wadi-El-Natroun	8,424	Hosh-Isa	44,257	New Sadat City	-		

Another important growth axis along the new ' Tushky Canal ', could be added to the previous axes, nevertheless, several new urban settlements must be created along it to make use of such axis, as no existing urban settlements are located there.

5.5 SYNOPSIS

In spite of being located within arable lands, Middle size towns have high population absorption capacity (nearly of 2 million population by the year 2000 in addition to the expected population size by that year), due to their low existing population density.

Among 36 middle size towns, there are 17 towns that could be recommended for development, namely : ROSETTA, FAQUS and KOM-OMBO (class A), and HOSH-ISA, TALKHA, MANZALA, KAFR EL-ZAYAT, KHANKA, MAGHAGHA, BENI-MAZAR, DAYROUT, QUSEIA, MANFALOUT, TAHTA, QUS, ARMANT and EDFO (class B),

These towns are enjoying high population absorption capacities and available development potentialities (which are the main factors affecting towns' development priorities).

There are two main approaches for the development of middle size towns. The first, deals with all different towns separatly according to the various circumstances of each one. The second, tries to organize these towns into a spatial distribution through which they can play a role in the urban development of Egypt, (growth centres or growth corridors concepts).

Growth centres concept, comprises 11 towns among the seventeen recommende middle size towns, namely : ROSETTA, HOSH-ISA, MANZALA, KAFR EL-ZAYAT, FAQUS, MAGHAGHA, DAYROUT, TAHTA, ARMANT, EDFO, and KOM-OMBO. It attempts to induce agglomoration economies in these towns ' either by utilizing the existing economic base or by establishing new industrial complexes, to achieve a more balanced geographical structure of development. This concept provides social justice through inter-regional eauity among the existing urban settlements, but it does not create new urban extenstions.

Growth Axes Concept, provides three major axes namely : the Northern growth axis, the Southern growth axis and the Delta extension growth axis. These axes of growth could be subdivided into eight secondary growth axes. The importanc of transportation lines as the main skeleton for development is emphasized in this concept. The spatial distribution of population follows development axes, the major transportation routes, ending at major poles of development along these axes, where concentrated activities are alocated. This axial development concept provides a possibility of creating new urban extensions and making use of the recommended existing towns by concentrating infrastructure, services and production along existing and planned transportation lines.

VI

CONCLUSIONS

This thesis attempted through-out the previous shapters to address the question of middle size towns, to define them and to outline their main features. It also classified their development potentialities and attempted to to draw possible roles they can play in the urban development of Egypt.

The main findings of this work could be summarized as follows :

i) The continuous rise in the proportion of urban population compared to the country's total and the resulting imbalanced urban structure, are the main features of Egypt's urbanization problem.

ii) There is an urgent need to restore balance to the urban structure of Egypt, which is driven towards greater degrees of primacy in Cairo and Alexandria. Urban population has to be evenly redistributed all-over the country. This could be achieved through the creation of new urban settlements or making use of the existing ones.

iii) New cities strategy needs huge investments which is beyond the capability of a developing country such as Egypt, furthermore the mass movements of population need a relatively long time to be achieved. However, this strategy has to be continued at its same trends as a long term action which is necessary for absorbing the expected increase of urban population.

iv) The development of existing urban settlements as a short term line of action has to go parallel to that of new cities strategy to satisfy the urgent need of restoring the balance to Egypt's urban structure.

v) Middle size towns as one of the components of Egypt's urban structure may be regarded as one of the growth stages of most towns. The population size of this stage is not fixed, but it changes periodically according to several factors (The number of urban localities ranging between 20,000 to 100,000 population during each period, the population size of each urban locality of this group and the range of size encompassing the majority of these towns). Middle size towns could be defined as 'The urban settlements roughly located within the middle third of settlements having a population size of (20,000 - 100,000) inhabitants. This middle third includes all towns with a population size raning between 30,000 to 45,000 inhabitants (according to 1976 statistics)'.

vi) Middle size towns are characterized by : the range of population size (30,000 - 45,000 inhabitants), low average annual population growth rate, the non existence of a solid industrial / economic base and location within arable lands. Also, they suffer from several problems, such as: shortage of urban activities and services, bad conditions of social and physical infrastructure facilities, lack of new job opportunities in addition to the spread of rural housing at the peripheries of these towns. However, these middle size towns can play an active role in solving urbanization problems of Egypt as they do present one third of the existing urban settlements. Furthermore, these towns have a level of infrastructure facilities which is more suitable for development than that of upper and lower ranks of secondary settlements. Also, their physical growth is still controllable and in some cases can be directed away from the arable lands.

vii) Secondary cities development strategy (as one of the basic settlement concepts) is the framework within which middle size towns can take

part in the urban development of Egypt. This strategy can highly achieve the major national objectives through inter-regional shifts of industrial development parallel to that of infrastructure facilities of the recommended towns. These towns have to be carefully chosen considering their growth in non-arable lands. Furthermore, the emplimentation costs of the secondary cities emphasis strategy are lower than those of other strategies such as new cities development. This is a vital factor for a developing country like Egypt.

viii) The population absorption capacity of middle size towns could be almost doubled by the year 2000. If these towns expand only within their administrative boundaries but with gross residential density of 150 perso / feddan, a total of two million population could be absorbed within these towns in addition to their own expected population by the year 2000.

ix) Among 36 middle size towns, there are 17 towns could be recommended for development, namely : ROZETTA, HOSH-ISA, KAFR EL-ZAYAT, TALKHA, MANZALA, FAQUS, KHANKA, MAGHAGHA, BENI-MAZAR, DAYROUT, QUSEIA, MANFALOUT, TAHTA, QUS, ARMANT, EDFO and KOM-OMBO. These towns are the highest promising towns for development. They enjoy high population absorption capacity and available development potentialities, besides their location within a reasonable distance from large cities. In addition, they enjoy high degrees of urban maturity, large population size and high average annual population growth rates.

x) Middle size towns can take part in Egypt's urban development through two main approaches. the first, by dealing with each of these towns separatly according to its own circumstances. the second, by organizing these towns

into a spatial distribution through which they can play an active role on both regional and national levels as well as local level. There are two main alternatives for such a spatial distribution of these towns. The first, relies upon growth centres concept which comprises 11 towns among the 17 recommended middle size towns, namely : ROSETTA, HOSH-ISA, KAFR EL-ZAYAT, MANZALA, FAQUS, MAGHAGHA, DAYROUT, TAHTA, ARMANT, EDFO, and KOM-OMBO. This concept tries to achive a more balanced geographical structure of development through inter-regional eauity among the existing urban settlements. The second concept is based on growth corridors concept. It provides three major axes, namely : the Northen growth axis, the Southern growth axis and the Delta extension growth axis. Through these axes it gives the possibility of creating new urban extensions and making use of the recommended existing towns located along existing and planned transportation lines. These trasportation lines are the main skeleton for development of the proposed growth axes.

xi) Various policies have to be applied in dealing with different towns in each approach, according to their contex and circumestances (e.g. geographical location, development potentialities, population absorption capacity, the suggested regional and national role .....etc.). Generally speaking, the public sector should take the first step in the development of these towns, (e.g. by establishing large scale of industrial complexes and by improving the social and the physical infrastructure facilities to attract private investments to such areas) in order to enhance the social justice through the inter-regional equity.

It provides three major axes, namely : the Northen growth axis, the Southern growth axis and the Delta extension growth axis. Through these axes it gives the possibility of creating new urban extensions and making use of the recommended existing towns located along existing and planned transportation lines. These trasportation lines are the main skeleton for development of the proposed growth axes.

x) Various policies have to be applied in dealing with recommended towns in each alternative, according to their contex and circumestances (e.g. geographical location, development potentialities, the suggested regional and national role ..... etc.). Generally speaking, the public sector should take the first step in the development of these towns, e.g. by establishing large scale of industrial complexes and by improving the social and the physical infrastructure facilities to attract private investments to such areas, in order to enhance the social justice through the inter-regional equity.

To reiterate the key to the problem of middle size towns is 4 steps solution :

i) Concentrate the development endeavours on a few rather than all middle size towns.

ii) The priority should be put on those towns with development potentialities. and high population absorption capacity.

iii) The development should be based upon the provision of a sound industrial base as the major source for new job opportunities.

iv) The development should be accompanied by an improvement of environmental standards.

REFERENCES

1-1 Breese, G. 'editor', The City in Newly Developing Countries, Prentice Hall International, INC., London, 1972.

1-2 Donaldson, P. Worlds Apart- The Economic Gulg Between Nations, Penguin Books Ltd., London, 1971.

1-3 Seers, D. & Joy, L. 'editors', Development in a Divided World, Penguin Books Ltd., London, 1971.

1-4 البنك الدولى ، تقرير التنمية فى العالم ، أغسطس ١٩٨٠

2-1 Abu-Lughod, J. Urbanization in Egypt - Present State and Future Prospects, Social Research Centre, The American University in Cairo, Reprint Series No. 5, Cairo, 1965.

2-2 Sabbour Associates, et. al. The Planning of Sadat City - Status Report 1, Cairo, September 1976.

2-3 United Nations Development Program, Suez Canal Regional Plan - Human Development, Vol. 2, Cairo, 1976

2-4 Watebury, J. Egypt, The American University Publications - (University Field Staff Reports), Cairo, 1975.

2-5 د. أحمد أمين مختار ، العوامل المؤثرة فى نمو السكان فى جمهورية مصر العربية ، مطبعة الكيلانى ، القاهرة ، ١٩٧٥ .

2-6 الجهاز المركزى للتعبئة العامة والاحصاء ، التقديرات العامة لسكان جمهورية مصر العربية ، القاهرة ، أول يونيو ١٩٧٦ .

2-7 د. محمود الكردى ، النمو الحضرى (دراسة لظاهرة الاستقطاب الحضرى فى مصر) ، دار المعارف ، القاهرة ، ١٩٧٧ .

3-1 الجهاز المركزى للتعبئة العامة والاحصاء ، التعداد العام للسكان والاسكان ، القاهرة ، ١٩٦٠ .

3-2 الجهاز المركزى للتعبئة العامة والاحصاء ، التعداد العام للسكان والاسكان ، القاهرة ، ١٩٧٦ .

3-3 الجهاز المركزى للتعبئة العامة والاحصاء ، التعداد العام للسكان والاسكان " نوفمبر ١٩٧٦ ، النتائج الاولية "
محافظات الوجه القبلى القاهرة ، ديسمبر ١٩٧٨
محافظات الوجه البحرى القاهرة ، ديسمبر ١٩٧٨ .
محافظات الحضر والحدود " " "

3.4 اكاديمية البحث العلمى والتكنولوجيا ، المسكن الريفى والتخطيط العمرانى للقرية المصرية ، مجلد رقم ١ ، القاهرة ، ١٩٧٨ .

4-1 PADCO, INC. with Engineering Consultants Groups and El-Hakim, S. & Associates, The National Urban Policy Study-Working Paper, Cairo, October 30, 1980.

4-2 PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study-Interim Action Report, Cairo, January 31, 1981.

4-3 PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study-Working Paper on First Round Alternatives, Cairo, May 31, 1981.

4-4 Toulan, N. New Towns in the Greater Cairo Urban Region-Existing Conditions, Report 1, G.O.P.P., Cairo, August 1979.

4-5 Toulan, N. New Towns in the Greater Cairo Urban Region - Regional Planning Guidines, Report 2, G.O.P.P., Cairo, March 1980.

5-1 Golany, G. 'editor', International Urban Growth Policies - New Towns Contributions, John Wiley & Sons, Inc., Canada, 1978.

5-2 Moseley, M. Growth Centres in Spatial Planning, Pergamon Press, Oxford, 1974.

C-3 PADCO, INC. with Engineering Consultants Group and El-Hakim, S. & Associates, The National Urban Policy Study - Illustrative Development Project 'Qena - Naga Hammadie' , Cairo, January 1982.

A-1 G.T.Z. and G.O.P.P, El-Obour Master Plan Study (phase C) - Bilbeis Development Potentialities Study, Cairo, Under-Printing.

B-1 Farid, R. 'Temporal Analysis of Settlement Size Distribution and Economic Development, Egypt, 1882-1966', Ph. D. Thesis, Vol. 2, Cornell University, U.S.A., January 1978.

LIST OF READINGS AND RELATED LITRATURE

1- Abu-Lughod, J. & Richard-Hay, J.R. Third World Urbanization, Maaroufa Press, Inc., London, 1977.

2- Clark, B. Urban Renewal, Unit 28, Planning and the City, The Open University - Urban Development Unite, the Open University Press, U.K., 1973.

3- Costella, V.F. Urbanization in Middle East, Cambridge University Press, U.K., 1977.

4- Glasson, J. An Introduction to Regional Planning, Hutchison Educational Ltd., London, 1974

5- Hall, P. The World Cities, World University Library, U.S.A., 1966.

6- Hall, P. Urban & Regional Planning, Penguin Books Ltd, England, 1974.

7- Ilaco, Hassan Ismail & Partners, New Ameriyah City - Technical Report - Master Plan, Cairo, October 1978.

8- Kirkby, R. China's Strategy for Development, Architectural Design, Vol, XLIX 3/1974, W.W.Web Offset and Whitefriars Press, England, 1974.

9- Knex, F. The Optimum Size of Cities, Unit 27, Planning and the city, the Open University - Urban Development Units, The Open University Press, U.K., 1973.

10- Lean, W. Economics of Land Use Planning - Urband & Regional, the Estates Gazette limited, London, 1969.

11- Mc Loughlin, J. Urban and Regional Planning - 'A System Approach' Faber and Faber Limited, London, 1969.

12- Meier, R. Notes Upon Future Development of Cairo- 'Working Paper No. 270', Cairo, July 1976.

13- Ministry of Reconstruction and Development, Program of Reconstruction and development, Cairo March 1977.

14- Planning Research Corporation Washington, D.C. in Association with PACER 'Cairo', Technical Proposals for National Urban Policy Study of Egypt, Cairo September 1979.

15- Roberts, M. An Introduction to Town Planning Techniquies, Hutchinson Educational Ltd, London, 1974.

16- United Nations Economic Commission for Western Asia, The population Situation in the ECWA Region - 'Egypt', Beirut, 1980.

17- Wilkenson, R. Poverty and Progress, Methuen & Co. Ltd., London, 1973.

18- Yeates, M & Garrner, B. The North American City, Harper & Row Publishers, U.S.A, 1971.

١- د. أحمد خالد علام ، التخطيط الاقليمى ، مطبعة النهضة العربية ، ١٩٨٢

٢- د. أحمد خالد علام ، تخطيط المدن ، " " " ، ١٩٨٠

٣- البنك الدولى ، تقرير عن التنمية فى العالم ، أغسطس ١٩٧٨

٤- البنك الدولى ، تقرير عن التنمية فى العالم ، أغسطس ١٩٧٩

٥- اللجنة العامة لتخطيط القاهرة الكبرى ، الجهاز التخطيطى والتنفيذى التخطيط الابتدائى العام لاقليم القاهرة الكبرى ، القاهرة ، مارس ١٩٧٠

٦- الهيئة العامة التخطيط العمرانى ، التخطيط الهيكلى لمدينة سمنود ، القاهرة ، ١٩٧٦ .

٧- الهيئة العامة للتخطيط العمرانى ، التخطيط الابتدائى العام لمدينة شبرا الخيمة ، القاهرة ، ١٩٧٢

٨- الهيئة العامة للتخطيط العمرانى ، التخطيط الابتدائى العام لمنطقة حلوان الصناعية ، القاهرة ، يونيو ١٩٧٢ .

٩- الهيئة العامة للتخطيط العمرانى ، دراسة النمو العمرانى لمدينة بنى سويف حتى سنة ٢٠٠ - (التقرير العام - مجلد ٤) ، القاهرة ، يناير ١٩٨٢

١٠- الهيئة العامة للتخطيط ، التخطيط الهيكلى العام لمدينة ٦ أكتوبر - (التقرير الاول)، القاهرة ، اكتوبر ١٩٧٩ .

١١- الهيئة العامة للتخطيط العمرانى ومركز بحوث التنمية والتخطيط التكنولوجى ، جامعة القاهرة ، مدينة الامل -(التقرير الرابع)، القاهرة ، ١٩٨٢

١٢- بيانات مجمعة عن المدن التالية ، (بلبيس - الحوامدية - شبين الكوم - منيا القمح - بنها) ، جامعة القاهرة ، ١٩٨٠

١٣- د. محمود يسرى ،د. طاهر الصادق ، التخطيط الشامل لمدينة الزقازيق ، القاهرة ، أغسطس ١٩٧٤

١٤ مركز التنمية والتخطيط التكنولوجى (جامعة القاهرة) ، تخطيط وتصميم قرى الشباب (منطقة شرق القناة) ، الجزء الاول والثانى ، القاهرة ، فبراير ١٩٨١ .

١٥- مركز التنمية والتخطيط التكنولوجى (جامعة القاهرة) ، مشروع تنمية وتخطيط مدينة الفيوم -(المخطط الهيكلى العام) ، التقرير النهائى " أ " ، القاهرة

١٦- وزارة الاسكان ، السياسة القومية لمواجهة مشكلة الاسكان ، القاهرة ، نوفمبر ١٩٧٩ .

APPENDIX (A)

CASE STUDY OF BILBEIS TOWN

This appendix reviews the case of the town of Bilbeis, and it looks at the effect of developing its industrial base on its growth. The study attempts to evaluate the effect of the industrial development that has strated since the sixties ' and till now ' on the physical, social and economic structure of the town. This industrial development will be identified by : type of industry ' existing and proposed ', production capacity, labourforce 'employment opportunities' and total investments.

The effect of this industrial development will be measured through following-up population growth, employment structure and the physical growth of the town before and after the industrial development.

A.1 OVERVIEW

his introduction provides a general overview of the historical, physical, demographic and economic conditions of the town that is likely to affect its development.

A.1.1 Historical Review

Bilbeis, is an Egyptian town with a long history. Being located on the edge of the eastern desert, it played a remarkable role in the commercial and military activities of Egypt due to its strategic location on the road

---

* All data of this study are obtained from (G.T.Z. and G.O.P.P., Bilbeis Development Potentialities Study - El Obour Master Plan Study - Phase C, Cairo, 1982 'Under printing'), where the auther was the physical planner of this report.

** The population size of Bilbeis is 69,112 inhabitants in 1976, but in 1960 when the industrial development started (when El-Gut factory started production) its population size was 37,941 inhabitants, which is within the suggested population size of middle size towns.

linking Egypt to Syria. The town was always an administrative and service centre for the surrounding rural areas . It was the capital of the Eastern region since the pharonic period up till 1826, when Zagazig city became the capital of this region and Bilbeis occupied the second position in the ranking order in Sharkia Governorate.

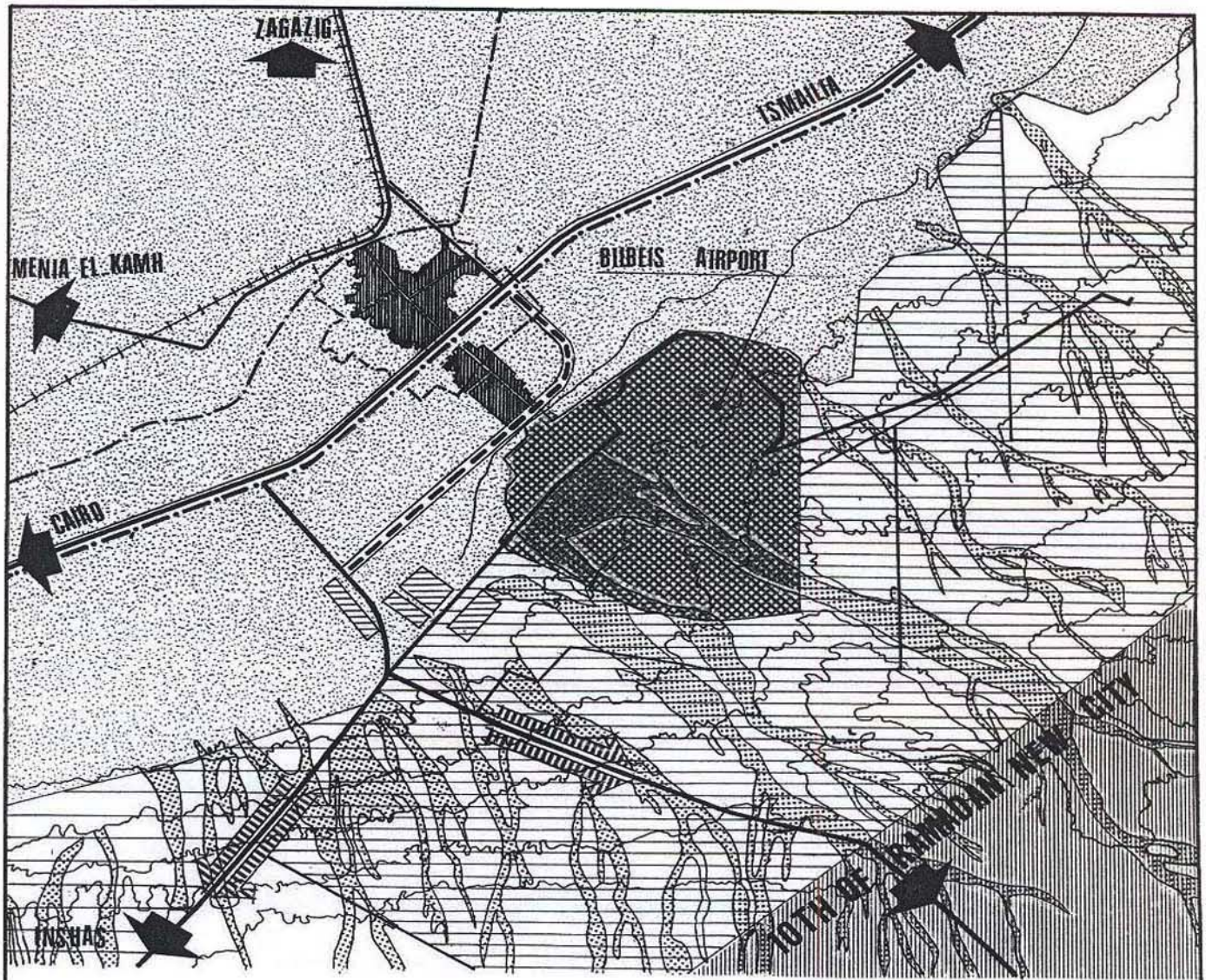
A.1.2 Physical Features, Fig. (A· 1)

i) The Regional Context :

Bilbeis, is the second largest town in Sharkia Governorate, ranked 18th in the rank size distribution of lower Egypt, while it was the 27th in the rank size distribution of total Egypt in 1976. The town is the administrative centre of Bilbeis county which consists of eight localities, 38 villages in addition to a number of satellite villages 'Naga' .

ii) Geographical Location ..

The town is located on the peripheries of the agricultural land, where the desert is extending along its southern edge, Generally, it has a nodal location in the vicinity of three regions, namely : the Delta, Suez Canal and Greater Cairo. It is located some 50 kms. to the north-east of Cairo, 24 kms. South-east of Zagazig and 25 kms. North-west of the site of 10th of Ramadan new City. The town has reasonable connections with other main settlements in Egypt due to the existence of good linkages and transportation channels.



BILBEIS TOWN

AGRICULTURE

URBAN EXTENSIONS

AGRICULTURAL CO.OPARATIVES

WATERSHEDS

INDUSTRIAL DEVELOPMENT

ROADS (EXISTING)

ROADS (PLANNED)

BILBEIS BOUNDARIES

RAILWAYS

GENERAL PHYSICAL FEATURES

Fig. No. :

A - 1

iii) Topography, Climatology and Watersheds ..

The general land form of the size is very simple where Ismailia canal is the main feature. its Northern side is flat cultivated land; while the Southern side is moderately high desert land with an average slope of 0.75 % to the North-West. The macro climate of the area is mild in general and it could be considered free of pollution. Also, watersheds which extends to the South of the town are almost dry.

iv) Land Uses ..

The surrounded area of Bilbeis town is characterized by the existence of two main features. The first, is the spread of several agricultural co-oparatives to the South of Ismailia canal such as El-Adlia Co. Ramsis Co. and Bin El-Matarien Co. The second, is the Air Force Academy and Bilbeis airport to the South of the town. In addition, there are several military uses extending along Cairo - Bilbeis desert road and different industrial activities located to the North and the South of the town and along Bilbeis - 10th of Ramadan road.

v) Infrastructure ..

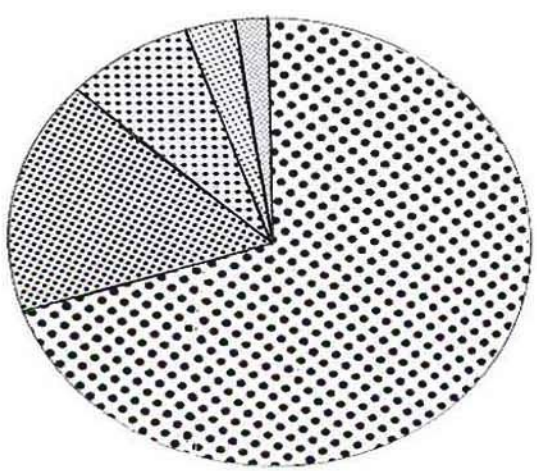
The internal street pattern of the town is clear in its main structure, but secondary roads are narrow, unpaved, informal and without any hierarchy. There are a clear shortage in different infrastructure facilities of the town 'water supply, sewerage and electricity', the costs of up-grading these networks are estimated to be 40 million L.E. For example, in spite of the good condition of water supply pump stations, all the pipe lines network has to be changed. On the other hand, several lots in the built-up area are not connected to sewerage network. The pump stations are in relatively poor conditions. In addition, the capacity of the electrical network has to be increased to satisfy the expected

industrial expansion of the town.

vi) Built-up Area, Figs. (A-2) and (A-3)

Bilbeis built-up area is mainly located on the North bank of Ismailia canal, it extends across the canal to the Southern bank where the Air-Force Academy, El-Gut factory, some public buildings and informal housing are located. The built-up area covers some 593 feddans representing 48.0 % of the gross area of the town '1222 feddans'. Residential and industrial uses are the main land uses of the town, they accommodate 70.0 % and 17.0 % of the built-up area 'respectively', public services occupy about 8.0 % of the town area. There is no vacant land inside the built-up area, while agricultural pockets suitable for physical expansion are about 304 feddans. On the other hand, rural housing and blighted areas accommodate about 38 % of the built-up area of the town.

Generally speeking, the town is densly populated with an overall [1/] and total [2/] population density of 67 and 166 person / feddan in 1976 'respectively'.

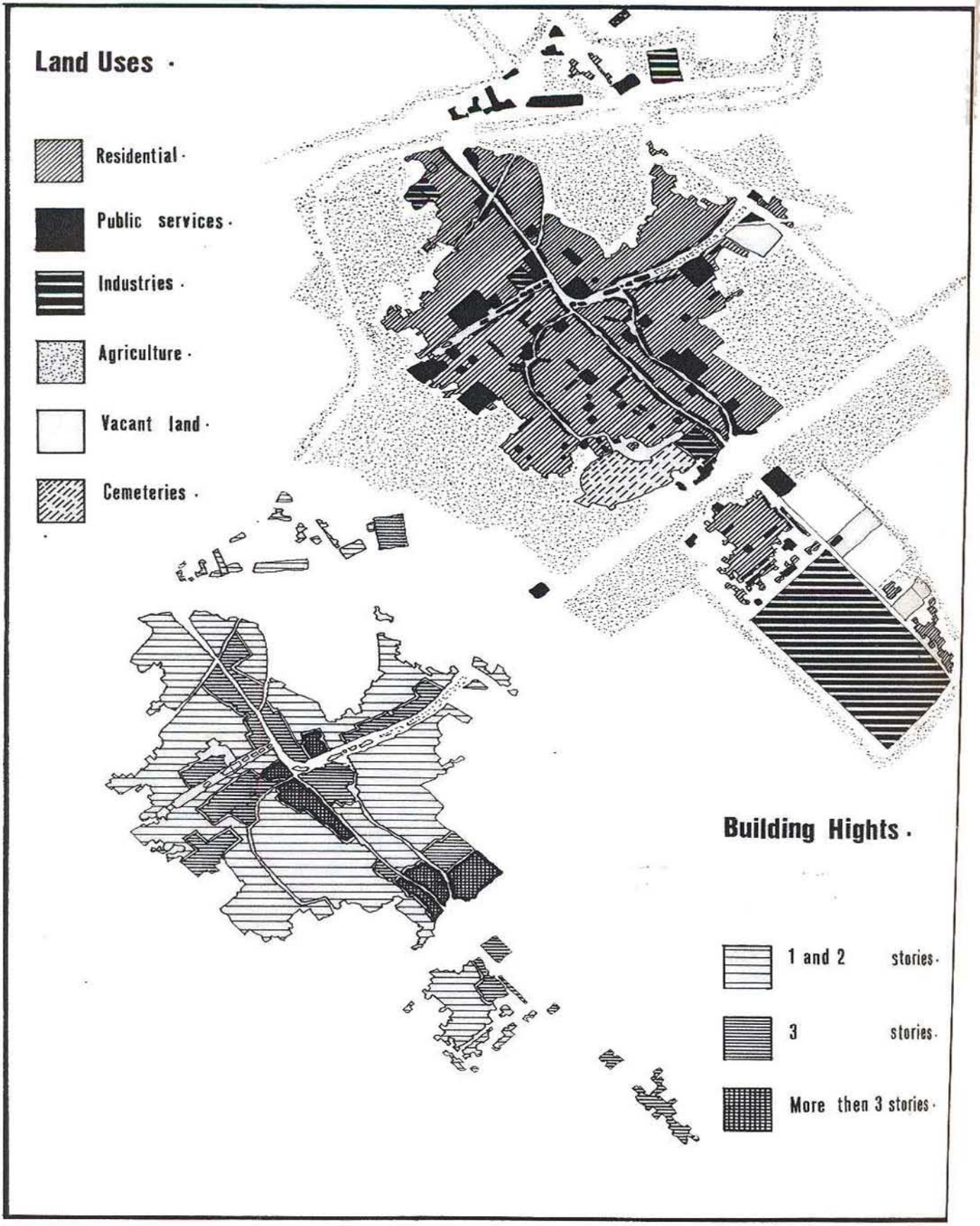


PERCENTAGES OF DIFFERENT LAND USES WITHIN THE BUILT UP AREA.

Residential	70.0%
Industries	17.0%
Public Services	8.0%
Cemeteries	3.0%
Open Spaces	2.0%

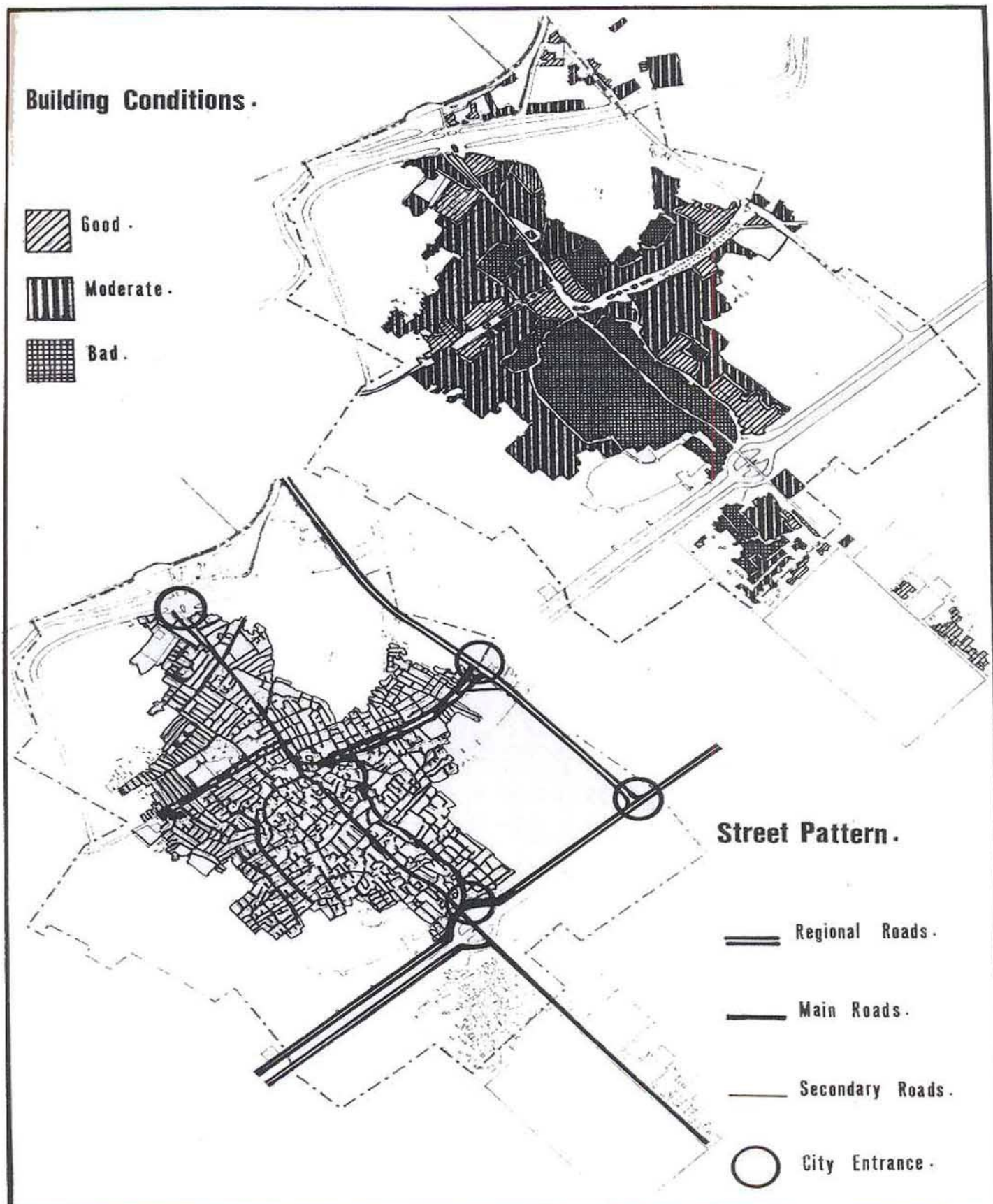
1/ Overall Density = $\frac{\text{Total population of the town}}{\text{Overall town area within administrative boundaries}}$

2/ Total Density = $\frac{\text{Total population of the town}}{\text{Total built-up area without Basic activities}}$



BUILT–UP AREA STUDIES ·

Fig. No.:
A_2



BUILT_UP AREA STUDIES.

Fig. No.:
A_3

A.1.3 Demographic Characteristics

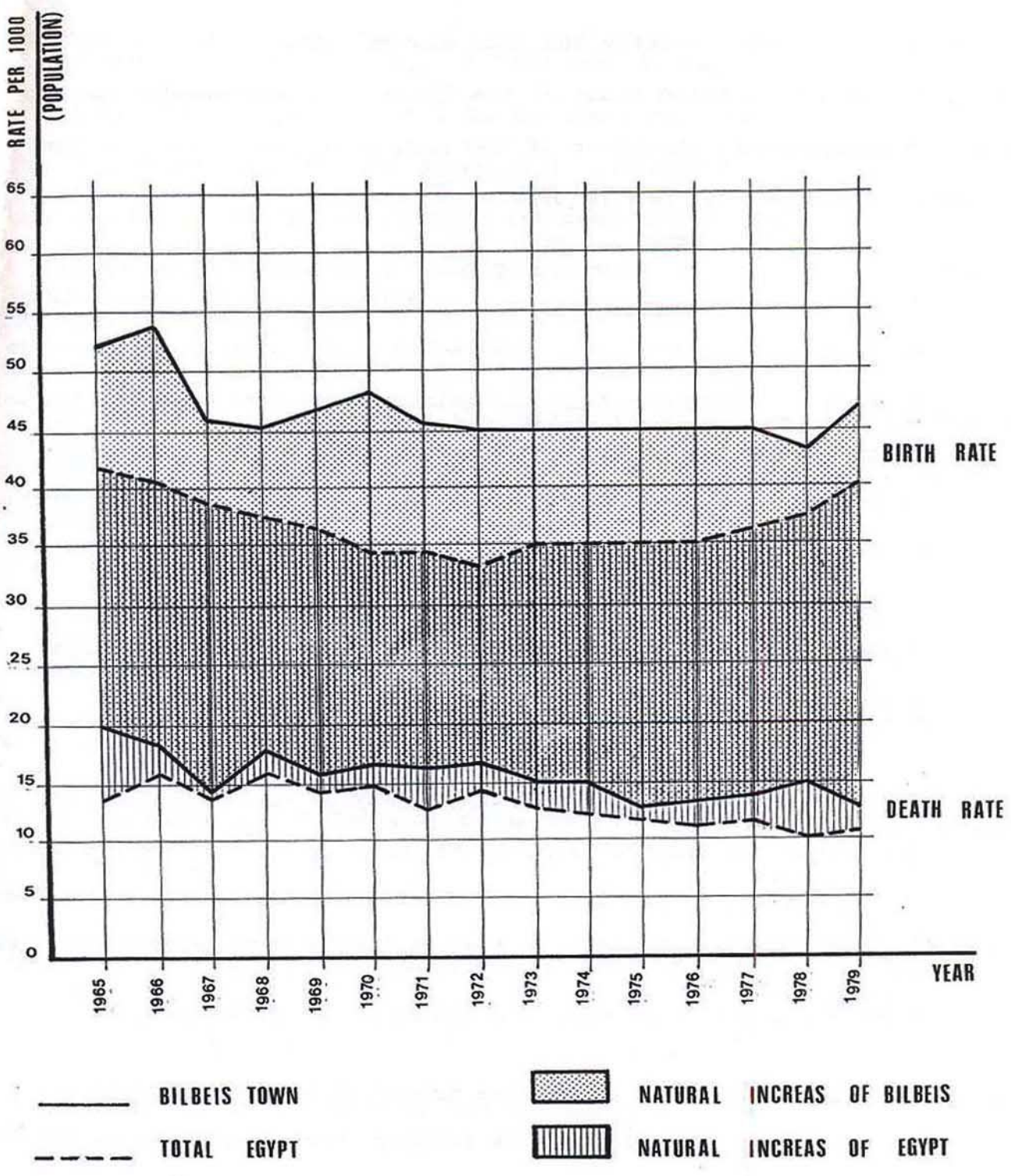
Main demographic characteristics of Bilbeis town are summarized hereafter, a detailed study of the population growth of Bilbeis is included in section 'A.3.1.'

i) Bilbeis town is characterized by high average annual population increase which is appoximately 3.8%. It is not expected that the rate of population increase will fall in the near future, 'the N.U.P.S. estimates that Bilbeis population will be more than doubled during the next 24 years'.

ii) The natural increase rate in Bibeis is the highest if compared with Zagazig, Sharkia average and the National average '31.0 %, 22.5 %, 25.8 % and 23.4 %' repectively during the period 1965 - 1979, fig. (A-4).

iii) The town is characterized by a high proportion of the un-productive age groups 'below 15 years' , higher than that of Sharkia Governorate, Sharkia urban and Zagazig city between 1960 - 1976, in spite of the ecrease of this proportion noticed in Bilbeis in 1976 (42.5%) than that of 1960 (47.2), the difference between Zagazig and Bilbeis was a remarkable one, it was higher in Bilbeis by about 8 %.

iv) The town showed an un-usual preponderance of adult men in the age group ' 15 - 60 ', due to the presence of some migrant groups within this age.



BIRTH, DEATH & NATURAL INCREASE RATES 1965 — 1979

Fig. No.: A-4

A.1.4 Economic and Industrial Activities

This section covers briefly the main economic and production activities in Bilbeis town. A detailed study of the industrial development and its effect on the employment structure of the town is disscussed at the end of this chapter 'Section (A2) and (A.3.3)'.

i) The quality of agricultural land in Bilbeis County is good in general. More than half of the total cultivated area in Bilbeis county is of higher productivity than the national average. However, the existing cultivated land is not sufficient enough for absorbing all agricltural labours. The wide co-oparative reclamation projects surrounding the town may offer good employment opportunities.

ii) Bilbeis area has great mining potentialitics of raw materials necessary for building and construction industries.

iii) The town's good location in the vicinity of three regions 'the Delta, Suez Canal and Greater Cairo) and being located on the peripheries of the desert, in addition to its administrative role, have given it a great advantage to play an important role as a service and trade centre.

iv) Industry began to be considered as one of the main economic dctivities of Bilbeis in 1960 when El-Gut factory started production, in addition to other small industries.

A.2 RECENT TRENDS IN INDUSTRIAL DEVELOPMENT, '1960 ONWARDS'

Industry started in Bilbeis in 1960 when El-Gut factory and fruits packing factory started production . During the period 1960 - 1976, the public sector was responsible for the industrial development. In 1976, the open door policy started to be one of the main features of the Egyptian economic policy and private sector began to play an active role in the economic development of Egypt, (public sector is still the key stone of the Egyptian economy)

Many private investors have been attracted to Bilbeis as an industrial development centre for its locational advantages and potentialities, that could be summarized as follows ..

i) Accessibility and proximity to the industrial area in Abu-Zabal.

ii) Accessibility to regional roads and national railway network.

iii) The existence of Ismailia canal as a major navigator link and source for water supply.

iv) The existence of a natural extension of the town in the desert, provides good potential location for newly established industrial projects

v) Proximity to the 10th of Ramadan new city.

vi) The nodal location between Greater Cairo, Suez Canal and the Delta regions, which enables the town to be a good distribution centre.

The private investors, Egyptian or joint venture, have established 20 industrial projects since 1976, which are expected to start production before 1985. These projects could be summarized as follows :

Number of projects	20	project
Ownership	Private and/or joint venture	
Total investments	75.795	L.E.
Labourfource	5117	job opportunity
Total area	170 + '50 for extensions'	feddan

The industrial development of Bilbeis could be divided into three stages. The first stage, includes all existing industrial projects between 1960-1976. The second stage, includes new industrial projects established in 1976 and started production or still under-construction in 1981. The third stage, includes the proposed industrial projects to be allocated in Bilbeis by the General Organization of the Investments of Arab and Foreign Capital. Each stage will be identified by:type of industry, Ownership, Production size, job opportunities, area and capital investments.

A.2.1 First Stage, Existing Industries '1960 - 1976'

Table 'A-1', illustrates the existing industries in Bilbeis indicated by the previously mentioned factors, besides the expected future expansion. This gives an overview on the size of the existing industries between '1960-1976' and their future expantion potentialities.

No	Establishment	Owner-ship	Production	Area 'Feddan'	Emplo-yees	Future Expansion	
						Area 'Feddan'	Empoloyees 'Total'
1.	El-Gut factory	Public Sector	26000 Ton/year	91.5	3809	-	8000
1.	Pre-fab Units factory	"	800 Unit/year	5,	500 per shift	11	1000 per shift
1.	Fruits Packing factory	"	400-500 Ton/day	4.5	65+700 1/	5.5	108
1.	Eastern Delta Grinding Factory	"	850-950 saks/day	7	120	n.v.	n.v. 2/ 66
4	Total Public Sector	-	-	762	4499+700	16.5	9108
1	Slaughtering House	Private Sector	1200 head/day	2	198	-	-
1	Macrony Factory	"	3.5 Ton/day	1	14	-	-
1	Breeding & Milk Production Station	"	1/4 Ton/day	1	10	-	-
1	Ice Blocks	"	60 Ton/day	0.06	20	-	-
70	Small Establishments	"		8.3	700	-	-
74	Total Private Sector	-	-	12.36	942	n.v.	n.v.
78	Grand Total	-	- -	174.36	5447+700	16.5	9108

1/ Periodical Labourforce
2/ n.v., Not - Available

Table 'A-2', New Industries iN Bilbeis Town, ' after 1976 '.

Project	Ownership	Investment 'L.E. million'	Employees	Area 'feddan'	Production
A) Industrial Projects Already Started Projection In 1981 :					
1. Tent cloth and thick textiles	joint venture	3.6	250	5.5+'10 ext.'	3 million meter
2. Eastern company for Pottery	"	0.7	53	1.5	
3. Joint Hungarian Co. for Pottery & Eggs Production	"	1.5	50	-	15 mill. eggs
4. Mirral Water Co.	"	3.3	66	2.0	42 mill. pottle
5. Animals food manufacturing	joint venture	3.0	250+500 ext 1/	7+15 ext.'	15 tone / hr
6. Maktorim Factory 'Agr. truck'	Private	1.0	50	2.0	3 trucks/week
7. El-Awadli Truck Factory	"	3.0	70	3.0	5 " "
8. Metalic Furnuture Factory	"	2.0	365	9.0	-
9. Paintings & Chemicals Factory	"	0.75	123	5.0	-
B) Industrial Projects Under Construction :					
1. El-Gut Factory 'Estension'	public-sector	-	4000	factory area	Doubling production
2. Clay Brik	"	5-10	250	15.0	120 mill. bricks

1/ Expected in case of Extension

Table 'A-2' (contd.) New Industries in Bilbeis Town. 'after 1976'.

Project	Ownership	Investment 'L.E. milliom'	Employees	Area 'feddan'	Production
3. Light Sand Brik	Public-sector	1.5	145	10.0	200 mill. bricks
4. Cement brick	"	1.0	130	8.0	10 mill. "
5. Mechanical produced tiles	"	0.25	25	2.0	500 m^2 / day
6. Lime stone crackers & gravel cripples complex	"	5.0	500	25.0	-
7. El_kadi prefab factory	joint-venture	2.35	100	5.0	1000 units
8. Prefab factory extension	public sector	-	500	25.0	-
9. Aluminium building fixtures	private	3.0	420	10.0	-
10. Rothmans cigrettes co.	private	1.0	175	5.0	-
11. Pegeut spare parts factory	"	10.0	420	10.0	-
12. Insulated cables	joint venture	7.07	185	5.0	11,500 ton
13. Plastic containers	private	0.75	210	5.0	

Table 'A-3', Proposed Industries in Bilbeis Town

Project	Ownership	Investment 'L.E. mullon'	Employees	Area 'feddan'	Production
1. Cloth making dress	joint venture	1.1	150	5.0	6000,000 peices
2. Leather making dress	"	1.0	150	5.0	105,000 "
3. Training centre	"	2.0	100	5.0	200 trainers
4. Ceramic tiles	private	-	58	3.5	360,000 m^2
5. Hollow cement brick	"	-	92	5.0	8.4 mill. bricks +
6. Aluminium doors & windows	"	-	100	3.0	200 tons
7. Oil processor	public	5.8	720	20.0	2.0 million L.E.
8. Doubling the production of fruit packing factory	"	-	48	5.5	Doubling production
9. Manufacturing of cans	private	0.25	195	5.0	-
10. Carton box manufacturing	"	-	700	5.0	25,000 tons
11. Repair & maintnance unite	public	1.0	250	10.0	-

A.2.2 Second Stage, New Industrial Projects 'After 1976'

Table 'A-2', summarizes all industrial projects that have been established after 1976, whether already started production in 1981, or still under-construction 'expected to start by 1985'.

A.2.3 Third Stage, Proposed Industrial Projects

Table 'A-3', summarizes the proposed industrial projects by 'the General Organization of the Investments of Arab and Foreign Capital' to be allocated in Bilbeis town, but no action towards implementation has been taken yet.

A.3 THE EFFECT OF THE INDUSTRIAL DEVELOPMENT ON BILBEIS TOWN SOCIETY _ COMPARATIVE ANALYSIS

Many changes have-taken place in Bilbeis town society as a reaction to its industrial development. A comparative study is carried out, in order to identify major changes in the population growth, demographic characteristics, the employment structure and the physical growth of the town

A.3.1 Population Grpwth Trends and Changes in the Main Demographic Characteristics.

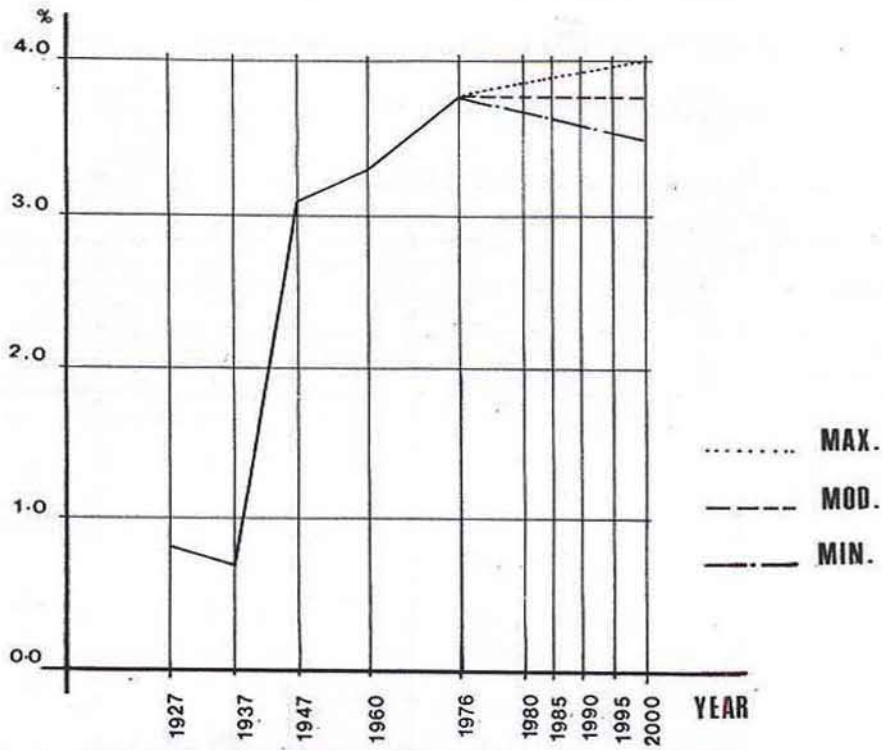
Several demographic phenomena could be observed by comparing the two intercensal periods '1927-1960' and '196-1976'. Major changes in the demographic charectaristics of Bilbeis town, in addition to its population growth trends during these two intercensal periods are summarized hereafter:

i) The average annual growth rate of Bilbeis population during the inter-censal ' 1927-1960', was lower than that of Egypt urban population. In the following intersencal '1960-1976', the rate of urban population growth of Egypt decreased[1/], while that of Bilbeis town continued to increase, socring a substantial rise to reach 3.8% exceeding that of urban Egypt, urban Sharkia and Sharkia Governorate, figs. 'A-5' and 'A-6'. Table 'A-4', follows-up the population growth and the average annual population growth rates of Bilbeis town, urban Egypt, urban Sharkia and Sharkia Governorate between '1927-1976'.

ii) The difference between the average annual growth rate of Bilbeis, and its 'average' natural increase rate '3.1%' in 1976, shows that the Town has achieved a net average annual inward-migration during the inter-censal 1960-1976 of about '0.7%'. This reflects that, Bilbeis town has started to be a magnet for its surrounding areas.

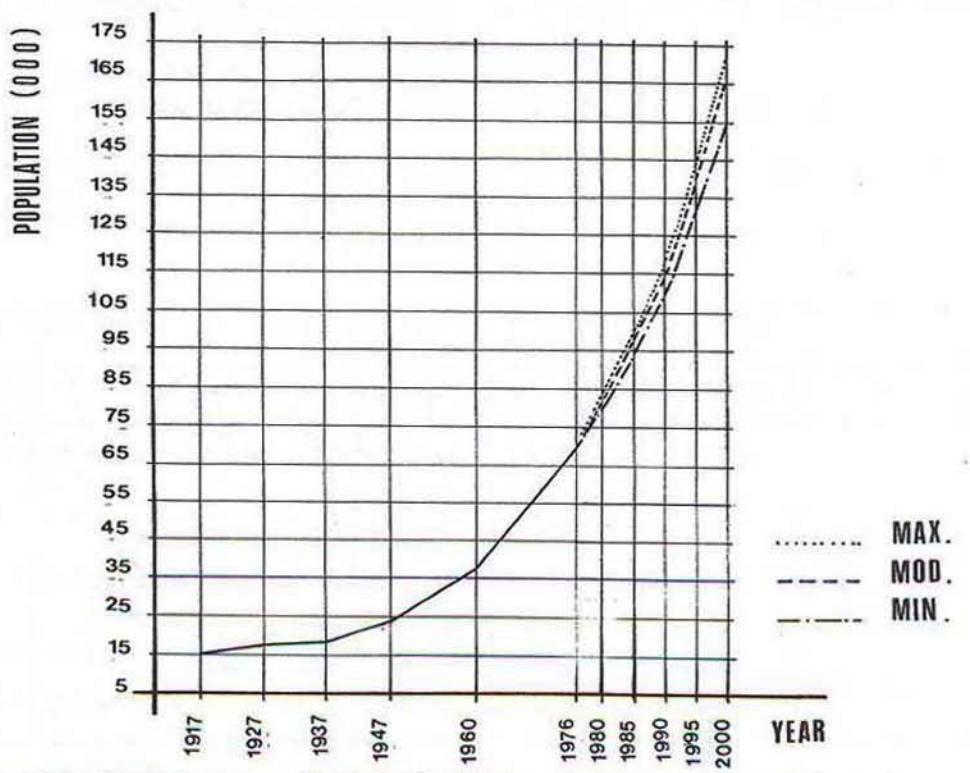
iii) The increasing ratio of the productive age groups '15-24' in Bilbeis town, showed in 1976 census, proves that the town has started to attract population, especially those in the age group '15-44'. The increase of the productive age groups '15-64' of Bilbeis from 49,7% to 54.7% of the total population in 1960 and 1976, respectively, could be shown in table 'A-5'. In spite of this increase, Bilbeis is still lower than that of urban Sharkia and Zagazig city 'all figures shown in table (A-5) are percentages of total population'. In fact Bibleis town has the highest average sex ratio of productive population '15-60' compared with Bilbeis county, urban Sharkia and Sharkia governorate '113.1, 103.5, 107.4 and 102.2 males per 100 femals, respectively'. This brings Bilbeis to the second rank after Zagazig city, which is the Governorate capital.

1/ Due to the high rates of external migration to the Arab countries.



ANNUAL POPULATION GROWTH RATE 1927 — 2000

Fig. No.: A_5



POPULATION GROWTH, 1917 — 2000

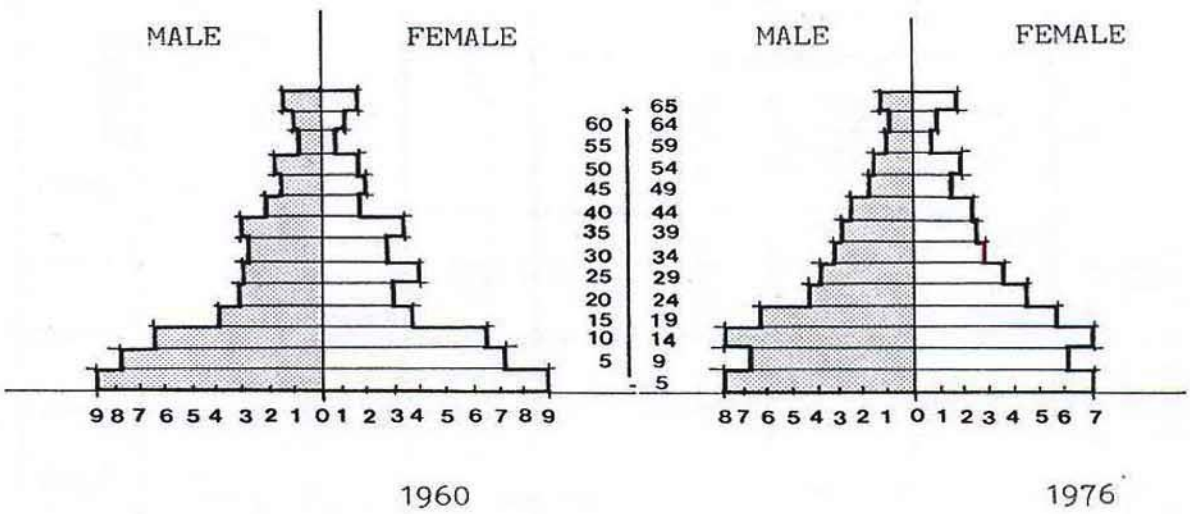
Fig. No.: A_6

Table 'A-4', Population Growth and Average Annual Population Growth Rates of Bilbeis Town, Sharkia Governorate, Urban Sharkia and Urban Egypt, 1927 - 1976.

Year	Bilbeis Town		Sharkia Govern		Urban Sharkia		Urban Egypt	
	Population	Growth Rate %	Population	Growth Rate %	Population	Growth Rate %	Population	Growth Rate %
1927	16,992		1,016,912		-		3,715,840	
		0.7		1.0		-		1.7
1937	18,215		1,120,826		148,655		4,382,083	
		3.1		2.0		2.4		3.5
1947	24,814		1,345,829		189,082		6,202,316	
		3.3		2.7		3.2		3.5
1960	37,941		1,819,795		285,772		9,651,097	
		3.8		2.3		3.4		3.1
1976	69,102		2,617,577		989,301		16,033,719	

Table 'A-5', Age Group Structure ' % of total population ' of Bilbeis Towns Sharkia Governorate, Urban Sharkia and Zagazig City, 1960 - 1976.

Age Structure	1960				1976			
	Bilbeis town	Sharkia Govern.	Urban Sharkia	Zagazig city	Bilbeis town	Sharkia govern.	Urban Sharkia	Zagazig city
0 - 14	47.1	44.0	46.1	45.6	42.6	42.1	38.2	34.6
15 - 44	38.2	39.6	39.6	40.0	44.2	41.5	46.5	49.8
45 - 64	11.5	13.1	11.7	11.7	10.5	12.9	12.2	12.7
65 +	3.2	3.3	2.9	2.7	2.7	3.5	3.1	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0



AGE GROUP STRUCTURE OF BILBEIS TOWN, 1960-1976.

All previously mentioned demographic indicators illustrate how the industrial development that took place in Bilbeis town during the past two decades, has affected the population growth of the town and their demographic characteristics.

A.3.2 Changes in Employment Structure

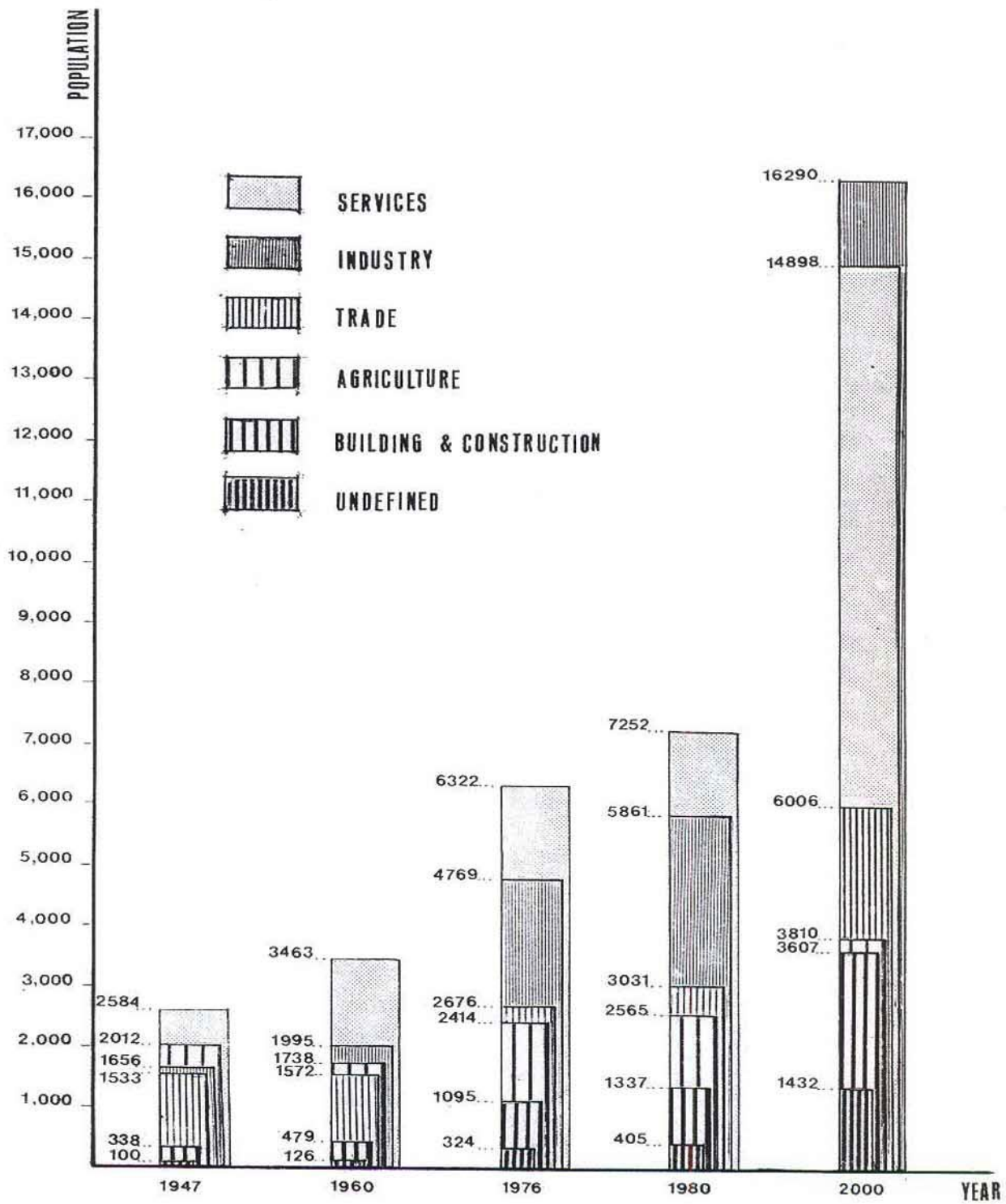
It has been previously mentioned that, Bilbeis town has started to become an attractive area for its surrounding hinterlands since 1960, when El-Gut factory started productior. In 1976 it becam cleare that, industrial activity is a basic one and its importance has been increased after 1976 due to the several industrial projects established since that time.

Industry, as a production activity in comparison to other activities such as services, trade, agriculture ... etc., may be a good indicator for the income development. A follow-up for the town employment structure since 1947 to 1976 with its estimated figures in 1980 and its future expectations

Table 'A-6', Bilbeis Town Employment Structure, 1947-2000

Activity \ Year	1947		1960		1976		1980		200	
	No.	%	No.	%	No.	%	No.	%	No.	%
Agriculture	2,012	24.5	1,738	18.5	2,414	13.72	2,565	12.54	3,810	8.29
Industry 1/	1,656	20.1	1,995	21.28	4,769	27.09	5,861	28.66	16,290	35.45
Building & Construction	338	4.1	479	5.12	1,095	6.23	1,337	6.54	3,607	7.85
Trade	1,533	18.64	1,572	16.8	2,676	15.2	3,031	14.82	6,006	13.07
Services 2/	2,584	31.76	3,463	36.55	6,322	35.92	7,252	35.46	14,898	32.42
Undefined Activities	100	1.21	126	1.35	324	1.84	405	1.98	1,342	2.92
Total	8,223	100.0	9,373	100.0	17,600	100.0	20,451	100.0	45,953	100.0

1/ Industry, includes mining and Quatrrying.
2/ Services, include transportation and utilities.



EMPLOYMENT STRUCTURE , 1947_2000

Fig. No.:
A_7

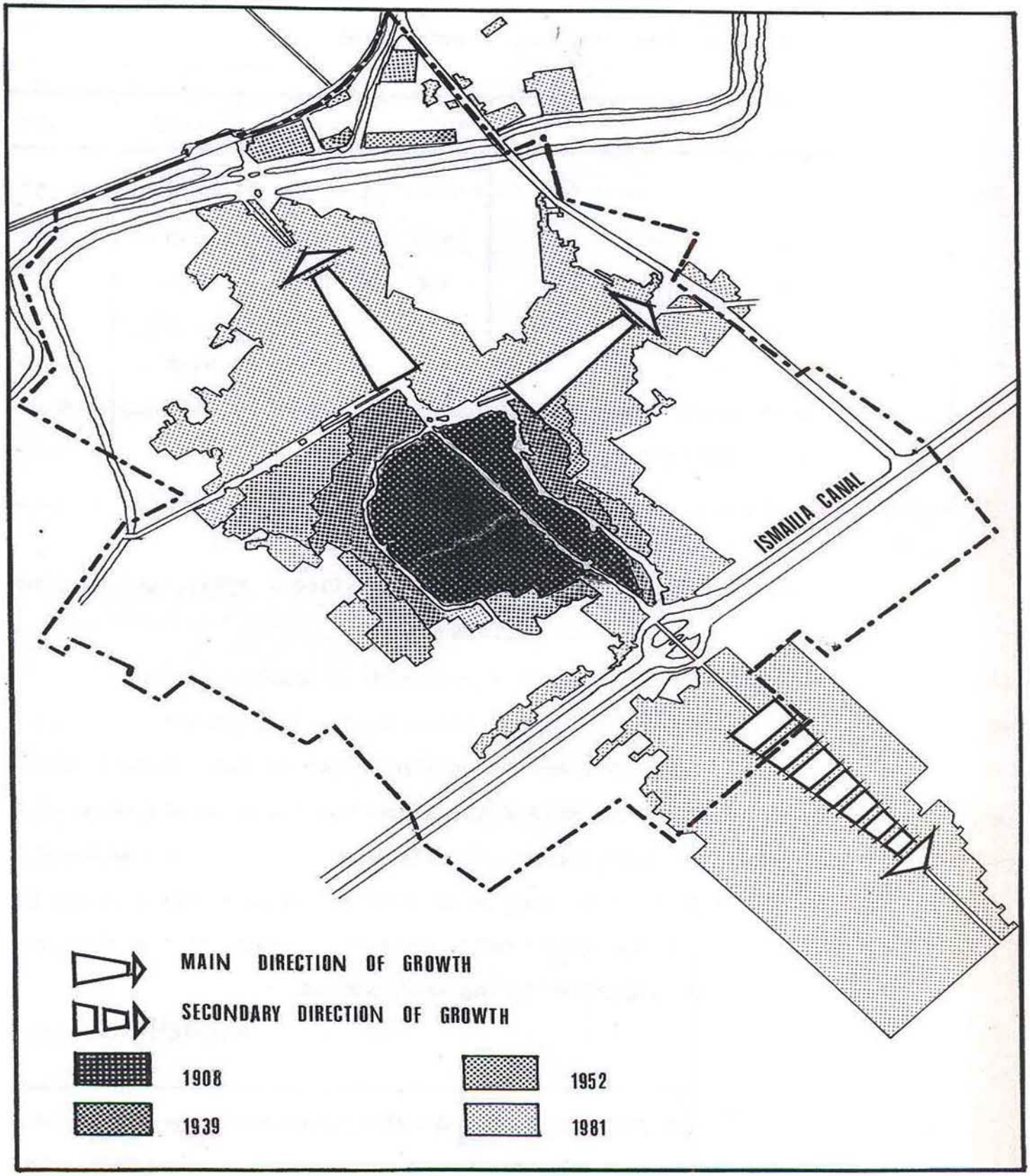
up to the year 2000 is carried out considering all job opportunities in differ-different economic sectors on the light of existing, under construction and proposed development projects within Bilbeis town area up to the year 2000, fig. 'A-7'.

Table 'A-6', indicates the change in the employment structure of Bilbeis town between 1947-1976, and its future expectations to the year 2000. It illustrates how the industrial activity has been grown rapidly that, it would be the main economic activity by the year 2000, instead of being the second basic activity after services in 1976.[1/]

A:3.3 Physical Growth Rate and Its Directions

The physical growth of Bilbeis town between '1908-1981' could be divided into three main stages, namely: '1908-1939', '1939-1952' and '1962-1981', fig. 'A-8'. The last stage is the most important one, as the built-up area of the town has grown rapidly and extended across Ismailia canal. This could be illustrated from table 'A-7', as follows :

1/ Changes in employment structure has been used as an indicator for the effect of industrial development in Bilbeis on the economic resources of the towns, instead of the study of income distribution due to the lack of necessary data.



AXES OF PHYSICAL GROWTH, 1908 — 1981

Fig.. No.:
A-8

Table 'A-7', Bilbeis Town Physical Growth, 1908 - 1981

Year	1908	1939	1952	1981
Total population	-	19,380	29,129	81,939
Overall area[1/] 'feddan'	500	500	500	1222
Built-up area 'feddan'	116	170	211	593
% of the Built-up Area to the total area	23.2	34.0	42.2	48.5[2/]
Annual avrage growth rate	-	1.5	1.85	6.24
Total population density	-	114	138	166

Due to the importance of the last stage '1952 - 1981', it could be subdivided into three stages as follows :[3/]

i) '1952 - 196' ..

Main physical constraints to the growth of the built-up area (Bilbeis drain, the Delta railway and the lakes to the west of the town) had been demolished during this period. This has enabled the physical growth of the town to be directed towards the railway station to the North. On the other hand, no major changes in the physical growth rate are expected during that period.

1/ Overall area is the total area within the administrative boundaries of the town.

2/ Built-up area has grown rapidly during this period that it would exceed the overall area of the town if it was not increased from only 500 to 1222 feddans.

3/ No detailed maps for the built-up area for each stage are available.

ii) '1960 - 1970' ..

The physical growth of the town has directed towards the South across Ismailia Canal where the Air-Force Academy and El-Gut factory are located. The rapid physical expansion of Bilbeis has started during this period.

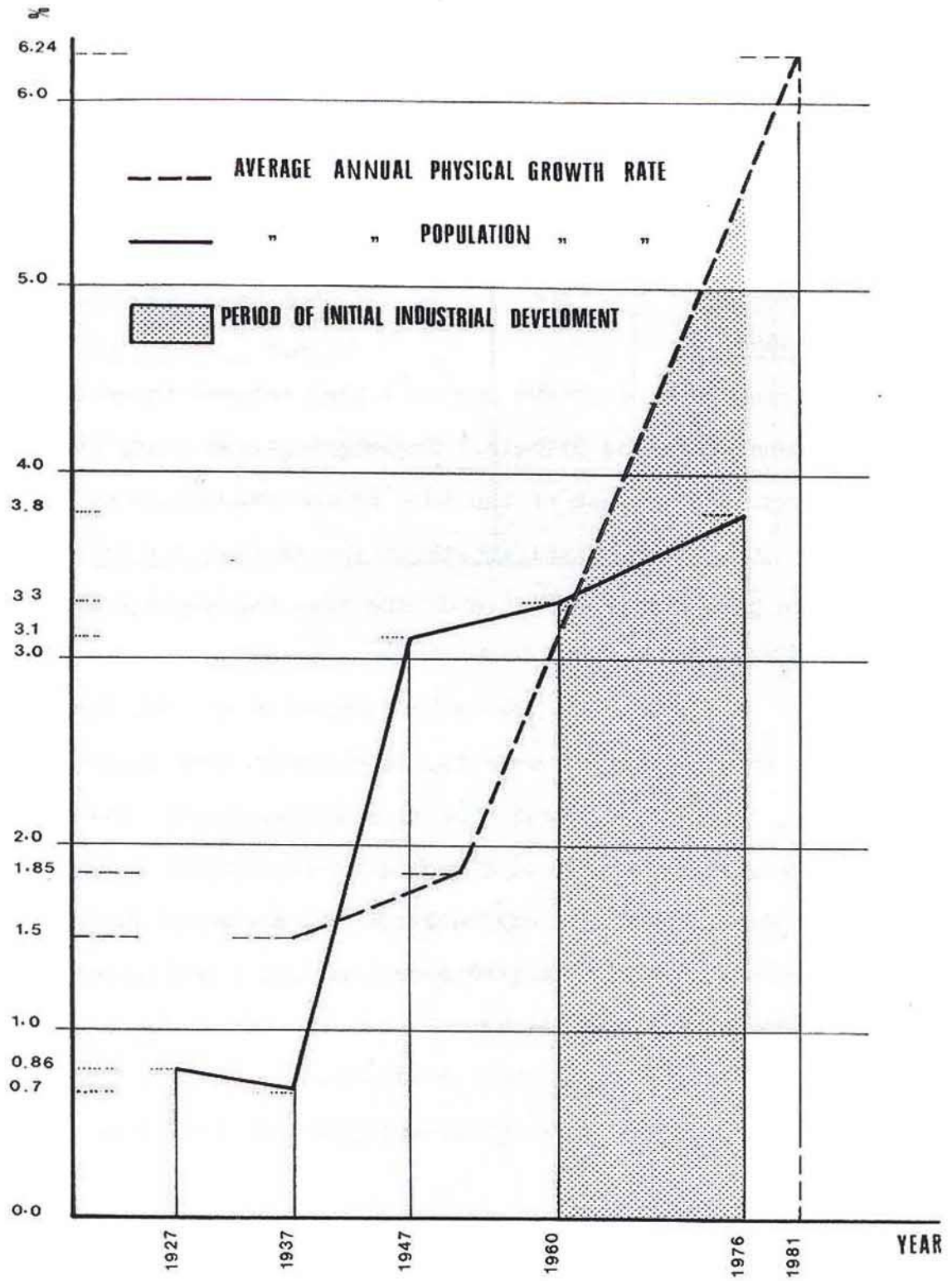
iii) '1970 - 1981' ..

The construction of the regional link between Cairo-Ismailia agricultural road and Bilbeis - Zagazig regional road, Abdel Monem Riyad road, to the East of the town by the begninning of the seventies, has attracted the physical growth to the eastern direction. Furthermore, the physical growth rate of the town has experienced more increase.

Generally speeking, there were two main growth axes since 1908 up till 1981. The first, is the North-West direction alongside the main spine of the town towards the railway station and fruits packing factory. The second, is the North-East axis towards the regional link 'Abdel Monem Riyad road' Moreover, there is another important growth axis to the South of the town across Ismailia canal towards El-Gut factory.

A.4 SYNOPSIS

The industrial development commenced in Bilbeis town in 1960, has strongly affected its different sectors of life. The town urban growth was attracted by industry creating a new axis towards the South in the direction of new industrial developments, in spite of the presence of Ismailia canal, (a strang physical barrier). On the other hand, the average annual population



THE EFFECT OF THE INDUSTRIAL DEVELOPMENT ON PHYSICAL AND POPULATION GROWTH

Fig. No.: A_9

growth rate has been increased, accompanied by a remarkable increase in the percentage of the productive age groups, due to the inward-migration '0.7% annualy' which has been experienced by the town between 1960-1976. Furthermore, the employment structure changed due to the growth of industrial activities, which affected both the income levels and the spatial distribution of those income groups over the town. Fig. 'A-9', illustrates the effect of the industrial development on physical and population growth rates of Bilbeis.

Another important conclusion that could be drawn from the case study of Bilbeis town, is the role of public and private sectors in the development process of such a middle size town. The major change in the industrial base of Bilbeis has been carried-out throught the public sector who established El-Gut and fruit-packing factories by the beginning of the sixties. Thus, in developing any similar town, the government must be responsible for the intial stage in order to encourage the private sector fully participate and to take part at the following stages. It rather risky and uncertain to depend only upon the activities of the private sector to start such a comprehensive development, even if the town enjoys locational advantages and industrial potentialities.

APPENDIX (B)

TABLES

Table 'C-1'**, Key Features of Alternative A

Zone	Comments	Urban Trend Population	Urban Targeted Population	Urban Change From Trend	Implied Zone 1985 - 2000 Migration *
Cairo	Expansion at trend growth rates; infill in Greater Cairo; fringe expansion on East-West corridors; satellites and new intra-regional infrastructure.	16.33	16.35	+ .02	+ 1.66
Alexandria/West	Emphasis on Alexandria Metropolitan Region, infill to higher densities, New Ameriya development. Limited expansion in Northwest coast at trend rates.	4.59	5.60	+1.01	+ 1.01
Canal	Expansion of Canal Cities to current master plant estimates.	2.20	2.20	0	+ 0.60
Delta	Within boundary population growth in Benha; Kafr El-Sheikh Mansoura; and possibly Kafr El-Zayat and Shebin El-Kom as regional service centers; restriction on industrial expansion; improved feeder roads to serve agricultural areas; limitations on urban use of arable land.	8.01	7.45	-0.56	- 3.12
North Upper Egypt	Planned expansion of Fayoum and Beni Suef at higher densities; Fayoum to 400,000 population and Beni Suef to 500,000.	1.83	2.00	+0.17	- 0.97
South Upper Egypt	Emphasis on growth in Qena, Naga-Hammadi and Aswan; Qena to 700,000, Naga-Hamadi to 100,000 and Aswan to 400,000.	3.63	3.20	-0.43	- 1.66
Remote Areas:		0.40	0.20	-0.20	- 0.60
Red Sea Western Desert Sinai	No major expansion in these zones				
General	Other cities, not included for specific emphasis, are considered for infrastructure maintenance and possible upgrading - i.e. as secondary cities.				

* The implied zone migration represents the difference between the targeted population for the zone and the population it would have if it grew at trend growth rates to 1985 and at the rate of natural population increase from 1985-2000.

** Source: PADCO, INC. with Engineering Consultants Group and El-Hakim S. & Associates, The National Urban Policy Study (Interim Action Report), P.72, Cairo, January 31, 1981

Table 'C-2'**, Key Features of Alternative B_1

Zone	Comments	Urban Trend Population	Urban Targeted Population	Urban Change From Trend	Implied Zone 1985 - 2000 Migration *
Cairo	Expansion of Cairo at near natural increase rates; maximum encouragement of out migration and migration diversion to other major metropolitan centers; reauires all elements of infill, fringe and new center development.	16.33	15.00	- 1.33	+ 0.32
Alexandria/West	Same as Alternative A.	4.59	5.60	+ 1.01	+ 1.01
Canal	Expansion of Ismailia as new major metropolitan center, expansion on corridors plus new satellite development on both sides of Canal; expansion of Port Said over current plan total due to increased port reauirements.	2.20	4.00	+ 1.80	+ 2.40
Delta	Same as Alternative A except that more outmigration is expected.	8.01	7.00	- 1.01	- 3.57
North Upper Egypt	Same as Alternative A except for additional expansion of Minya to 400,000.	1.83	2.20	+ 0.37	- 0.77
South Upper Egypt	More limited development of Qena, Naga-Hamadi and Aswan than in Alternative A.	3.63	3.00	- 0.63	- 1.86
Remote Areas:		0.40	0.20	- 0.20	- 0.06
Red Sea Western Desert Sinai	Same as alternative A.				
General	Other cities, not included for specific emphasis are considered for infrastructure maintenance and possible upgrading - i.e. as secondary cities.				

* The implied zone migration represents the difference between the targeted population for the zone and the population it would have if it grew at trend growth rates to 1985 and at the rate of natural population increase from 1985-2000.

** Source: PADCO, INC. with Engineering Consulatants Group and El-Hakim S. & Associates, The National Urban Policy Study (Interim Action Report), P.76, Cairo, January 31, 1981.

Table 'C-3'**, Key Features of Alternative B_2

Zone	Comments	Urban Trend Population	Urban Targeted Population	Urban Change From Trend	Implied Zone 1985 - 2000 Migration *
Cairo	Expansion at slightly above natural increase rates; otherwise similar to B1	16.33	15.20	- 1.01	+ 0.51
Alexandria/West	Concentration on Alexandria Metropolitan zone; lower rate of expansion than B1; otherwise similar to B1 and A.	4.59	4.50	- 0.09	- 0.09
Canal	Same as B1 except for more limited development of Ismailia.	2.20	3.00	+ 0.80	+ 1.40
Delta	Same as Alternative A except for expected rate of migration.	8.01	7.30	- 0.71	- 3.27
North Upper Egypt	Expansion of Fayoum, Beni-Suef and Minya as in B1; creation of majore new center on East Bank of Nile at Beni Suef and Fayoum.	1.83	3.00	+ 1.17	+ 0.03
South Upper Egypt	Expansion of Qena, Naga-Hamadi, Aswan; planned limited expansions in Assiut, Sohag additional development in High Dam Lak area.	3.63	3.40	- 0.23	- 1.46
Remote Areas:		0.40	0.60	+ 0.20	+ 0.34
Red Sea Western Desert Sinai	Partial implementation of Red Sea governorate plan to expand Ghardaka, Safaga and Ras Gharib to 400,000; expansion of Kharga and Mut to serve agriculture in Western Desert to 150,000; expansion at Arich to 50,000.				
General	Other cities, not included for specific emphasis, are considered for infrastructure maintenance and possible upgrading - i.e. as secondary cities.				

* The implied zone migration represents the difference between the targeted population for the zone and the population it would have if it grew at trend growth rates to 1985 and the rate of natural population increase from 1985-2000.

** Source: PADCO, INC. with Engineering Consultants Group and El-Hakim S. & Associates, The National Urban Policy Study (Interim Action Report), P.80, Cairo, January 31, 1981.

Table 'C-4'**, Key Features of Alternative C

Zone	Comments	Urban Trend Popu-lation	Urban Targeted Popu-lation	Urban Change From Trend	Implied Zone 1985 - 2000 Migration *
Cairo	Greater expansion than in B1 and B2; otherwise similar to B2	16.33	15.50	- 0.83	+ 0.82
Alexandria/West	Expansion of Alexandria to 4 million; growth at less than trend growth; expansion of Northwest coast at levels in Northwest coast plan (750,000).	4.59	4.75	+ 0.16	+ 0.16
Canal	Planned development of Ismailia as reduced major center (1.25 million); otherwise as in current plans.	2.20	2.95	+ 0.75	+ 1.35
Delta	Same as Alternative A except for the anticipated migration.	8.01	7.00	- 1.01	- 3.57
North Upper Egypt	Same as Alternative A.	1.83	2.00	+ 0.17	- 0.97
South Upper Egypt	Major expansions in Qena and Naga-Hamadi, expansion of Aswan and High Dam Lake at currently planned levels (High Dam Lake Study); limited expansion of Assiut and Sohag.	3.63	3.50	- 0.13	- 1.36
Remote Areas:					
Red Sea	Expansion of Red Sea to population Targets in Red Sea governorate plan (700,000) Western Desert expansions at Gharga, Dakla, Ferafra and Beheira Oasis (300,000), expansion of El Arish, El Tur and rural settlements in Sinai (300,000).	0.40	1.30	+ 0.90	+ 1.04
General	Other cities, not included for specific emphasis are considered for infrastructure maintenance and possible upgrading - i.e. as secondary cities.				

* The implied zone migration represents the difference between the targeted population for the zone and the population it would have if it grew at trend growth rates to 1985 and at the rate of natural population increase from 1985-2000.

** Source: PADCO, INC.with Engineering Consultants Group and El-Hakim S. & Associates, The National Urban Policy Study (Interim Action Report), P.82, Cairo, January 31, 1981.

Table 'C-5'*, Population Growth of Middle Size Towns, 1907 - 1976.

TOWN	Governorate	· Population '1000'						
		1907	1917	1927	1937	1947	1960	1976
Rosetta	Beheira	16.8	11.9	17.5	17.5	22.5	30.0	43.0
Bosh_Isa	"	5.1	5.5	12.5	17.0	20.0	25.3	42.3
Fow	Kafr El-Sheikh	14.5	16.5	12.5	17.5	17.5	27.0	37.8
Biala	"	12.4	15.5	13.2	12.0	17.5	25.0	38.8
Talkha	Dakahlia	7.7	9.1	12.5	12.5	12.5	16.9	37.3
Sherbien	"	8.5	9.9	12.5	12.5	12.8	23.4	31.7
Dekernes	"	5.9	6.4	7.5	8.5	12.5	13.0	38.4
Manzala	"	11.4	13.1	14.5	22.5	27.5	29.6	44.0
Semenoud	Gharbia	5.6	5.9	7.0	6.0	8.5	10.4	35.4
Basyoun	"	10.5	11.8	10.0	8.0	15.0	19.5	30.5
Tala	Menoufia	15.0	16.6	17.5	17.5	17.5	23.4	30.3
Ashmoun	"	13.9	16.9	12.5	17.5	17.5	29.1	39.5
Menia-El Kamh	Sharkia	5.9	7.4	8.5	17.5	12.5	15.0	33.6
Faqus	"	7.2	8.1	8.5	20.0	22.5	36.0	39.0
Khanka	Kalyubia	5.6	7.7	3.5	14.0	17.0	22.0	32.4
Senoures	Fayoum	17.1	18.8	22.5	17.5	22.5	31.8	42.0
Bosh	Beni-Suef	12.8	13.8	13.2	13.0	16.0	19.2	40.15

Table C-5 'Contd'.*, Populaton Growth of Middle Size Towns, 1907 - 1976.

TOWN	Governorate	Population '1000'						
		1907	1917	1927	1937	1947	1960	1976
Biba	Beni-Suef	10.2	12.6	12.5	12.5	16.0	20.8	33.0
Fashn	"	11.4	13.8	12.5	17.5	12.5	26.0	33.5
Maghagha	Minya	8.6	10.4	12.5	12.5	17.5	28.7	40.8
Beni-Mazar	"	8.6	11.7	12.5	17.5	22.5	30.6	39.4
Fikriya	"	6.5	15.3	6.0	8.5	17.5	15.0	33.5
Dayrout	Assiut	5.7	10.8	17.5	17.5	17.5	24.4	31.6
Quseia	"	10.0	11.2	11.8	16.5	19.0	23.1	31.4
Manfalowt	"	14.5	15.5	17.5	17.5	22.5	28.5	41.1
Abnoub	"	6.9	7.5	8.5	12.5	21.0	27.8	37.4
Abu-Tig	"	12.0	14.3	17.5	17.5	17.5	24.2	36.0
Tema	Sohag	14.3	16.5	17.0	17.5	17.5	10.7	35.0
Qus	Qena	10,9	14.6	8.5	17.5	17.5	24.6	33.1
Armant	"	12.5	20.9	17.5	14.0	18.0	22.5	42.2
Esna	"	19.1	17.3	12.5	17.5	22.5	25.3	34.2
Edfo	Aswan	12.6	13.5	8.5	6.0	15.0	25.1	34.9
Kom-Ombo	"	8.0	20.2	12.5	8.0	13.0	21.8	44.5

* Source: Farid, K. Rafik, Temporal Analysis of Settlement Size Distribution and Economic Development: Egypt, 1882-1966, Faculty of Graduate school, Cornell University (PH.D. Thesis), Volume 2, U.S.A., January 1978.

Table 'C-6'*, Average Annual Population Growth Rates of Middle Size Towns, 1907 - 1976.

TOWN	Governorate	Average Annual Population Grpwth Rate (%)					
		1907-1917	1917-1927	1927-1937	1937-1947	1947-1960	1960-1976
Rosetta	Beheira	- 3.38	3.93	0.0	2.54	2.23	2.27
Hosh_Isa	"	0.7	8.55	3.12	1.63	1.82	3.26
Fow	Kafr El-Sheikh	1.30	- 2.73	3.42	0.0	3.39	2.12
Biala	"	2.25	- 1.59	- 0.94	3.84	2.78	2.78
Talkha	Dakahlia	1.68	3.22	0.0	0.0	2.34	5.07
Sherbien	"	1.53	2.35	0.0	0.23	4.75	1.91
Dekernes	"	0.81	1.59	1.25	3.93	0.30	7.00
Manzula	"	1.40	1.02	4.49	2.02	0.56	2.50
Semenoud	Gharbia	0.52	1.72	- 1.52	3.54	1.56	7.95
Basyoun	"	1.17	- 1.64	- 2.20	6.48	2.03	2.83
Tala	Menoufia	1.01	0.52	0.0	0.0	2.26	1.62
Ashmoun	"	1.97	- 2.97	3.42	0.0	3.98	1.92
Minia El-Kamh	Sharkia	2.29	1.39	3.93	0.0	1.41	5.17
Faqus	"	1.18	0.48	8.93	1.18	3.68	0.50
Khanka	Kalyubia	3.23	- 7.58	14.87	1.96	2.00	2.44
Senoures	Fayoum	0.95	1.81	- 2.48	2.54	2.69	1.75
Bosh	Beni-Suef	0.75	- 0.44	- 0.15	2.09	1.41	4.71

Table C-6 'Contd'*, Average Annual Population Growth Rates of Middle Size Towns, 1907 - 1976.

TOWN	Governorate	Avarage Annual Population Growth Rat (%)					
		1907-1917	1917-1927	1927-1937	1937-1947	1947-1960	1960-1976
Biba	Beni-Suef	2.13	- 0.07	0.0	2.49	2.03	2.92
Fashn	"	1.92	- 0.98	3.42	- 3.30	5.79	1.59
Maghagha	Minya	1.91	1.85	0.0	3.42	3.87	2.22
Beni-Mazar	"	3.36	0.66	3.42	2.54	2.39	1.59
Fikriya	"	8.93	- 8.93	3.54	7.48	- 1.17	5.15
Dayrout	Assiut	6.59	4.94	0.0	0.0	2.59	1.62
Quseia	"	1.14	0.5	3.40	1.42	1.51	1.93
Manfalout	"	0.66	1.22	0.0	2.54	1.83	2.31
Abnoub	"	0.83	1.25	3.63	5.32	2.18	1.87
Abu-Tig	"	1.76	2.04	0.0	0.0	2.52	2.51
Tema	Sohag	1.44	0.29	0.29	0.0	- 3.71	7.68
Qus	Qena	2.96	- 5.2	7.48	0.0	2.65	1.87
Armant	"	5.2	- 1.75	- 2.20	2.54	1.73	4.00
Esna	"	- 0.98	- 3.19	3.42	2.54	0.90	1.90
Edfo	Aswan	0.69	- 4.5	- 3.42	9.59	4.04	2.08
Kom-Ombo	"	9.70	- 4.68	- 4.36	4.97	4.05	4.56

* Source: Average Annual Population Growth Rates are accounted by the auther.

Town	Governorate	Economic Activities									Active Population	Un Active Population	Total Population
		Agriculture Hunting	Mining	Industry	Electricity Gas & Water	Construction	Trading Hotels	Transportation	Financing Insurence	Public services	Un-defined Activities			
Rosetta	Beheira	2407		3231	36	440	2202	878	93	2290	210	11799	21545	33344
Kosh-Isa	"	8052		516	23	283	1520	345	49	955	135	11888	19135	31023
Fowa	Kafr El-Sheikh	2706		4106	72	230	1562	469	80	1600	307	11166	20332	31498
Biyala	"	6068		924	50	299	777	335	104	2299	87	10947	21692	32639
Talkha	Dakahlia	1028		2327	474	521	917	829	129	3321	142	9707	21840	31547
Sherbien	"	1779		1220	235	421	1613	751	170	2341	116	8550	18695	27295
Dekernes	"	3425		1485	45	231	1480	904	142	2703	135	10564	22058	32622
Manzala	"	2874		2373	59	637	2746	1128	125	2443	267	12666	24090	36756
Semmenoud	Gharbia	1757		339	50	426	1201	429	91	2236	180	9432	20297	29729
Basyoun	"	3518		1236	29	443	960	388	93	1758	70	8513	17257	25770
Kafr El-Zayat	"	403		3799	85	561	1743	1160	210	3881	155	12017	26738	38755
Tala	Menoufia	986		879	59	214	841	512	124	2535	125	8279	17520	25799
Ashmoun	"	5168		1384	80	279	1337	499	103	2368	133	11366	21012	32378
Menia El-Kamh	Sharkia	627		1522	54	377	1428	742	192	3763	142	8862	19568	28430
Faqus	"	852		1634	11	489	1922	946	170	2957	151	10172	22900	33072
Kanaia	Kalyubia	1305		1267	49	490	568	398	50	2118	767	7033	19370	26403
Senoures	Fayoum	5413		2568	37	315	1310	427	87	2060	437	12657	21640	34297
Beni	Beni-Suef	8537		892	28	265	711	299	35	1239	70	12083	20527	32710
Biba	"	2573		960	36	344	1365	657	107	2604	172	8825	18854	27679
Fashn	"	2984		986	67	341	1496	531	113	2278	156	8961	18994	27955
Magnagna	Minia	2208		1160	63	295	1778	813	181	3020	294	9828	23157	32985
Beni-Mazar	"	1848		1468	88	358	1605	935	188	7676	565	9755	23059	32814
Fikriya	"	1756		1598	63	240	1165	460	125	2251	294	7961	19776	27737
Dayrout	Assuit	1407		1118	58	201	1526	727	156	2516	119	7836	18295	26131
Quseia	"	4506		615	30	180	1229	342	96	1395	89	8685	16535	25220
Manfalout	"	4655		984	40	285	1609	615	136	2477	95	10898	22264	33162
Abnout	"	7742		375	43	118	712	274	96	1335	128	10823	21114	31937
Abu-Tig	"	1761		2211	96	314	1639	650	134	2505	141	9460	20320	29780
Tema	Sohag	2294		737	43	354	2156	759	128	2317	296	9099	19916	29015
Tanta	"	1918		2457	35	655	2607	398	177	2934	269	11759	25004	36763
Qus	Qena	1394		1571	51	631	2075	545	141	1491	119	8020	19196	27216
Armant	"	6197		1957	34	244	679	451	40	1196	247	11056	24754	35810
Esna	"	3819		881	90	363	1380	484	84	1752	148	9043	19061	28104
Aswan	Aswan	3708		879	101	290	959	467	98	2099	307	8924	21645	30569
Kom-Ombo	"	3142		2487	121	771	1446	646	78	2114	305	11124	27067	38191

Source : Central Agency for Public Mobilization and Statistics, General Census, Cairo, 1976.

جامعة القاهرة
كلية الهندسة
قسم العمارة

دور المدن المتوسطة الحجم في التنمية الحضرية في مصر

رسالة مقدمة من

المهندس المعماري / فيصل عبد المقصود عبد السلام

تمهيداً للحصول على درجة الماجستير في تخطيط المدن

تحت إشراف

الأستاذ الدكتور / محمود يسري
قسم العمارة - كلية الهندسة
جامعة القاهرة
عميد معهد التخطيط العمراني
جامعة القاهرة

دكتور / سيد محمد التوني
قسم العمارة - كلية الهندسة
جامعة القاهرة

ابريل ١٩٨٣

بسم الله الرحمن الرحيم

"وَقُل رَّبِّ زِدْنِي عِلْمًا"

بسم الله الرحمن الرحيم

دور المدن المتوسطة الحجم فى التنمية الحضرية فى مصر

" ملخص الرسالة "

تتناول هذه الرسالة موضوع المدن المتوسطة الحجم لكونها احدى المكونات الهامة للهيكل العمرانى فى مصر وذلك على الرغم من اهمالها طوال الفترة الماضية . وتركز الرسالة على دراسة امكانيات نمو هذه المدن مع اختيار اصلحها للتنمية وذلك فى اطار عدد من انماط التوزيع الجغرافى التى يمكن من خلالها أن تلعب هذه المدن دورا ايجابيا فى التنمية الحضرية فى مصر على المستويين الاقليمى والقومى .

والهدف الاساسى لهذا البحث هو محاولة ايجاد وسائل لزيادة كفاءة الهيكل العمرانى فى مصر حتى يصبح قادرا على استيعاب الاعداد المتزايدة من سكان الحضر عن طريق العمل على احياء وتنمية المستقرات العمرانية الموجودة وذلك كسياسة قصيرة المدى يمكن تطبيقها الى جانب الاستراتيجيات طويلة المدى " وهى التى تحتاج الى استثمارات ضخمة لتحقيقها " مثل خلق مستقرات عمرانية جديدة لمواجهة الزيادة المستقبلية فى اعداد سكان الحضر.

وتشتمل هذه الرسالة على ستة فصول تغطى العناصر المختلفة لهذا الموضوع يمكن تلخيصها كالتالى :

الفصل الاول :

وهو مقدمة تتناول بايجاز الخطوط العريضة لتجربة التنمية فى العالم وما صاحبها من مشكلات خلال العقود الثلاثة الماضية ، مع التركيز على ظاهرة الانفجار السكانى والزيادة الكبيرة لسكان الحضر فى الدول النامية والمشكلات المصاحبة لذلك واسبابها. كذلك يحاول هذا الفصل تحديد موقع مصر كدولة نامية وموقفها من هذه المشكلات لكونها ذات تجربة رائدة فى التنمية تمتد حتى بداية الخمسينات.

الفصل الثانى :

ويشتمل على دراسة متفحصة لاتجاهات النمو السكانى والحضرى فى مصر خلال الفترة من نهاية القرن التاسع عشر حتى الان والتوقعات المختلفة لهذا النمو حتى سنة ٢٠٠٠ وذلك فى محاولة لتقديم تحديد واضح لمشكلة التحضر فى مصر من حيث اسبابها وأهم ملامحها واتجاهاتها المستقبلية .

الفصل الثالث :

وهو يتناول المستقرات العمرانية فى مصر بالتصنيف حسب حجم السكان وذلك فى محاولة لتقديم تعريف محدد للمدن المتوسطة الحجم مع بيان لموقعها فى كل من الهيكل العمرانى والتنظيم الادارى فى مصر. ثم يتتبع هذا الفصل نمو هذه المدن خلال العقود الاربعة الماضية ويتعرف على توزيعها الجغرافى وعلاقته بالمشكلات التى تعانى منها هذه المدن فى محاولة لتحديد الملامح العامة للمدن متوسطة الحجم فى مصر .

الفصل الرابع :

يضم هذا الفصل دراسة مقارنة للاتجاهات المختلفة لتوزيع المستقرات العمرانية وذلك فى اطار الدراسة الخاصة بالسياسة القومية للتنمية الحضرية والتى تمت موءخرا تحت اشراف وزارة التعمير والمجتمعات الجديدة . ثم يستطرد الى دراسة امكانيات الاتجاه الخاص بتنمية المدن الثانوية كوسيلة لحل مشكلات التحضر فى مصر حيث انه يمثل الاطار العام الذى يمكن من خلاله ان تقوم المدن متوسطة الحجم بدور ايجابى فى التنمية الحضرية فى مصر .

الفصل الخامس :

يقدم هذا الفصل معايير لتقييم المدن بهدف تحديد امكانية تنميتها مع تطبيق هذه المعايير على المدن متوسطة الحجم لاختيار عدد من هذه المدن ذات الامكانيات الاكبر للتنمية . كذلك يقوم عددا من البدائل المختلفة للتوزيع الجغرافى لهذه المدن ويتناول هذه البدائل بالنقد حتى يمكن اختيار احسنها والتى يمكن من خلالها أن تقوم هذه المدن بدورها فى تحقيق الاهداف الاقليمية والقومية .

الفصل السادس :

وهو يشتمل على أهم النتائج التى تم الوصول اليها من خلال هذه الدراسة والتى تهدف الى تحديد الخطوات اللازمة لتنمية المدن المتوسطة الحجم والتى يمكن تلخيصها فى التالى :

١- تركيز جهود التنمية على عدد محدد من المدن بدلا من توزيعها على كل المدن الموجودة .

٢- المدن المختارة للتنمية يجب ان تتمتع بامكانيات عالية تؤهلها لهذا الاختيار . بالاضافة الى قدرتها على استيعاب الاعداد المتزايدة من السكان

٣- اساس تنمية هذه المدن هو وجود قاعدة صناعية قوية تكون قادرة على توفير فرص جديدة للعمالة يمكن من خلالها اجتذاب السكان الى هذه المدن.

٤- يجب ان يصاحب عملية التنمية تحسين مختلف الظروف المعيشية فى هذه المدن والاهتمام بشبكات البنية الاساسية والخدمات الاجتماعية التى يساعد تحسينها على اجتذاب السكان وتشجيع سكانها الاصليين على عدم الهجرة منها.

كذلك تحتوى الرسالة على ملحقين :

ملحق أ :

ويتناول بالدراسة مدينة بلبيس كمثال للمدن متوسطة الحجم ،وذلك فى محاولة لتقييم أثر التنمية الصناعية على مختلف جوانب الحياة الاقتصادية والاجتماعية والطبيعية ،والتى يجب أن تهتم بها التنمية الشاملة اللازمة لاحياء مثل هذه المدن .

ملحق " ب " :

ويشتمل على الجداول والمعلومات الاساسية المستخدمة فى هذه الدراسة