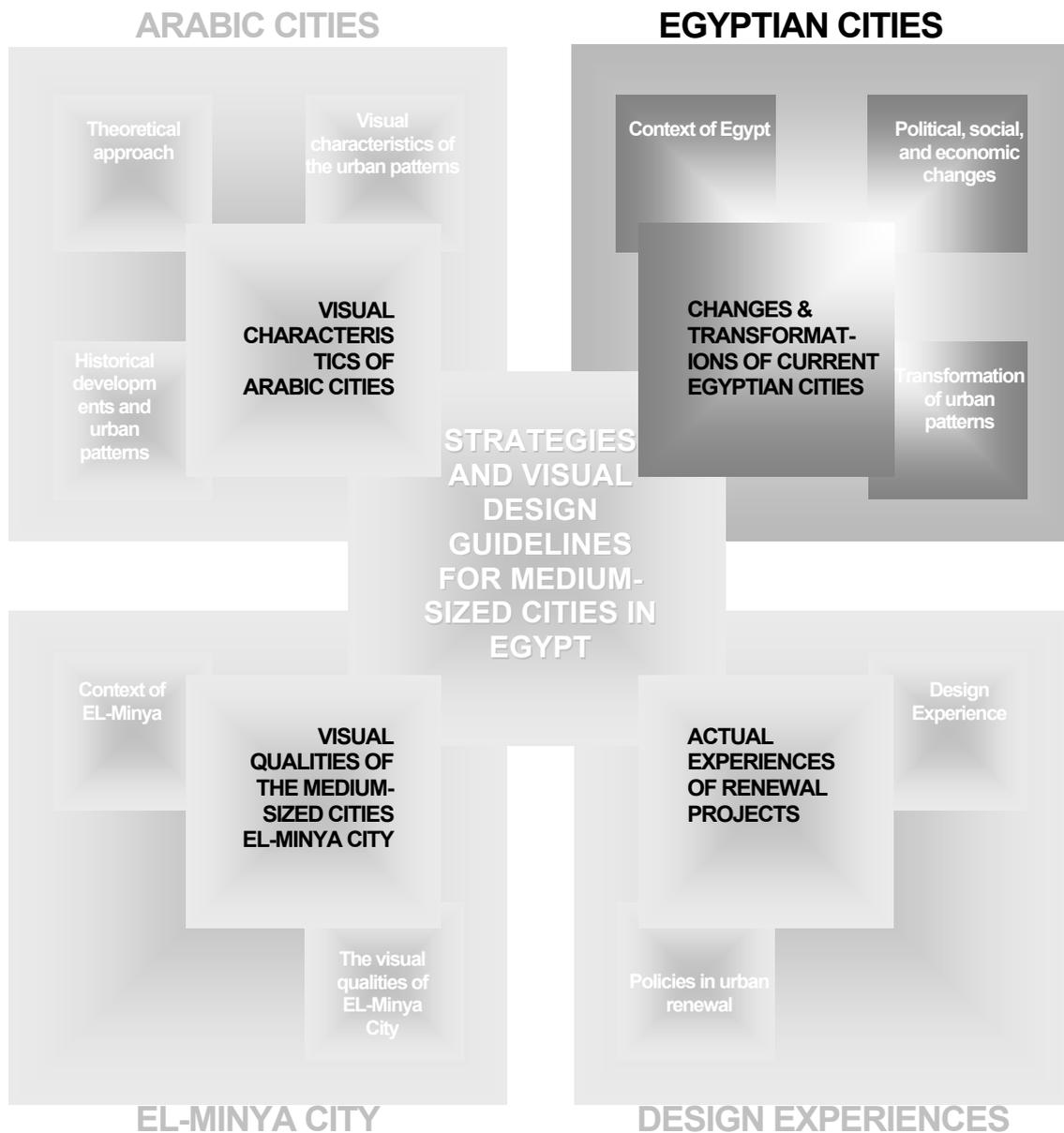


CHAPTER TWO

CHANGES AND TRANSFORMATIONS OF CURRENT EGYPTIAN CITIES

- 2.1 INTRODUCTION
- 2.2 CONTEXT OF EGYPT
- 2.3 POLITICAL, SOCIAL, AND ECONOMIC CHANGES
- 2.4 THE TRANSFORMATION OF URBAN PATTERNS
- 2.5 CONCLUSION



CHAPTER TWO

2. CHANGES AND TRANSFORMATIONS OF CURRENT EGYPTIAN CITIES

2.1 INTRODUCTION

For several reasons, the last thirty years had special interest to the search for the pattern of change in the anatomy of an Egyptian city. First, the changes, which took place in cities during this period, were faster and more important than those which took place since the beginning of the nineteenth century. Secondly, the Egyptian social order has begun losing its traditional form in this period, resulting in a transformation of the urban patterns. This change was brought about by the dynamics of social and economic forces changing the face of cities and it is continuing to this day.

The problem of transformation of urban patterns in Egyptian cities stems from different reasons. These reasons were: a rapid increase in population not matched by additional new housing units, internal migration from rural to urban centres, deterioration of old parts of the cities without upgrading or equivalent replacement, accumulation of housing shortage over the years, and finally, the increasing gap between the cost of housing and income levels.

The aim of the present chapter is to identify the main forces and factors of the current urban development in Egypt. In order to define the problem in a broader perspective, the chapter is organized in three sections. The first section focuses on the context and deals with the geographical and physical aspects, the historical developments from 1800 to 2000 and finally the urban development strategies. The second section examines the cause of urban changes from political, social, and economic perspectives. In section three, the transformation of urban patterns will be explained. The visual qualities of these patterns will be examined in detail in the next chapters.

2.2 CONTEXT OF EGYPT

2.2.1 GEOGRAPHICAL SETTING AND PHYSICAL CONTEXT

■ LOCATION AND AREA

Egypt lies on the northeast corner of Africa, bordering the Mediterranean Sea, between Libya and the Gaza Strip (27 00 N, 30 00 E). Its total area is 1,001,450 sq km (land is 995,450 sq km and water is 6,000 sq km). Land boundaries total: 2,665 km (border countries are Palestine 277 km, Libya 1,115 km, and Sudan 1,273 km). The administrative divisions include 26 governorates¹ (muhafazat, singular - muhafazah) (CIA, 2002).

■ GEOGRAPHY AND CLIMATE

The Nile River traverses the country from south to north along a line some 1,600 km long. Dividing the country into the Western Desert, a broad plain punctuated by a chain of oases, which accounts for about two thirds of the country land area, and the Eastern Desert, which rises from the Nile in a plateau of sand, giving way to a chain of rocky hills and rugged mountains running to the Red Sea. Almost 99% of the population lives within the Nile Valley and delta, which constitutes less than 4% of Egypt's total area².

The climate of Egypt is hot and dry. The coastal regions are the coolest, with mean annual minimum and maximum temperatures of 14⁰C and 30⁰C respectively. The inland and desert areas are subject to wide daily temperature fluctuations. Rainfall is highest along the coast, at 20 cm annually; inland, it decreases sharply, to just over one cm in Cairo and even less further south. In late spring (March and April), the hot khamsin winds tear across the Sahara carrying dust and sand from the desert. These sandstorms may blow intermittently for days, raising temperatures and causing air pollution.

¹ Ad Daqahliyah, Al Bahr Al Ahmar, Al Buhayrah, Al Fayyum, Al Gharbiyah, Al Iskandariyah, Al Isma'iliyya, Al Jizah, Al Minufiyah, Al Minya, Al Qahirah, Al Qalyubiyah, Al Wadi al Jadid, Ash Sharqiyah, As Suways, Aswan, Asyut, Bani Suwayf, Bur Sa'id, Dumyat, Janub Sina', Kafr ash Shaykh, Matruh, Qina, Shamal Sina', Suhaj. (CIA, 2002)

² The Nile is Egypt's primary source of life. It enters the country from the Sudan where Lake Nasser lies. The lake, created in the 1960s by the construction of the High Dam at Aswan, extends 320 km north into Egypt, and 158 km south into the Sudan. Downstream of Aswan the river's course is bordered by cultivated flood plains averaging about 18 km in width. Northward the river flows between high plateaus and cliffs along some stretches. In the delta, a triangular fertile area 250 km wide at the coast and extending 160 km inland, the river, which once fanned out over a broad estuary, now divides into two branches leading to the Mediterranean.

Geographical Setting-Egypt



Figure 2-1 The location of Egypt



Figure 2-2 Egypt's Administrative divisions

■ **DEMOGRAPHY**

Egypt has one of the largest populations in the Middle East. Owing to its specific geographic conditions, most urban development in Egypt has taken place in the Nile Valley and Delta, which represent only 4% of its total area. Throughout its long history, urbanization has occurred, and great cities and kingdoms have grown up, along the banks of the Nile River. Thus, population and economic activities concentrated in this narrow and limited area, and polarization became the pattern of Egyptian life.

According to the recent census (July 2002 est.), the total population of Egypt was 70.7 million (CIA, 2002). Age structures are 33.96 % (0-14 years), 62.18% (15-64 years), and 3.86% (65 years and over) (Table 2-1). The Population growth rate was 1.66% with the Birth rate 24.41 births/1,000 population and the Death rate 7.58 deaths/1,000 population. Egypt's rapid population growth is placing severe pressures on the country's resources. Since only 35,000 to 40,000 sq km of the land is habitable, the average population density is estimated to be between 1,000 and 1,260 persons/sq Km (CIA, 2002).

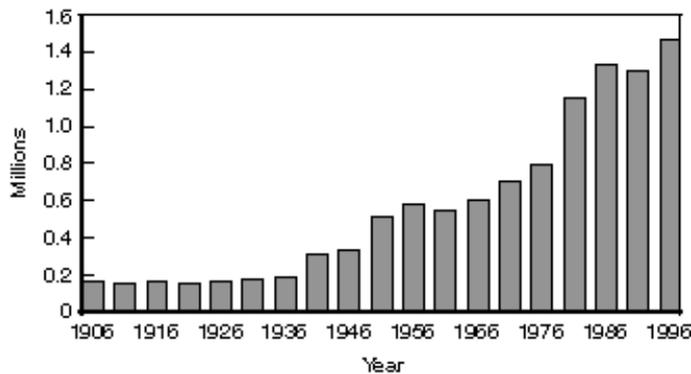


Figure 2-3 Additions to Egyptian population in selected years (UN, 1998).

Table 2-1 Total population of Egypt and age structure (July 2002 est.) (CIA, 2002).

Egypt Population	Age Structure					
	0 – 14 years		15-64 years		65 years and over	
	Male	Female	Male	Female	Male	Female
70,712,345	12,292,185 17.38%	11,721,469 16.58%	22,190,637 31.38%	21,775,504 30.80%	1,191,091 1.68%	1,541,459 2.18%

Table 2- 2 Demographic evaluation of Egypt (SB, 2001).

year	1950	1960	1970	1980	1990	2000	2015	2025	2050
Population	21 834	27 840	32 285	43 749	59 333	67 884	84 425	94 777	113 480

Table 2-3 Average annual population Growth Rate (SB, 2001).

Year	1950-1955	1960-1965	1970-1975	1980-1985	1990-1995	1995-2000	2000-2005	2010-2015	2020-2025	2045-2050
Growth Rate	2,46	2,51	1,92	2,57	2,01	1,82	1,67	1,26	1,10	0,54

■ ECONOMY

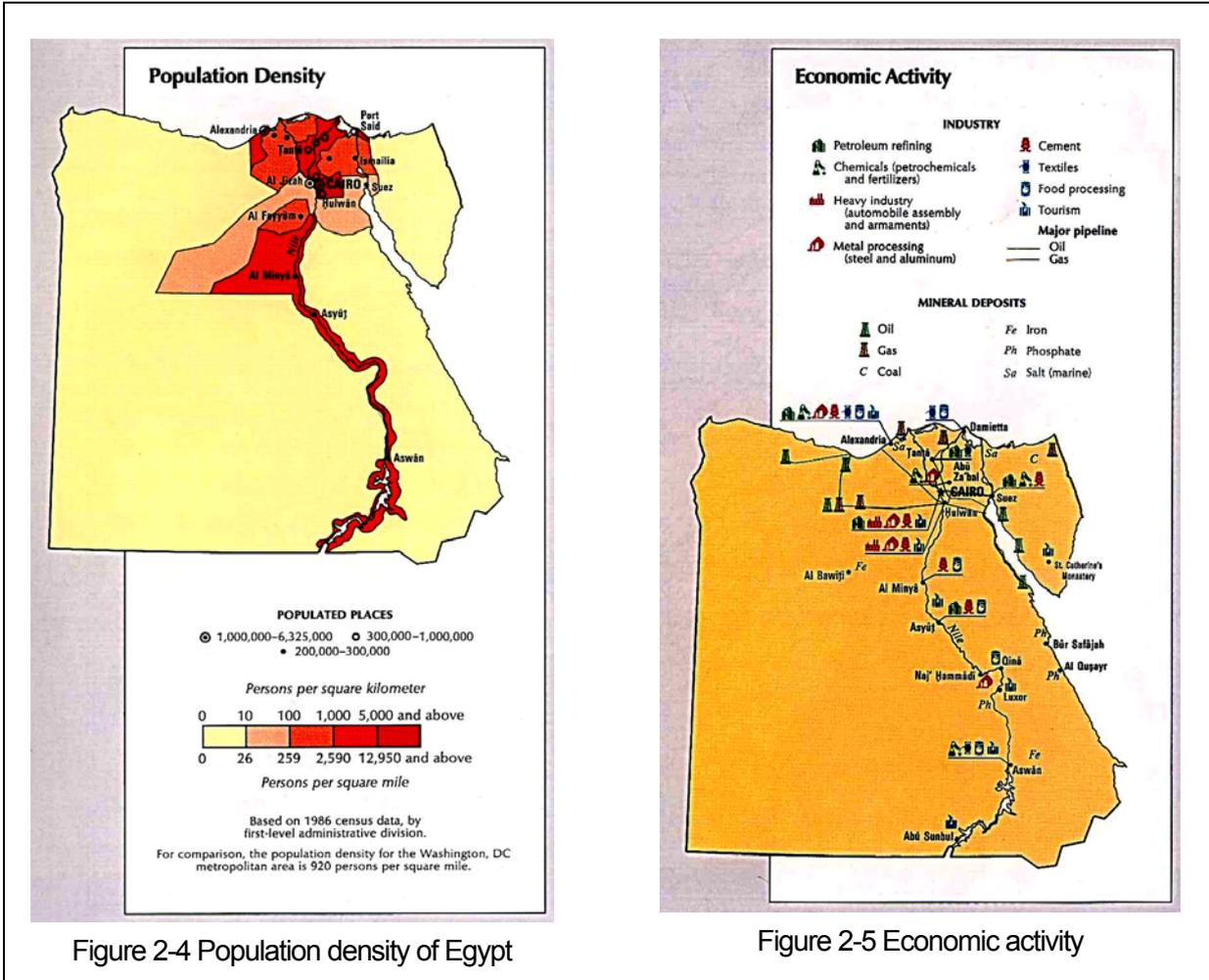
President Nasser's National Charter of 1962 set out the new economic system, stating that the public sector should own or control infrastructure, mining, the key medium and heavy industries, banks and insurance companies, and import/export trade. The private sector continued to operate in internal trade, construction, and light industry. The stated goals were to improve resource mobilization and income distribution, but in practice, these two objectives often conflict each other, resulting in significant inefficiencies. However, the government did improve opportunities for promotion, and working conditions.

The 1970s saw another major shift in economic policy, under President Sadat. The new strategy, called AL-Infatih, sought to improve the public sector's efficiency and to liberalize the economy, giving the private sector more room for productive activity. At the same time, it sought to maintain a large role for the public sector, gave social goals high priority, and also stressed the need for increased foreign investment. To encourage remittances and private sector activity, the government allowed certain foreign exchange transactions at a devalued exchange rate, which led to rapid increase of imports and to several adjustments of the official exchange rate (AKPIA, 1984).

During the 1990s, a series of IMF (International Monetary Fund) arrangements - along with massive external debt relief resulting from Egypt's participation in the Gulf war coalition helped the country improve its macro-economic performance. Sound fiscal and monetary policies through the mid-1990s helped to tame inflation, slash budget deficits, and build up foreign reserves, while structural reforms such as privatization and new business legislation prompted increased foreign investment. By mid-1998, the pace of structural reform slackened, and lower combined hard currency earnings resulted in pressure on the Egyptian pound and sporadic US dollar shortages. External payments were not in crisis, but Cairo's attempts to curb demand for foreign exchange convinced some investors and currency traders that government financial operations lacked transparency and co-ordination. Monetary pressures have increased since 11 September 2001 because of declines in tourism, Suez Canal tolls, and exports, and Cairo has devalued the pound several times in the past year. The development of a gas export market is a major bright spot for future growth prospects (CIA, 2002).

According to estimate 2000/01, agriculture's contribution to GDP (Gross Domestic Product) has gradually declined but it remains an important activity. Even though only 3% of the total land area is arable land, agriculture accounted for 16% of GDP and 28% of total employment. Industry and mining are also important, accounting for 20% of GDP and nearly 14% of total employment, and are heavily concentrated in Cairo and the Nile delta. Petroleum and natural gas are mainstays of the economy, accounting for 8% of GDP in fiscal year 2000/01 (July-

June), as high oil prices ensured crude oil continued to comprise over 60% of total exports. There is a large informal sector, which although no reliable data exists, may account for as much as 30% of total economic activity. Consumption is a major expenditure component of GDP, accounting for 66% of the total, compared with 21% for fixed capital formation and 13% for exports of goods and services (EIU, 2001).



Focusing on the U.S.-Egyptian Partnership for Economic Growth and Development, the United States Agency for International Development (USAID), together with the Government of Egypt (GOE), have worked together to develop objectives and programs to build on past achievements and to meet the future challenges. To be globally competitive and sustain economic growth, Egypt's challenge is to translate growth into good jobs for those who need them, avoid environmental degradation, and offer quality social services. The goal of the USAID/Egypt 2000-2009 strategy is a globally competitive economy benefiting Egyptians equitably. To meet this demand, Egypt needs to expand investment and trade, promote workforce development for the private sector, and ensure an adequately developed infrastructure base and provide sustainable social services. Central to this strategy is the

environmental challenges, which have an impact on Egypt's growth and quality of life. Nile water, Red Sea natural resources, urban/industrial pollution, and energy efficiency will be targeted (USAID, 2003).

Agriculture: One of the most difficult effects of population growth has been the encroachment onto agricultural land of housing and industrial development. In addition, the use of top soil to produce bricks has seriously stripped some areas. Until early in this century, this was not a serious problem as annual flooding replenished the soil, but this is no longer the case. Substitution of sand for mud bricks can alleviate the problem, but since sand bricks must be produced commercially and mud bricks can be home-produced, this would deprive poor households of income. The government has recognized the problem and has made top soil mining for bricks illegal, but enforcement is very difficult.

The pressure of population on the land has long been recognized in Egypt, but in earlier decades, it was hoped that the development of new communities created by irrigating desert land would solve the problem. The agricultural communities in the desert areas have proven quite expensive, have taken much longer to develop than planned and have not lived up to expectations in term of either food production or employment generation (World Bank, 1994).

2.2.2 HISTORICAL DEVELOPMENTS

■ FIRST ATTEMPTS AT MODERNIZATION 1800-1850

The first attempts at modernisation under Mohammed Ali Pasha focused on institutional reform, introducing technology imported from the West, but rejecting cultural emulation. At that time, some concern about the destruction that occurred in order to create space and materials for the Pasha's numerous buildings and the large-scale real estate development ventures were carried out by many high officials. The public sector was busy building palaces, schools and factories. By 1840, wheeled carriages had arrived in the cities and the unpaved streets (still being maintained by local residents) proved inadequate for the new vehicles. The government undertook responsibility for the construction and maintenance of the road system, and major arteries were widened and realigned. Amid all this development activity, the cities retained their physical structure and the quarters survived as cohesive communities. Main streets were lined on each side with shops and apartments above. Leading off the great thoroughfares were side streets and cul-de-sacs. Within the quarters, narrow lanes accessible only to inhabitants of the "harah" itself provided a place for communal open-air activities with the necessary privacy and seclusion (AKPIA, 1984).

■ EMERGENCE OF MODERN EGYPTIAN CITIES 1850-1880

The number of foreign residents in Egypt rose from 10,000 in 1830, to 20,000 in 1850. After 1850, a sustained influx of foreigners of all lifestyles poured into Cairo and Alexandria seeking employment or speculative ventures, taking advantage of unwarranted protection and privileges afforded to foreigners in Ottoman dominions. Khedive Ismail's modernization efforts focused on social and cultural aspects, starting with the city's physical appearance. The first of these attempts was introduced European features, sharply contrasting with the familiar Islamic environment: rectilinear, grid and radial plans, freestanding structures, and wide streets to accommodate vehicular traffic. In time, palaces, sumptuous residences, embassies, ministries, offices, European hotels, department stores, boutiques, banks, a stock exchange, and even an opera house were built in the new districts by foreigners who controlled the financial and land markets as well as the technical professions (AKPIA, 1984).

■ COLONIAL PERIOD: 1880-1950

The growth of European influence over the middle of the nineteenth century culminated in the establishment of a British colonial administration in 1882. At that time, the number of foreign residents in Egypt had climbed to 91,000. The large increase in the number of British and other Europeans gave impetus to the rapid development of new residential areas. Huge amounts of foreign capital were invested in urban development, leading to both large-scale speculative projects by real estate companies and small-scale building activities by individual entrepreneurs.

In the old city, buildings, which had once been the homes of the rich and the powerful-housed dozens of families, crowded into rooms in the subdivided structures, and shacks in the courtyard and on the roofs. Densities mounted, rents soared, and the earnings of unskilled labourers were progressively depressed by the influx of rural migrants competing for the same jobs. For a majority of the urban population, the standard of living declined steadily between 1870 and 1950, while the urbanized area doubled and the population grew (AKPIA, 1984).

■ DEVELOPMENT AND CHANGE AFTER THE REVOLUTION: 1950-1965

President Nasser's government policies focused on national economic and social development. The number of foreigners, which had increased exponentially during the colonial period, began to decline steadily after the abolition of the capitulations in 1936. Following the Revolution of 1952, the number of resident foreigners declined precipitously, and since 1961, it has been negligible. In the new urban developments, Egyptians replaced departing foreigners. Subsequently, the modern cities were restructured to reflect their Egyptianization. International architecture remained the accepted building style, but subtle

characteristics of the traditional urban fabric reappeared in various forms. Mixed land uses were introduced, as lower floors of apartment buildings were converted to shops and offices. Commercial streets became specialized according to the different goods and services being marketed. The intensity of land utilization increased, leading to the replacement of villas by high-rise apartments and office buildings.

The private real estate market was thrown into a state of disarray by the promulgation of stiff rent control laws, starting in 1954. Private development for the rental market virtually stopped. Investment was channelled instead into condominiums in new large-scale subdivisions taking advantage of the liberal credit terms available under the government-subsidized co-operative housing programme. However, this programme clearly favoured intermediate-sized subdivisions and was only constrained by the lack of vacant serviceable land (AKPIA, 1984).

■ URBAN DYNAMICS: 1965-1980

The period of accelerating urban expansion, which completely transformed Egyptian cities, started in the late sixties, with the emergence of a group of middle-class citizens interested in investing in urban real estate. Although some were young professionals, the majority were artisans, service workers, and labourers working in the oil-producing countries. The uncontrolled activities of small-scale entrepreneurs and contractors catering to the housing needs of the newly affluent resulted in a proliferation of informal settlements through fringe development. The urbanized area in majority of Egyptian cities doubled consuming agricultural land at an alarming rate, while municipal authorities watched helplessly, unable to control or direct, let alone service, the new zones. The massive infusion of capital into housing drove up land values and construction costs to unprecedented levels, in one of the worst inflation spirals ever experienced by urban real estate (AKPIA, 1984).

The government has attempted to deal with the housing shortages by construction of public housing projects. Most of these are blocks of apartments in five-storey walk-ups. Since 1960, when the programme was greatly expanded, annual production has fluctuated between 10,000 and 20,000 units, dropping to less than 6,000 in years when national priorities led to budget reductions. In order to make this housing affordable to low-income people, rents were lowered to nominal levels. The government's inability to properly maintain the buildings eventually prompted their conversion to ownership. The heavy subsidies, which this approach entailed, have placed an enormous financial burden on the government, preventing it from even coming close to meeting the demand for housing through new construction. Therefore, in the late 1970s the government adopted a policy of up-grading existing areas to capitalize on the standing housing stock (AKPIA, 1984).

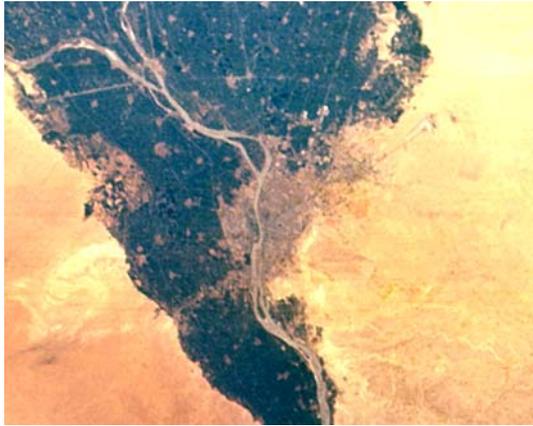
■ CURRENT EGYPTIAN CITY-STATES: 1980-2000

The expansion of the cities is occurring increasingly in the governorates. Several factors contribute to this pattern. In the older areas, the housing stock cannot support further subdivision or vertical expansion, and development pressures are leading to conversion from residential to commercial use. At the same time, increased prosperity is allowing many people to move from the overcrowded areas out to the suburbs, while newly arrived rural migrants are located in the numerous informal settlements proliferating on the edges of the urban areas. Because most farmland is in private hands, the government has been unable to control the spread of informal settlements onto agricultural areas. The annual loss of 600 hectares of valuable farmland to the growth of Cairo is one of the most serious problems confronting the planning authorities. All along, the sector sellers and speculators subdivide huge strips of agricultural land and sell the plots to low income families, who then construct their precarious self-built houses there. Because any form of infrastructure is generally absent, self-help building always goes along with urbanism, meaning that not only one's own house must be constructed, but also the subdivided land must be equipped with basic infrastructure to make it habitable.

Housing construction has grown significantly over the last two decades. In the public sector, this is due to increased resources available from the Suez Canal, oil sales, tourism and foreign loans. In the private sector, remittances from Egyptians working abroad have fuelled construction activities in both the formal and the informal sectors. However, despite this boom, Egyptian cities are still faced with a serious housing shortage³. Private sector construction shifted to condominiums, and transfers of rental units involved increasingly larger "key money" charges. Attempts to control the key money system only depressed turnover rates, while attempts to limit condominiums in order to promote rental construction further stifled the market. Consequently, informal sector housing has become widespread, accounting for an estimated 70% of all new construction in Cairo (AKPIA, 1984). Informal and illegal housing continued in the 1980s and 1990s. It is estimated that in 1994 more than 4 million people were living in illegal settlements in the Greater Cairo Region (GCR). The efforts of the government to control the growth of the city have not been sufficient and it kept growing in most directions, particularly to the west and north, to reach an estimated population of over 12 million in 1994 (UN. 1993).

³ The problem is due, ultimately, to the unprecedented growth rate of the population, but it has been aggravated by housing policies since the 1950s. Government construction of subsidised housing has proved prohibitively expensive, and has thus been unable to meet the demand, while rent control has discouraged private investment in housing.

Urban Growth-Cairo



Cairo 1965



Cairo 1998

Figure 2-6 Urban growth of Cairo, Egypt
(Picture materials from NASA)

2.2.3 URBAN DEVELOPMENT STRATEGIES

■ THE DEVELOPMENT STRATEGIES (1983)

The development strategies (1983) recommended implementing twelve objectives, each of which was seen as contributing to one or both of the goals (AKPIA, 1984). These objectives are as following:

1. **Protect agricultural areas:** To decrease development pressure on arable land, the plan recommended tactics, which include opening desert areas to urban development and limiting road construction in agricultural areas.
2. **Improve industrial location policies:** Policies aimed to protect arable land by directing industry elsewhere, protect other areas of the city from pollution, reduce transit costs to producers and workers and use industry as a way to attract residential development.
3. **Improve transport efficiency:** The public transit system should be improved, and controls on private cars should be strengthened to encourage the use of collective rather than individual vehicles. New urban areas should be designed so that they minimize commuting.
4. **Maximize the use of existing infrastructure:** Planners must recognize that even poorly serviced areas within the existing agglomeration are often more attractive than new communities and development will continue to occur there. This growth should not only be channelled to desert fringe areas (to protect arable land), but should also be guided to exploit fully the public facilities being constructed in new communities.

5. **Protect the archaeological and historical heritage:** Minimize urban intrusions and encourage joint public-private restoration projects.
6. **Encourage deconcentration of the Greater Cairo Agglomeration:** Growth should be directed into the new communities in order to decentralize the urban region.
7. **Provide alternatives to informal settlements:** Developers must carefully assess the requirements for low- and middle-income housing to find new strategies, which will protect arable land and meet the economic and social needs of the residents.
8. **Organize the urban fabric to improve access to public services**
9. **Promote legal connection of dwellings to public utilities:** New residential areas should be designed to permit efficient low-cost provision of utilities and standards should be reduced to allow legal hook-ups for low-income households.
10. **Rehabilitate old neighbourhoods**
11. **Protect water resources:** The Nile is the only source of irrigation and drinking water, so it must be protected against industrial and domestic pollution.
12. **Control air pollution:** Industrial fumes can and should be filtered, but at present automobile exhaust can be controlled only by measures to reduce the concentration of vehicles in densely populated areas.

The concept of "homogeneous sectors" was suggested to meet the 1983 strategy as a basis for reorganizing the existing built-up area in Cairo. It has since been developed to encompass the whole area of the Greater Cairo Region. It was suggested that, as Cairo is becoming too big to be managed as one unit and from a single core, it should be subdivided into smaller units within which development could be directed to ensure better living conditions, particularly in terms of the provision of job opportunities and the upgrading of existing service standards. Homogeneity in each sector was defined as meaning an equal distribution of services and access to jobs among its residents.

The new cities, satellite or independent, were intended to be developed as growth centres in order to attract economic activities and population from the core region. The cities are situated along the major regional radials to tie the GCR to other economic regions such as Suez, Ismailia, and Alexandria. Ten new settlements were suggested, primarily as an alternative to squatter and informal areas encroaching on agricultural land. These settlements were intended to be separate from the existing built-up area and to provide development affordable to the squatter population. Their size is intended to be large enough to guarantee an adequate level of self-sufficiency in terms of employment and services. It was hoped that the private sector would be the primary investor in these settlements, in order not to compete for public investment with the new towns. Finally, these settlements were to be located near existing labour pools in order to attract employment in the short and medium term.

However, Cairo is still facing serious urban problems in terms of a lack of job opportunities; informal and illegal expansion of the built-up area; deterioration of the housing stock; and social, health, and environmental problems. It has become very evident that the major impediment to the implementation of planned projects is mismanagement and lack of sectoral and geographic integration. The GCR is still managed by three different governors (in Cairo, Qalyubia, and Giza sections), each having their own authority, local departments, and resources, at the same time, some facilities, and services, such as planning, regional authorities administer transportation, water supply, and sewage disposal. These local and regional institutions are not integrated and coordination of policy and implementation is poor. In addition, sectoral ministries, which are also located in Cairo, interfere in the affairs of these regional institutions. Moreover, the resources available for public investment are limited, discontinuous, and mismanaged. The result is usually the cancellation, delay, or alteration of planned urban development policies and projects. Proposals for the homogeneous sectors have also not been successfully carried out owing to management problems and lack of planning expertise at the local level. It is clear that the urban development policies for the GCR have not yet achieved their major goal of decentralizing population and economic activities. Because the government did not respond appropriately to change the social, political, economic, and institutional structures radically, the effects of the policies are likely to be limited, or may even add to the polarization process (Rakodi, 1997).

■ THE DEVELOPMENT STRATEGIES (1997-2017)

The objectives of the development strategy (1997-2017) are to mobilize national resources, use foreign investments as a source of financing, and continue to encourage the private sector to play its role as a principal partner in the development process. The government's role mainly is confined to the creation of a favourable climate for the private sector to play its role. The government's role, then, is limited to give special attention to the social aspect of the development process and to support research and development institutions to cope with the most up to date scientific and technological innovations (AROETC, 1997).

Among the policies of housing utilities and new urban communities the main objectives are:

1. Systematic expansion towards the desert out of the narrow Nile valley, thus creating a topological balance all over the country, that is, between population distribution and natural resources.
2. Create job opportunities, increase national product, raise living standards, preserve environment, maintaining agricultural lands, and offer utility-provided land for housing, services, and industries in order to preserve agricultural lands.

3. Appropriate a decent accommodation to every citizen. Potable water and sanitary drainage networks are to be erected in all cities and villages, and potable water waste is to be stopped.
4. Enhancing the local architectural style to be in harmony with the heritage and maintaining the buildings of distinguished styles in the context of preserving the architectural style and cultural heritage of Egypt.
5. Develop the architectural consulting bureaus in order to assume their role in urban development and upgrading the contracting sector and trained technical labour in order to take part in different projects.
6. Regulate building processes by issuing relevant policies and regulations.
7. Consider the means of protection and treatment to deal with natural disasters in all forms.

The objectives and policies of this sector required the following:

- The four next 5-year plans provide for the construction of some 5.3 million housing units with an average of 250,000 housing units a year during the fourth and fifth 5-year plans (1997-2002 & 2002-2007) rising to an average of some 280,000 housing units during the sixth and seventh 5-year plans (2007-2012 & 2012-2017)
- Provide building materials at suitable prices to encourage investment in this field.
- Provide land and their utilities at affordable prices.
- Work out a mechanism for providing housing units for low-income classes.
- Bring about a balanced owner – leaseholder relationship.
- Develop and upgrade the performance of the infrastructure all over Egypt and extending it to deprived areas according to the comprehensive national plan priorities.
- The 5-year plan (1997-2002) provided for constructing 44 new towns and communities scheduled to be successively executed over a total area of 1 million hectares.
- Major infrastructure facilities are being provided for each of these towns extending up to the boundaries of the new community. The private sector will be undertaking development in these areas, where it is given the opportunity to conduct integrated activities in accordance with the prevailing type of activity (agriculture, industry, tourism etc.) and to take part in providing major infrastructure facilities and services.
- Develop existing new towns at higher rates by linking them with other cities and towns by highways, metro lines, railways and new branch lines (AROETC, 1997).

To achieve the expansion towards the desert out of the narrow Nile valley, the Egyptian government gave the signal to start work of the greatest national projects of Toshka on January 19, 1997. With the beginning of the year 2003, Egypt celebrated the ending of the work in the first stage. This also signalled the beginning of a series of giant projects that will help expand the population towards the desert and help in the reconstruction and growth

towards new areas rich in unexploited natural wealth. Toshka project aims at drawing a new chart for life on the land of Egypt as well as increasing the inhabited spot from 5% to 25% of the total area of Egypt. Moreover, it aims at establishing a new delta southwards of the valley and setting up an integrated economic base that supports the Egyptian economy (Egypt Magazine, 2003).

Toshka project contributes to achieving the following objectives:

1. Adding a new area of about 540 thousand feddans to the cultivated land irrigated by the water of the Nile,
2. Establishing integrated agricultural and industrial communities based on exploiting the primary agricultural resources, then, it expands to include the industries based on local materials, mining and energy production,
3. Establishing new urban communities attracting working forces towards agriculture, industry and trade, in addition to presenting services to the new habitants of the region, and
4. Establishing and developing a network of main roads and sub-roads, which will serve the aims, and plans of development, in addition to establishing airports in the region to transfer the agricultural and industrial products to areas of consumption (Egypt Magazine, 2003).

2.3 POLITICAL, SOCIAL, AND ECONOMIC CHANGES

2.3.1 POLITICAL CHANGES

Present day Egypt has evolved historically through a series of grand political designs. The physical formations, which constituted pre-modern Egypt, were all envisioned and initially carried out by great military-political commanders or empire-builders.

The 1952 revolution has ushered in yet another major modernization attempt in Egypt's modern history. Much of the structural changes affected by the July revolution were naturally for the benefit of this new alliance. The whole upper class (the bourgeoisie and landlords) was removed from political power and its economic power was reduced. Massive public housing projects were carried out in Egypt. New areas were zoned and subdivided for the housing of technocrats who were the backbone of the development drive that begun with the revolution.

Nasser's dreams have overloaded Egypt's capacity. These dreams came to a tragic halt in 1967. His military defeat at the hands of Israel boded ill. For several years following 1967, with most of the country's resources earmarked for the war efforts, Egypt's infrastructure could be properly maintained, much less expanded to keep up with continuing population growth. Nor did his earlier measures of rent control encourage the private sector to step in and help ease the growing housing shortage (Ibrahim, 1984).

Urban rent controls were soon to follow (in 1958 and 1960) hitting the owners of real estate and benefiting the tenants, that is, the lower middle-class and workers. This measure, while having an immediate equitable re-distributive effect, was in the end to have an adverse effect on the urban housing stock. The rent control laws were intended to protect the tenant against the owner and furthermore, they did not help to stimulate private participation in housing construction. In the early 1960s, there were even two successive reductions, lowering the rental values below realistic levels, and discouraging the owners from properly maintaining their properties. Rents set by this law were much lower than the market value. The law exempts from rent control furnished apartments, units rented to foreigners, and units sold as condominiums. Because these laws are a tax to the owners and a subsidy to the tenants, house-owners are inclined to get around the law, i.e. by renting furnished apartments and selling condominiums. One of the illegal ways to bypass the law is that property owners charge an initial entrance fee.

Thus, when Sadat came to power in 1970, he inherited a heavy burden, but by 1974, he had developed a vision and a plan to cope with the burden. Sadat wanted to develop Egypt along western lines with western economic aid, western technology and western experts. He let loose private developers and land speculators. New luxury high-rise buildings mushroomed all over the cities, replacing private villas or rising in areas, which had undergone a massive slum clearance. Many first-class hotels were also started, and new highways and overpasses constructed. This rapid urban development in Egypt was aided by the inflow of billions of dollars from Egyptians working in oil-rich Arab countries. A new wave of foreign influx added further stimulation and intensified the demand for luxury housing (Ibrahim, 1984).

The change in economic policy in the second half of the 1970s caused drastic changes in the housing market. The annual number of units built increased steadily to reach more than 180,000 in 1990. The role of the public sector diminished and was limited to the provision of low- and medium-cost units, mainly in the new towns and settlements around the GCR. Private investment in the housing and real estate sectors has increased continuously in the past two decades, despite the fact that these sectors are, in theory, tightly regulated and rent controlled and suffers from credit shortages. According to estimates by the Ministry of Housing and Reconstruction, private sector gross investment in housing grew from £E732 million in 1982/83 to £E2, 950 million in 1991/92, representing more than 25% of the total private

investment in Egypt. On the other hand, public gross investment in housing fluctuated from £E67 million in 1982/83 to £E370 million in 1986/87 and back to £E91 million in 1991/92, representing less than 1% of total Egyptian public investment. Similarly, gross value added in private sector housing rose from £E350 million in 1982/83 to £E2,223 million in 1991/92, whereas it increased only from £E62 million to £E127 million in public sector housing over the same period. In 1991/92, the private sector contributed 97% of the total investment in housing and 95% of the total value added in the housing sector (World Bank, 1994).

Factors that explain the burgeoning private sector investment in housing include the high levels of demand resulting from urban population growth. In addition, private sector developers find ways around the rent control laws, such as build-to-own arrangements, and cash advances paid to developers. The informal housing that represents a large portion of the Egyptian housing market is totally financed by private investment. Given the limited choice of alternative investments in the Egyptian market (especially during periods of recession), real estate is a major outlet for domestic savings and especially for the remittances of Egyptians working in oil-exporting Arab countries (World Bank, 1994).

2.3.2 SOCIAL CHANGES

Egypt initiated its "demographic transition" in the early decades of the nineteenth century. Death rates began their slow but steady decline; birth rates have remained at their previous high levels. The inevitable result, with no migration out of Egypt, has been a steady population increase. The crowding, oriental confusion and the noise of people and vehicles are rampant. The reasons for the century-long trend of rural-urban migration are quite known: pressure on limited cultivable land, neglect of the countryside, lack of employment opportunities, and the attraction of cities where power, wealth, and services are concentrated.

Housing shortages have arisen as people in rural areas migrated to urban centers in the hope of finding greater economic opportunity. Most of those people, however, have not been able to find work, nor have the cities to which they moved been able to house them. In Cairo, poverty and housing shortages had become so severe by the late 1990's that more than 300,000 people were living in shelters of cardboard and other materials in a large cemetery on the outskirts of the city. Even people who can afford and find housing in Cairo have been forced to live in tiny, dirty apartments, many without toilets (World Book, 2002).

Moreover, rapid urbanization in Cairo has led to several negative consequences over the past four decades: increasing incidence of urban poverty; inadequate access to housing and such basic urban services as primary health care, water supply, and sanitation; proliferation of squatter and informal settlements; and urban environmental degradation (El-Batran & Arandal, 1998).

The housing problem in Egypt has a social dimension, which cannot be underestimated. The impact has been felt in the changing structure of the Egyptian urban family. The traditional extended family has become of the nuclear type. Urban conditions are restoring the traditional form of residence, which is resulting in a trend back to the extended family. Since newly married young couples cannot afford the high cost of a flat, they continue to live with their parents, thus combining more than one nuclear family. They may be of different generations, as in the case of the parents and their offspring living together, each with his own family; or they may constitute only one generation after the parents die and the household is occupied by the siblings, each with his own nuclear family (El-Safty, 1984).

The extended family in the city was one social consequence of the shortage in housing; another is the increasing number of delayed marriages. The average Egyptian couple engaged to be married normally finds it difficult to afford a flat and, unless they were fortunate to have worked in an oil-rich country, may have to wait for years. When the engagement period drags on, it is highly probable that the relationship will end. In some cases, the couple does marry, but continues to live separately, each with his and her own family. This form of marriage has become very common in the last two decades where neither family can provide the couple with living space. Such problems are experienced by the middle and lower strata of society and result in much discontent among youth. The difficulty, sometimes even the impossibility, of acquiring a residence can trigger-off a whole spectrum of hostile feelings among the young, whose prospects for the future are already dim in the midst of a multitude of problems, both economic and social. (El-Safty, 1984)

The Egyptian government has applied several actions and policies in an attempt to resolve the housing problem, including rent control, providing public housing, and subsidizing building materials. Most plans have had limited success because governmental administrators view the problem from a different perspective than that of the public. However, urban areas in most Egyptian cities are currently confronted with a number of problems that have emerged because of the ever-increasing gap between the rapid urban population growths on the one hand, and the limited supply of land, infrastructure, utilities, services, and government funding on the other (El-Batran & Arandal, 1998).

2.3.3 ECONOMIC CHANGES

The last three decades can be divided into three distinctive periods: the first from mid-fifties to mid-sixties, the second from mid-sixties to mid-seventies and the third from mid-seventies until the present.

■ FROM MID-FIFTIES TO MID-SIXTIES

In the first of these decades, Egypt witnessed a wider participation of the state in national affairs, naturally accompanied by a planned and centrally directed economy. While the public sector grew fast, private enterprises were controlled and major private companies were nationalized under socialism or state capitalism. Major industrial development was undertaken and while the state showed a genuine interest in the welfare of the limited income groups, for the first time in Egypt's history, low-cost housing was built on a large scale. The government built low-cost housing only in the Greater Cairo region (5,350 units) and Alexandria (1,500 units). The reason was probably that these two areas were at that time the centre of interest of the central government, or that there was no pressing need for low-cost housing outside these two regions.

■ FROM MID-SIXTIES TO MID-SEVENTIES

Housing programmes gradually declined between mid-1960s to mid-1970s, particularly in low-cost. Egypt was involved one way or another in international conflicts and internal problems were neglected. In this decade, the Development and Housing Company built only 710 units, about 11% of the number built during the previous ten years. Norms of design and planning remained almost the same except that the new design showed a slight increase in the dwelling area. In 1971, the General Organization for Housing Co-operatives was established to promote and supervise the development of housing co-operatives. The organization gradually expanded until it became the most effective device for providing housing for lower middle and middle classes. Individual members were encouraged to form housing co-operatives. Major sources of financing housing co-operatives are through savings from members and government allocations. Planning and design of the units are left to the co-operative societies but they have to meet the organization's norms and standards. The organization also supervises construction and keeps a reasonable control over the societies. The increase in co-operative housing has resulted from government policy to channel large investment in housing through the organization (Rageh, 1984).

Because of the absence of an effectively implemented master plan and of adequate support of low-income housing, and with the increase of immigration from rural areas to the city, informal housing spread over Egyptian cities. This type of housing operates outside the formal process of land acquisition, building permits and formal planning and zoning, and is not related to official housing production.

■ FROM MID-SEVENTIES UNTIL THE PRESENT

From the mid-1970s on, the housing scene in Egyptian cities has been fundamentally transformed. Formal low-cost housing for limited income people came to a halt, and was replaced by informal housing. Middle-income housing continued its normal course of expansion in its traditional locations. Luxurious housing appeared again after two decades of absence but in a different form. Luxurious apartment towers are being built particularly along the river, giving cities a new skyline.

The economy has become less centrally controlled than before and Egypt adopted an open-door policy. Foreign investment was encouraged and restrictions on private enterprise were lifted in practically all areas of industry and production, and importing became much easier. Egyptians were allowed and encouraged to work in the wealthy neighbouring countries. The process of industrial growth and consequent urbanization of Egyptian cities leads to population concentrations, scarcity of urban lands and hence high land costs. Multi-storey apartments come as a natural response to these phenomena.

Egyptians working abroad directed part of their savings to housing and thus created a big demand for middle-income housing. In addition, the presence of an increased foreign community, which came because of the new open-door policy, added to the demand for both middle- and upper-income housing. The demand created by these two groups has contributed to the recent rise in land prices and building costs. Workers' wages have increased to new heights, and for the first time they have overtaken the wages and salaries of other groups, particularly those of the professionals and civil employees (land prices in Cairo increase at compound annual rates ranging from 25 to 40%). Costs of building materials and labour have increased less rapidly at 15 to 20%, but it outpaced the general inflation rate (Rageh, 1984).

To meet the growing need for dwelling units, and with the great increase in land prices, vertical extension on existing buildings became easier for investors than building new apartments on new sites. Additional floors account for as much as half of the units added to the existing stock. New floors were added to existing buildings to gain extra dwelling units, single villas were replaced by multi-storey apartment buildings, tall buildings were erected on empty lots and businesses moved in. New office buildings appeared mostly with glass curtain walls and other western design elements. Units originally designed for housing are now used as offices for different types of businesses (Rageh, 1984).

At the end of the 1980s, Egypt faced problems of low productivity and poor economic management, compounded by the adverse social effects of excessive population growth, high inflation, and massive urban overcrowding. In 1991, the country undertook wide-ranging macroeconomic stabilization and structural reform measures. This reform effort has been supported by three IMF (International Monetary Fund) arrangements, the last of which expired in September 1998. Substantial progress has been made in improving macroeconomic performance. Cairo tamed inflation, slashed budget deficits, and built up foreign reserves to an all-time high. Although the pace of structural reforms such as privatization and new business legislation has been slower than envisioned under the IMF program, Egypt's steps toward a more market-oriented economy have prompted increased foreign investment (CIA, 2002).



Figure 2-7 New floors added onto a residential building with a different architectural style.



Figure 2-8 Anaesthetic vertical expansion.

Under the new investment law, many development companies were established and interesting housing projects have begun in recent years. Planning and design norms are generally observed and open spaces and community facilities are provided. The dwelling areas vary from 80 to 130 sq m with one or two terraces, and the finishing materials are of acceptable standards.

With increasing deterioration in urbanization status in residential areas, Egypt adopted plans to construct satellite towns to meet the demands of its growing population. Emphasis on the development of satellite towns for the city's future urban expansion in desert areas has become a national strategy. These cities are established in desert areas to act as new urban centers and growth poles away from the narrow crowded valley, in an attempt to redistribute the population among the whole area of the country. In this context, 17 new urban cities were established. These cities are planned to attract 6 million inhabitants, providing 200,000 job opportunities, and contributing 20,000 million pounds to the GDP (Gross Domestic Product) in both industrial and agricultural sectors.

To achieve the goals of the development strategy, the Ministry in cooperation with the Public Authority for Urban Planning, has set up Egypt's Plan for Development and Construction until the year 2017. The plan included new 44 urban communities. These urban communities are divided into three generations that are planned to assimilate 12 million inhabitants. The first generation indicates the 17 cities that are already established, the second generation indicates the 14 cities that are still under construction, while the third generation indicates the 28 cities that are still being studied (AROETC, 1997).

The responsibility for the new communities' initiative lies with the New Urban Communities' Organization. Extremely generous incentives are available to attract investment into the new towns, including 10-year tax exemptions, cheap land and labor, and relatively little bureaucracy. The new communities' ability to attract investors and residents has been determined largely by the success in reforming Egypt's economic policy framework and rehabilitating the human and physical infrastructures of the new cities, in addition to improving the investment climate. However, the infrastructure of the new communities has not kept up with the pace of development. So far, the authorities have largely failed to encourage workers to relocate, with most continuing to commute from their existing homes. Currently, most of the city is under construction and most of the apartments in the finished buildings are uninhabited. Many people who paid for those apartments do not want to move in because there are no services or enough facilities.

2.4 THE TRANSFORMATION OF URBAN PATTERNS

Egyptian cities suffer increasingly from the burden of supporting a steadily growing population at a rate faster than it can cope with in terms of its infrastructure and the services it can provide. In this urban dilemma, the problem of the city districts becomes a major issue consisting of: the imbalance between increasing demand and inadequate supply; and the increasing high cost of housing, which is partially due to the increase in demand over supply, in addition to the high cost of building materials. The next study, thus, will be focused on the problems of Egyptian cities through the explanation of the transformation of its urban patterns.

2.4.1 DECLINE OF TRADITIONAL DISTRICTS

Beginning in the nineteenth and early twentieth centuries, as the result of colonial conquest and city building undertaken by the colonizers, many of the Egyptian cities grew dramatically in population and area. Newer districts that became the domain of the ruling classes were built next to pre-existing madinas. These newer zones first attracted the local aristocracy, but eventually even the bourgeoisie began to desert the traditional districts for the new. The places they vacated were more than filled by the growing number of working-class and lower-income residents. After independence, the traditional cities were transformed into artisans and workers districts. The implications of the population shift were significant for both the social and the physical conditions in the traditional cities. Not only did the increased segregation according to income split asunder but also zones ceded to the poor.

“The ensuing social segregation devalued the historic nucleus and paved the way for its conversion into an urban slum area. Over densification, poor economic conditions, inappropriate industrial activities, lack of commitment and discontinued maintenance of buildings then lead to a rapid dilapidation of the housing stock.”
(Bianca, 2000, P. 180)

Densities, combined with the low incomes of the occupants, the minimal expenditures on building maintenance, and the cumulative effects of years of preferential investment in the urban infrastructure of the newer and wealthier districts have led to decline of traditional cities. In the process of degradation, older residential structures have collapsed from age and neglect, leaving rubble-covered lots that either remain vacant or serve eventually as the sites for unregulated replacement housing that is ill matched to the surrounding area. Non-residence structures of irreplaceable historic significance, such as wakala, funduq, even madrass and mosques have been converted for use as dwellings to meet the burgeoning demand generated jointly by population increase and the loss of residential structures through deterioration. Empty spaces in courtyards, streets, and even cemeteries have been pre-empted to accommodate makeshift housing rented to squatters (Abu-Lughod, 1978).

Decline of Traditional Districts

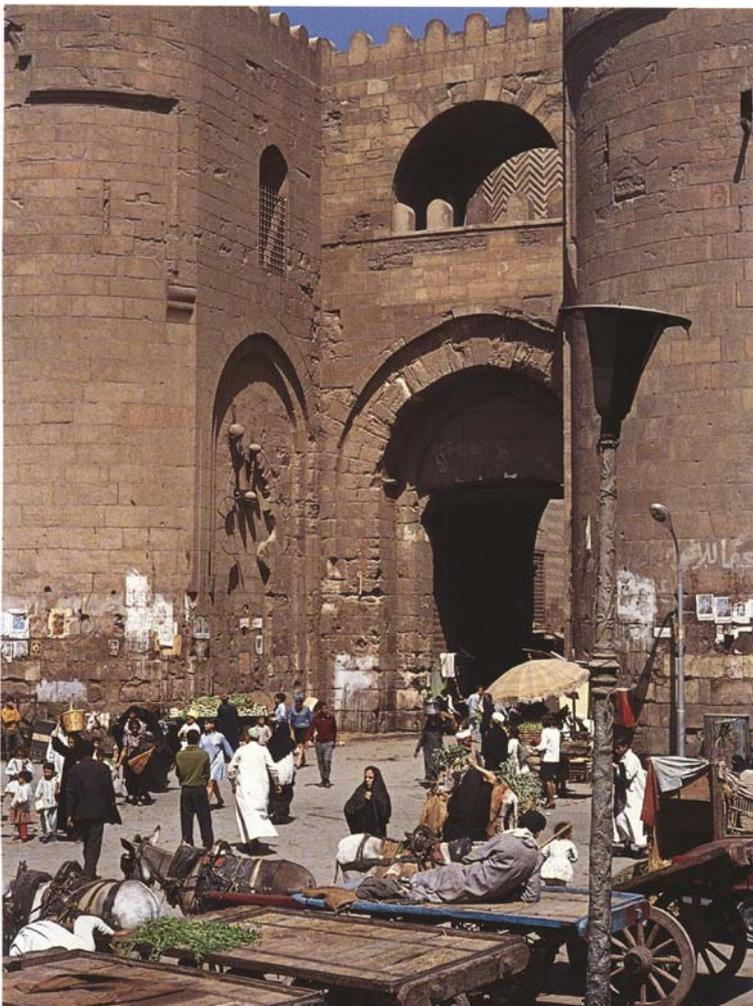


Figure 2-9 Decline of the traditional districts; the districts were ignored and, while the population was steadily growing, their area did not expand and the infrastructure was much neglected. As a result, population density soared and the living conditions severely worsened.

Dilapidated buildings or vacant lots are replaced by multi-family buildings that re-house at a higher standard. Since these replacements usually command higher rents, the lowest income population is displaced anyway because it cannot afford the better housing, and the historic character of the district is lost because replacements are unimaginatively built following the designs and using the building materials that are standard in other parts of the city (Abu-Lughod, 1978).

“During recent years, large-scale development projects have been exported to many Arab countries, where they were implemented as complete packages without recognizing the fact that the physical forms of these projects have grown out of an alien ideological matrix and imply different codes of behaviour and different environmental conditions. As a result of such development processes, many traditional urban structures have been left to decay or were deliberately wiped out, while modern Western style development has spread at a rapid pace.” (Bianca, 2000, P. 190)

2.4.2 DETERIORATION AND VERTICAL EXPANSION OF COLONIAL DISTRICTS

With the need for modern city centres, the colonial districts were used as a quarry for the progressive establishment, and the historic buildings therefore were condemned to disappear. The districts lost their historical character as tall apartment buildings replaced villas. The buildings which were originally planned to contain four-storey apartment buildings and single houses, has now a score of tall buildings. Commercial and professional activities find their place in these areas, which were once exclusively residential. Quite often, the changes in the districts are manifested in the buildings themselves. New floors added to existing buildings are different in function and architectural style from the original floors. The developing of the modern city centres was accompanied by a scarification of the historic architecture, which lead finally to destruction of the colonial districts by fragmentation and distortion of the streetscape.

Cairo has two island districts, Zamalek and Manial. While Manial has traditionally been a middle-income residential district that has retained much of its character and residential population over the past 50 years, Zamalek witnessed radical transformation. Over 150 years ago, Zamalek was a farmland with a patchy population. In the late 19th century, Zamalek was the target of a full-scale development effort by European residents of Cairo who sought to set up an upper class district that was secluded from Cairo proper by the Nile. Villas, palaces, clubs and boulevards were the mainstay of the planning effort. Following the 1952 revolution, Zamalek lost much of its elite and foreign populations. Many of the old palaces and villas were expropriated and transformed into public facilities, rented out to diplomatic missions, or demolished and replaced by banal walk-ups. The latter were either sold as housing units or leased out as offices.

Vertical Expansion of Colonial Districts

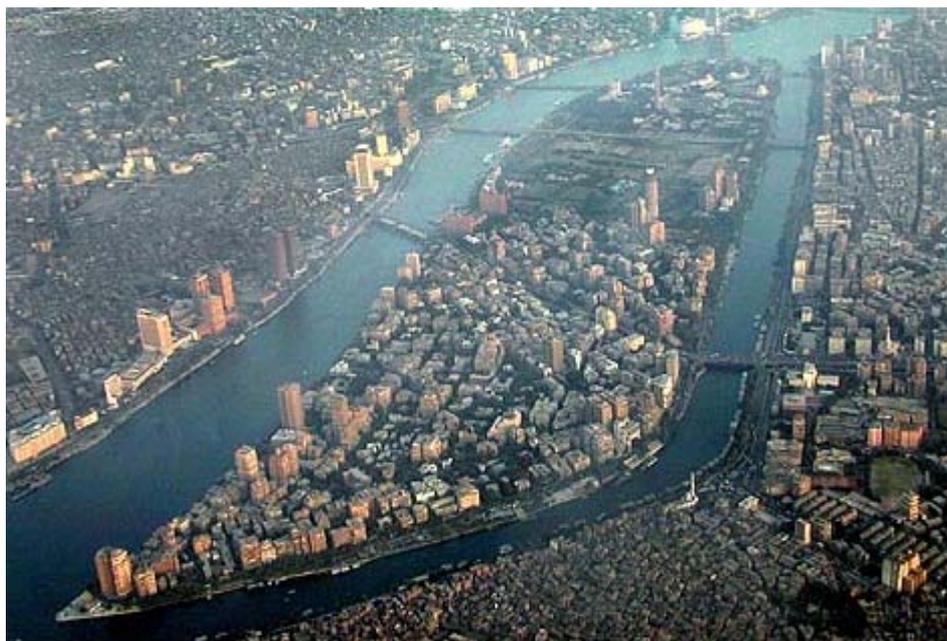


Figure 2-10 Vertical expansion of Zamalek district, Cairo

2.4.3 THE ABSENCE OF COHERENCE IN MODERN DISTRICTS

Much of modern districts in Egypt are problematic to insiders and outsiders alike. Their development during the second half of the 20th century is considered by many critics as inappropriate to the environment and culture of the region. There was a sudden break from the traditional to the modern built environment. Weakness and ignorance of building regulations lead to an absence of coherence in many modern districts, which lowered the visual qualities of these districts. Once the coherence was eroded each building could speak, or rather shout, for itself.

The planning schemes encouraged the adoption of building regulations in order to control the way in which buildings shall be erected, their height, the amount of land which each can occupy, the distance between buildings and the width of development roads giving access to houses. Building codes and regulations were introduced in order to allow a controlled development to take place. While building regulations control the construction of the individual building, usually the whole building fabric, rather than individual buildings matters most to the identity and character of a setting. Modern zoning regulations in the modern districts are looked at as "artificial" and therefore devoid of any cultural connotation.

"In the contemporary Arab-Muslim city, the process of relying on customs of use for the generation and control of change has been replaced by another process which relies on preconceived, prescriptive conventions of form. In the present city, we have a master plan accompanied by a package of zoning regulations. The regulations are formulated to tell people what to do whereas the traditional social conventions proscribe certain patterns of conduct. As a result of borrowing physical conventions from other contexts and applying them in the Arab-Muslim city a duality has developed in the system as a whole and more specifically in the regulatory mechanism resulting in confusion and contradiction." (Al-Hathloul 1981)

The aesthetic standards of building façades in Nasr City, as an example of modern districts in Cairo, is linked to the building code; this is recognized through two main phases. The first phase (1960-1970) the building code limited all heights by 2 to 5 floors for the majority of residential areas, except for high-rise apartments in main roads as well as governmental buildings. The building code also limited the retreat areas and accordingly the building ratio for each piece of land. The result was visual unity in its simplest sense.

The Absence of Coherence-Modern Districts



Figure 2-11 Absence of coherence between adjacent buildings, Nasr City, Cairo

In the second phase, the application of the building code started to weaken with the increase of the population problem in Egypt. This changed the shape of the skyline, which created ad hoc and disorganized horizons. The building ratio increased tremendously laying a huge load on the traffic network, especially at the intersection of main roads and over crowdedness parking lots in the internal streets. Besides, different unrelated housing forms and styles appeared as an expression of only economic factors. This dramatically lowered the aesthetic quality of the district (Amin, 1998).

“So it is necessary to control the architectural geometric physical elements by building codes and regulations. For the success of such codes, all designing elements of the building should be considered. Meanwhile it should not prevent the creative architectural solutions. Three main factors should be determined: building bulk, which includes floor area ratio, building heights, etc; building internal elements, which formulate building horizontal plans; building external elements, which formulate building facades. However, the validation of these regulations does not only depend on its items from the designing point of view, but should depend on other two main concepts. Firstly, the practicing, in which the phase of designing is monitored and supervised by executive authorities. Secondly, the existence of the legal force which, protects the building executive procedures.” (Amin, 1998)

2.4.4 TRANSFORMATION OF PUBLIC HOUSING ESTATES

The increasing demand for affordable housing in Egypt has urged governments, during the last decades, to commit themselves to provide completely finished housing units for medium and low-income families. In an exaggerated concern over physical features and standards, government officials have forwarded their systematic approach, underestimating its socio-economic and cultural shortcomings and excluding the low-income group from participating in the formal housing production. It was assumed by the decision makers in the 1970s that households were evolving towards a “modern way of life” which would be appropriately catered for in prefabricated mass housing dwellings. It was also assumed that households would quickly adapt themselves to the dwellings they were provided with. Such a deterministic approach, combined with the urgency to meet the housing needs resulted in the wide spread use of almost the same version of five-storey walk-up dwellings in various geographical areas without any consideration neither to different climatic conditions nor to households’ different social backgrounds and lifestyles. An average household size being estimated at 6 to 7 people (Behloul, 2002).

As a result of the inappropriateness of public housing and its failure to respond to users’ needs, many families decided to engage in informal building activities inside the formal sector. For instance, a variety of modifications and extensions were carried out in public houses without formal permissions. Given the scale of “illegal” building activities, local authorities had difficulty in maintaining a firm attitude towards transformers and usually ended by ignoring them. Transformations have resulted not only in an increase of the actual housing stock, but in

changing entire housing environments into dynamic, mixed-use developments where daily activities overlap and maximum use of the available space and resources is made. The new environments could be described as a combination of formal and informal housing, since they assimilate characteristics of both types.

The research examines the development of transformations in twenty⁴ public housing projects in Egypt where there have been evidence of informal user transformations. The factors that affect the extent of transformation developing in different public housing projects were classified under two categories: factors related to housing environments and others related to housing units⁵. The case of "Ain EL-Sira", a housing estate of 5000 dwellings built in the late 1950s in Cairo illustrates clearly how the distress brought about by overcrowded conditions has provoked uncontrolled extensions and construction activities by the inhabitants (Salama, 1994).

⁴ The twenty surveyed projects are: (1) Alexandria: EL-Azaritah, Lombrozo, Ghobrial, EL-Gabbari, EL-Mafuza, Kom el Shuqafa. (2) Cairo: EL-Zawya el Gedida, EL-Kossayirin, Bulaq, Zeinhom, Ezbet Bilal, Ahmed HELMI; EL-Zawya EL-Hamra, EL-Sharabeya, EL-Teraa EL-Bulaqiya, EL-Wayli, Imbaba, EL-Amiriya, Ain EL-Sira, Helwan.

⁵ Factors related to housing environments were:

- 1) Area; the size of projects is likely to affect the level of the local authority's control over the area,
- 2) Number of dwelling units; the large number of households living in a project could strengthen local opinion within the community, and thus undermine the attitude of local authorities towards transformers,
- 3) Density; less than 220 units per hectare, extensive transformation activities have taken place,
- 4) Built-up area; Projects with less than 20% of built-up area had undergone more extensive transformations,
- 5) Distance from city center; large-scale transformations were usually observed in remote areas,
- 6) Level of existing services; lack of existing commercial facilities has resulted in the emergence of a huge multitude of shops and home-based economic activities in several projects,
- 7) Conditions of open spaces; very limited extension activity was observed in projects where all streets, sidewalks and open spaces were paved, and
- 8) Socio-economic conditions of the resident population; Extensive transformations were found to be carried out by populations consisting of a combination of different income groups.

While the factors related to housing units were:

- 1) Location of blocks; transformations seemed to decrease in blocks located on the outer border of projects,
- 2) Open space between blocks; large extensions were more frequently observed when the distance between adjacent blocks exceeded 12 m,
- 3) Layout of blocks; patterns which represent a more compact layout have resulted in higher densities and less available open space for extension activity,
- 4) Design of blocks; blocks with open corners and accentuated facade projections were found to encourage extension activity, and
- 5) Location of flats within a block; largest and most frequent extensions were found at the ground floor level.

Transformation of Public Housing Estates

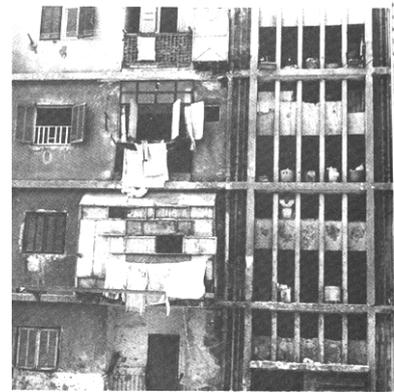


Figure 2-12 As a result of the inappropriateness of public housing and its failure to respond to users' needs, many families decided to engage in informal building activities inside the formal district

In a survey of 208 flats in this estate, it was found that almost half the sample had built extensions. The total average area gained depended on the flat location. Larger extensions were observed in the ground floor flats, which gained an average of 67 sq m compared to an average of 30 sq m for flats on other floors. However, there was also evidence that some parts of the estate remained unchanged (Salama, 1994).

The socio-economic homogeneity of the households living in the same block of flats was another factor found to influence the occurrence and type of transformations. This was particularly important in the case of vertical stack extension where households are expected to co-operate and contribute financially to the building of the initial structure.

2.4.5 GROWTH OF INFORMAL SETTLEMENTS

Over the past ten to twenty years, there has been a growing of both the informal settlements and non-governmental organizations which can react much more flexibly to the needs of the population, that they are virtually self-sustaining, and that they can assume tasks which the formal sector and the governmental administrations are unable to carry out⁶.

“Slums, unplanned, improvised, spontaneous, irregular or informal settlements, the terminology itself always contains a certain viewpoint; the poverty of the inhabitants, the spacial and social marginalization, the makeshift character of the houses, the unplanned development, the deviation from existing planning and building laws, etc.” (Ribbeck, 2002, P.66)

Industrial production processes of housing components tend to rely on imported building machinery and raw materials, involve expensive transportation systems, and introduce a distribution system, which multiplies the basic costs by added intermediate profits for importers, wholesalers, retailers, and construction firms. It results in prohibitive costs for rural societies, which are still rooted in pre-monetary economies. There, land is not a cost factor, building materials can be found locally and construction is done by the extended family group. Furthermore, modern formal-sector urbanization projects tend to become heavy administrative operations, involving land acquisition, legal procedures, construction permits, provision of infrastructure and services by the authorities, services of a contractor, etc. All this is alien to rural societies, where construction is an integrated daily practice, managed by the community and its individual members. Societies, which were accustomed to self-managed

⁶ Under the category of informal housing appears that unusual phenomenon of residence known as the city of the dead. It is a well-known fact that Egyptian culture is characterised by a deep concern for the after-life, a belief reminiscent of ancient Pharaonic civilisations, hence the construction of luxurious cemeteries. The need for shelter has driven many a homeless family to seek refuge in one of these cemeteries. All normal community functions and services can be found in the city of the dead: shops, mosques, street vendors and markets, which are held on a regular basis. Although operating illegally there is renting and sub-letting services available for those seeking residences. (El-Safty, 1984)

building processes for centuries, have developed traditions, which perfectly match both environmental conditions and social needs (Bianca, 2000).

“Spontaneous building therefore is not a tradition that must be nostalgically preserved, nor is it a helpless improvisation that desperately demands experts, but it is a tried survival practice of the urban masses, who with great determination - despite poverty and against all odds - conquer a small part of the city and thus of modern life” (Ribbeck, 2002, P. 13).

Literature has indicated that informal settlements are not always a bad thing, since they have both positive as well as negative aspects. While the latter must be dealt with and fixed, the first should be studied, analysed and exploited. The following table represents some of the negative and positive aspects of unauthorised development as indicated in literature, which applies to the Egyptian situation.

Table 2-4 Positive and negative aspects of the unauthorised development

Positive Aspects	Negative Aspects
<ul style="list-style-type: none"> - Components of unauthorised development represent a true manifestation of the inhabitants' real needs and requirements but in an unorganized and unplanned fashion. These real needs and requirements may be difficult to arrive at through conventional means of survey and questionnaires. - Literature on the matter indicates in numerous examples that squatter settlements are more eventful, lively and full of activities if compared with other pre-planned public housing districts. - Current literature calls for a change of perception of unauthorised development from a criminal act that deserves punishment and eradication to study it and deeply analyse its components in order to arrive at a useful conclusion in upgrading and re-planning this development. 	<ul style="list-style-type: none"> - Unauthorised development represents a great shame to the modern city and an eyesore to governments as a constant reminder of their weakness and inefficiency. - The wide spread of disease and infection in squatter settlements is imminent due to lack of infrastructure such as drinking water and sanitation coupled with severe shortage of health and medical services. - Squatter settlements present a host environment for criminals and outlaws since they provide them with a safe haven from police forces due to the difficulties of controlling these areas and knowing their roots in advance. - The negative effect of unauthorised development is not only limited to its boundaries but it extends this to the surrounding areas.

Informal housing, in the form of illegal subdivisions for low- and middle-income classes, is usually developed on the fringes of the built-up area. Such informal housing is built mostly on privately owned land (generally agricultural land) that is subdivided into small parcels without informing the local authorities and then sold to buyers without any legal deeds. Consequently, no building permits are issued.

The result is usually unplanned, high-density, and low-quality developments deprived of basic services and infrastructure. However, when such areas reach a population size large enough to exert political pressure, the government is forced to provide them with water, electricity, and sometimes sewerage networks.

Table 2-5 Formal and informal buildings percentage in Egypt

Time of construction	Informal	Formal
Before 1960	43.7%	56.3%
1960-1970	72.2%	27.8%
1971-1976	88.8%	11.2%
1976- 1984	75.0%	25.0%

Growth of Informal Settlements



Figure 2-13 Growth of informal settlements, Dar al-Salam, Cairo

In 1994, 14% of the buildings in Cairo were not connected to any infrastructure system. Of the remaining 86%, 9% are still not connected to the water system, 8% have no electricity, and 38% are unconnected to sewage disposal networks. Solid waste disposal is a major problem in Cairo, where more than 3,000 tons of solid waste is produced every day: 60% is collected by private contractors and the remaining 40% by local municipalities.

Informal settlement operators based in "refuse settlements" pay for the rights to collect refuse from wealthier parts of the city, using female household labour to sort it into recyclable waste for sale, organic waste for animal fodder, and unusable waste, which is burnt. An effective system, which results in very poor environmental conditions in the settlements concerned (Findlay, 1994).

Mancheyt Nasser the biggest informal settlement in Egypt, is located in central Cairo and estimates of its population suggest figures between 350,000 and 500,000 people, living on a hilly site of 7.27 sq km (CSCRS, 1998). For more than four decades, the area has attracted residents from rural areas searching for better services and income. Mancheyt Nasser's hilly terrain, in addition to its lack of basic urban services such as water, sanitation, access road and health care facilities became sources of risk and insecurity.

The World Bank included the project in a larger profile of support to the urban sector in Egypt during the late 1970s. The idea was to collect funds equal to the price of occupied plots from residents based on the market value then, and to use the proceeds in providing and upgrading infrastructure. This was never completed due to bureaucratic hurdles and an unfavorable political context. However, a number of schools and health care facilities were established in the area.

In 1972, the City relocated garbage collectors, *Zabbaleen*, to the area. This meant that garbage from all over the city of Cairo found its way to Mancheyt Nasser for manual sorting and the raising of pigs on organic content and recycling. Since then, Mancheyt Nasser became linked to garbage processing, with its physical and social connotations.

The state had a non-action policy towards the area until the mid 1990s. In the process, the population quadrupled, and the weak infrastructure and social services (schools, health care units, etc.) became obsolete and inadequate⁷. Land occupation continued to be subject to informal subdivisions sold in a shadow market governed by powerful residents with links to the formal structure. The real estate market in the area provided affordable, though unhealthy options for rural immigrants. A multi room unit is sold on a family-per-room basis. It is common for more than one family to share the same toilet.

⁷ Health Care Facilities in Mancheyt Nasser: Three health care centers and two ambulance units serve the entire population of the area. Each center serves about 150,000 persons within the area, in addition to other citizens living outside Mancheyt Nasser. The total number served by the three centers reach about 800,000 to one million persons. This is close to double the number of persons that should be covered by the available facilities. The Egyptian standards devised by the Ministry of Health indicate that such a number should be served by a general hospital that would be equipped with departments for inpatient treatment and emergencies. The current number of doctors is 32, which should be raised to 48 according to the same standards (Cairo Governorate et al., 2001)

Human livelihood activities became a source of adverse environmental change that, in turn, constituted a source of vulnerability to human health and wellbeing. The burning of non-recyclable waste in the *Zabbaleen* quarter to clear more area for receiving and sorting more garbage, increased the temperature of the limestone and made it more fragmented, in addition to increasing levels of air pollution. Daily use of toilets connected to leaky sewers and septic tanks caused a flow of grey water on the steep and already destabilized limestone. Dumping and accumulation of uncollected solid wastes resulted in the flow of acid leachate onto the limestone, which exacerbated its erosion and heightened the risk of falling rock. Polluting manufacturing activities (e.g. steel smelting, hot mixing of paints, plastic making, car repair, etc.) resulted in dangerous emissions and poor occupational health status among the labor force. Most of the labor force in these activities was drawn from school dropouts and the youth, the dominant age bracket in the area (CSCRS, 1998).

2.5 CONCLUSION

The urban patterns in the Egyptian cities have been rapidly changing over the last three decades. This change was brought about by the dynamics of social and economic forces changing the face of cities and it is continuing to this day.

The problem of transformation of urban patterns in Egyptian cities stems from different reasons. These reasons were: a rapid increase in population not matched by additional new housing units, internal migration from rural to urban centres, deterioration of old parts of the cities without up-grading or equivalent replacement, accumulation of housing shortage over the years, and finally, the increasing gap between the cost of housing and income levels.

The transformations of the urban patterns can be summarized as follows:

DECLINE OF TRADITIONAL DISTRICTS

The newer zones attracted the local aristocracy, but eventually even the bourgeoisie began to desert the traditional districts for the new. The growing number of the working-class, lower-income residents and rural immigrants filled the places they vacated. Poor economic conditions of new occupiers, lack of commitment and discontinued maintenance of buildings then lead to a rapid dilapidation of the housing stock. Collapsed buildings have always been replaced by new structures of different characters and qualities.

DETERIORATION AND VERTICAL EXPANSION OF COLONIAL DISTRICTS

Colonial districts were used as a quarry for their progressive establishment, and historic buildings, therefore, were condemned to disappear. The districts lost their traditional character as tall apartment buildings replaced villas.

THE ABSENCE OF COHERENCE IN MODERN DISTRICTS

The planning schemes encouraged the adoption of building regulations in order to control the way in which buildings shall be erected, their height, the amount of land which each can occupy, the distance between buildings and the width of development roads giving access to houses. Building codes and regulations were introduced in order to allow a controlled development to take place. While building regulations control the construction of the individual building, usually the whole building fabric, rather than individual buildings matters most to the identity and character of a setting. Modern zoning regulations in the modern districts are looked at as "artificial" and therefore devoid of any cultural connotation. However, the validation of these regulations does not only depend on its items from the designing point of view, but should depend on the practicing and the existence of the legal force.

TRANSFORMATION OF PUBLIC HOUSING ESTATES

As a result of the inappropriateness of public housing and its failure to respond to users' needs, many families decided to engage in informal building activities inside the formal sector. For instance, a variety of modifications and extensions were carried out in public houses without formal permissions.

GROWTH OF INFORMAL SETTLEMENTS

Though this land encroachment and shelter provision are illegal, they present, in many cases, the only option, since governments are unable to provide enough serviced land for housing the poor. Components, however, represent a true manifestation of the inhabitants' real needs and requirements but in unorganized and unplanned fashions. These real needs and requirements may be difficult to arrive at through conventional means of survey and questionnaires.

