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Author:	Abdalla Abdelaziz Attia, Ain Shams University
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DEVELOPMENT AND MANAGEMENT

Cities Spanning the Millennia: Cairo/Alexandria

Policies for Directing Urban Growth in Greater Cairo Region: A Critical Analysis

Abdalla Abdelaziz Attia

ABSTRACT

Throughout history, Cairo and Alexandria have attracted migrants from Egypt's rural and less developed communities searching for better jobs, better income, and better livelihoods. This, however, had increased the two cities' problems. Indeed, congestion, pollution, squatter settlements and slums, breakdown in urban services are just few implications. For example, the population of Greater Cairo reached about 15 million inhabitants in year 2000, 30 percent of which live in slums. In addition, the urbanization phenomena had been decreasing agricultural land and thus risking the country's food supply. Accordingly, the last 3 decades had witnessed the preparation of many planning studies to cope with the population and urbanization problems. The main objective of the national development strategy had been to direct the urban growth of Egypt's mega cities away from the agricultural land in the Nile Valley and Delta and towards the desert areas.

Hence, the focus of this paper is Cairo. The paper attempts to critically analyse the urban development plans and policies that aimed to solve Cairo's underlying problems particularly the policies for directing the city's urbanization towards the desert areas away from the scarce agricultural lands. The paper will analyse the different studies for Cairo's development that had been carried out from the early 1970s. The aim of this paper, therefore, is to draw the lessons that could be learnt from the experience of the last 3 decades. Accordingly, the paper reviews Cairo's urban development policies for dealing with problems of unemployment, migration and the increase of inhabitants in the city, the expansion of the built area of the Greater Cairo Region, and the decrease of agricultural land. The paper will also analyze the policy for directing urban growth that was formulated in 1997.

The paper calls for the re-assessment of the national urban development policy in order to redistribute the new towns and new urban communities throughout the whole country so as to release the pressure on Greater Cairo Region from the growing urban concentration. It also highlights the need for an

even distribution of public and private investment throughout the whole country to ensure equity among all Egyptian social groups. It argues that urban development policies should be for the public interest rather than for personal interests that serve short-term political and economic benefits. Finally, it points out the importance of capitalizing on the information technology to assist in the policy formulation, implementation and monitoring processes in order to manage and control high population densities, congestion and environmental problems and achieve sustainable development.

Abbreviations

GOPP	General Organization for Physical Planning
GCR	Greater Cairo Region
CAPMAS	Central Authority for Public Mobilization and statistics
Ha	Hectares (= 10,000 square meters).

1 CAIRO'S URBAN DEVELOPMENT PLANS IN THE PERIOD BETWEEN 1970 AND YEAR 2000: AN INTRODUCTION

The idea of directing urban growth towards the desert areas away from the densely populated Greater Cairo Region (GCR) was raised in the early 1970s. The idea was to formulate urban development plans based on the concept of creating satellite towns in the desert areas, east and west of the built area of Greater Cairo to direct urbanization away from agricultural lands.

The implementation of the urban development plans that aimed at directing urban growth towards the desert has been taking place since 1970 through successive master plans that proposed establishing new cities, new towns, new settlements, and new urban communities. However, it was not until the late 1980s when the implementation of the development plan was realized due to the delays in implementing the infrastructure and the roads' networks.

Successive alterations to the master plan were carried out in order to promote a quicker urban growth towards the desert. The development plan was formulated in 1970; its first amendment was authorized in 1983. In 1991 another revision to the master plan took place. Later, in 1994, the plan was amended, and finally, in 1997 the development plan was approved and

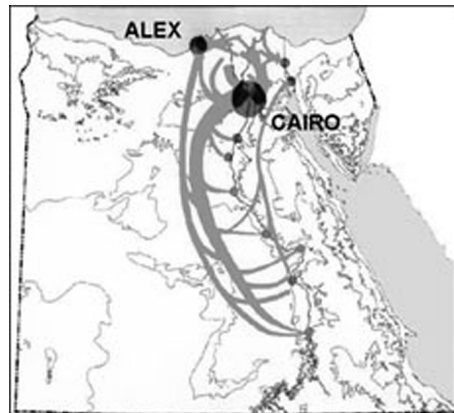


Figure 1 Egypt Repulsion Movement to Major Urban Centers, Cairo & Alex. (GOPP 1992).

authorized. The following sections will analyze the successive development plans for the GCR.

2 EVOLUTION OF THE MASTER PLAN FOR GREATER CAIRO REGION (GCR)

2.1 Greater Cairo Master Plan (1970)

In the early 1960s, the rate of increase of population in Cairo was 4.15% (CAPMAS 1966). This was due to the push factors from the rural and less developed areas in Upper Egypt and the Delta to Cairo and Alexandria Cities being the two largest urban centers of Egypt.

This had necessitated that a high planning committee was to be formed in 1965 to plan for the development of Greater Cairo Region (GCR) to cope with the problem of population explosion. The committee determined the boundary of the GCR, which included the following areas:

- a) All inhabited areas in Cairo Governorate and the adjacent inhabited areas of Giza and Kalyoubia Governorates.
- b) The economical or social activity areas that service the above mentioned inhabited areas.



Figure 2 Greater Cairo Region (GOPP 1982).

c) The areas on which the urban extensions would physically extend during the following 50 years in order to direct and control the extension of the built area away from the agricultural lands and archaeological areas.

Accordingly the GCR total area was estimated to be 685,000 feddans, (287,700 hectares) where the primary land uses were distributed as follows:

Uses	Area	%
Desert areas	168840 ha	58.7
Agricultural areas	87780 ha	30.5
Built areas	26040 ha	9.05
Water areas	5460 ha	1.75
TOTAL	288120 ha	100

The central city area of Cairo represented 6% of the total built area where the governmental, commercial, and financial activities were concentrated. The built areas of Cairo City center included the following uses:

Uses	Area	%
1) Housing areas	8983.8 ha	34.5
2) City Center	1562.4 ha	6.0
3) Natural areas around GCR	651.0 ha	2.5
4) Secondary Services	3906.0 ha	15.0
5) Industrial areas	3515.4 ha	13.5
6) Cemeteries	651.0 ha	2.5
7) Military areas	6770.4 ha	26.0
TOTAL	25200 ha	100

2.1.1 The analysis of Cairo’s population growth

The GCR planning committee estimated that the population of GCR would amount to 14.8 million by 1990 assuming the decline of the rate of increase of immigrants to Cairo (2.9%), which represented 70% of the rate of increase of GCR population, and also assuming that the natural rate of increase was constant (1.25%) which represented 30%.

It is necessary to point out that in the period between 1947 and 1960 the rate of increase of population in the city central district amounted to 2.6%, while the rate decreased by (−0.7%) between 1960 and 1976; and by (−16%) between 1976 and 1986; and by (−1.5%) between 1988 and 1996.

Despite the decrease in the population of Cairo’s central district (as shown in the following table), the population of the Greater Cairo Region (GCR) has been growing and urbanization has been increasing replacing the scarce agricultural lands (as Figure 3 illustrates)

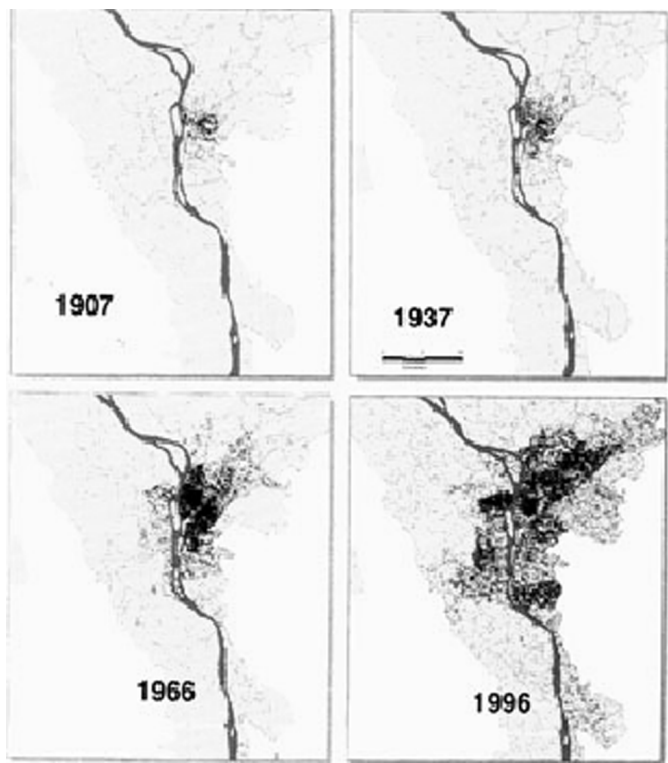


Figure 3 Population distribution 1907–1996.

Period	Increase or decrease of population in the city center	Average yearly increase or decrease of population	Percentage of increase or decrease
1947–1960	+443 637	+34 126	+2.6
1960–1976	−207 783	−12 948	−0.7
1976–1986	−245 107	−24 511	−1.6
1986–1996	−198 979	−19 898	−1.5

2.1.2 Objectives of the 1970 master plan

The master plan of 1970 (shown in Figure 4) identified the following planning objectives:

- a) To direct the urban extension to four cities around Cairo city.
- b) To absorb the 42% of estimated increase of population. The density of population of the built area was estimated (325 p/ha) and of the new cities to be (238 p/ha).

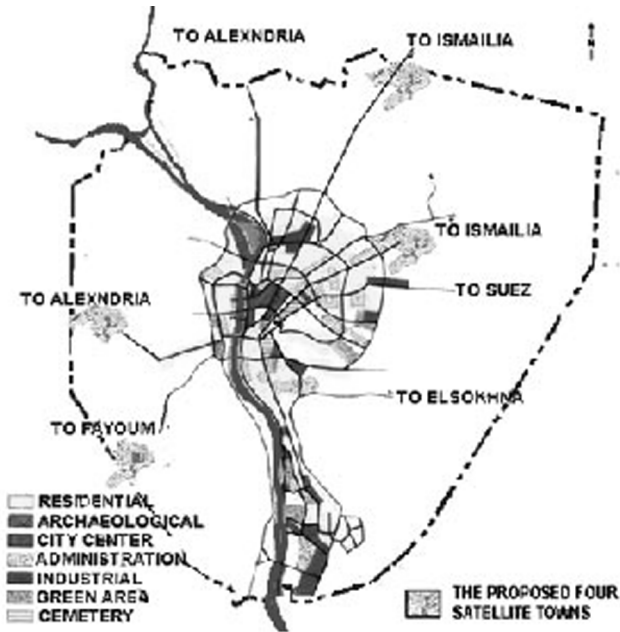


Figure 4 1970 GCR Development Plan (GOPP 1982).

- c) Protecting the agricultural lands from being replaced by built areas.
- d) Establishing a green belt around the built area of the GCR to limit its growth.
- e) Creating a rapid transit facility (Metro) around GCR to facilitate the population movement and to connect the existing communities by the new communities.

2.1.3 Planning policies during the seventies

2.1.3.1. In 1973 the General Organization for Physical Planning (GOPP) was established to be responsible for all physical plans in Egypt. Its prime objective was meeting the national goal of directing the urban extensions away from the Nile Valley and Delta.

2.1.3.2. In 1977 the Presidential Decree No 475 sub-divided Egypt into 8 economic regions (later became 7 regions in 1983 by merging Alexandria and Matrouh regions) as shown in Figure 5.

2.1.3.3 In 1979 a new organization was founded (General Organization for New Communities) to become responsible for planning, implementing and managing new cities and new settlements that were being built outside the boundaries of the existing urban agglomerations.

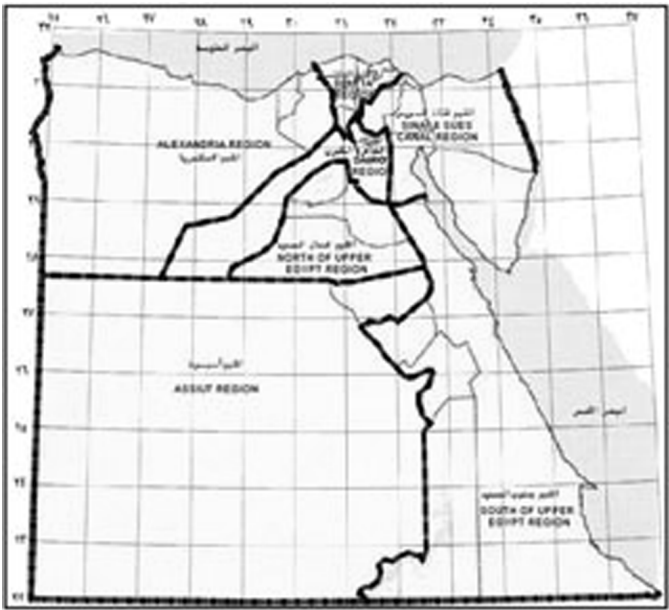


Figure 5 The Seven Economic Regions (Source: Ministry of Planning).

2.1.3.4 As a result of the social and economic changes in the Egyptian society in the late 1970s, especially in Cairo, the nature of investment of the public and private sectors in urban development projects had experienced significant changes. These changes had strong implications on implementing the 1970 master plan for the GCR. Accordingly, the changes had also necessitated that a revision and an alteration to the master plan take place.

2.2 Greater Cairo regional plan 1982–2000

A planning unit within the GOPP was founded in 1981, to be responsible for reviewing and updating the planning strategy for the regional urban development.

Accordingly, it established a long-term regional urban plan for Greater Cairo Region (GCR), which was approved and authorized in 1983 by a Presidential Decree.

The regional plan estimated that the GCR population in year 2000 to become 16 million inhabitants¹. The planning goals of 1982 plan could be summarized in two main points:

1. Promoting economic growth.
2. Upgrading and enhancing the living environment.

The strategies for achieving the above-mentioned goals were identified as follows:

- Directing urban growth of GCR towards the desert to protect agricultural land from being invaded and decreased.
- Dividing the region into homogeneous sectors to facilitate urban development management.
- Encouraging the private sector to participate with the public sector in urban development activities.
- The integration of all development sectors.
- Preserving and upgrading the cultural, archaeological, and historical heritage, being of great national value and protecting them from disintegration, degradation, and pollution.

In order to fulfill the above-mentioned goals and strategies, the 1982 development planning had also identified the programs and projects that would enable implementation as the following section illustrates.

¹ In year 2000 the population of GCR was 14.9 million, distributed as 6.8 million in Cairo Governorate, 4.8 million in Giza Governorate, and 3.3 million in Qalubia Governorate.

2.2.1 Strategic recommendation of the 1982 master plan

2.2.1.1. The construction of a ring road around the existing GCR built area in order to achieve the following objectives:

- Avoid through traffic in the existing built area.
- Controlling the increase of the built area within a defined framework.
- Directing urban growth towards the desert.

2.2.1.2. The creation of new urban communities in the desert areas outside the ring road.

2.2.1.3. The division of the region into homogenous sectors, each sector with its homogeneous social, urban, and economical characteristics. The region, therefore, was subdivided into 16 homogeneous sectors (shown in Figure 6). Each sector included 1–2 million inhabitants living in a homogeneous social and urban pattern. Each sector would offer sufficient job opportunities for its inhabitants, as well as sufficient basic services.

The usage of existing road networks that link the GCR to the desert for directing the urban extensions towards new development axes in the desert areas outside the ring road.

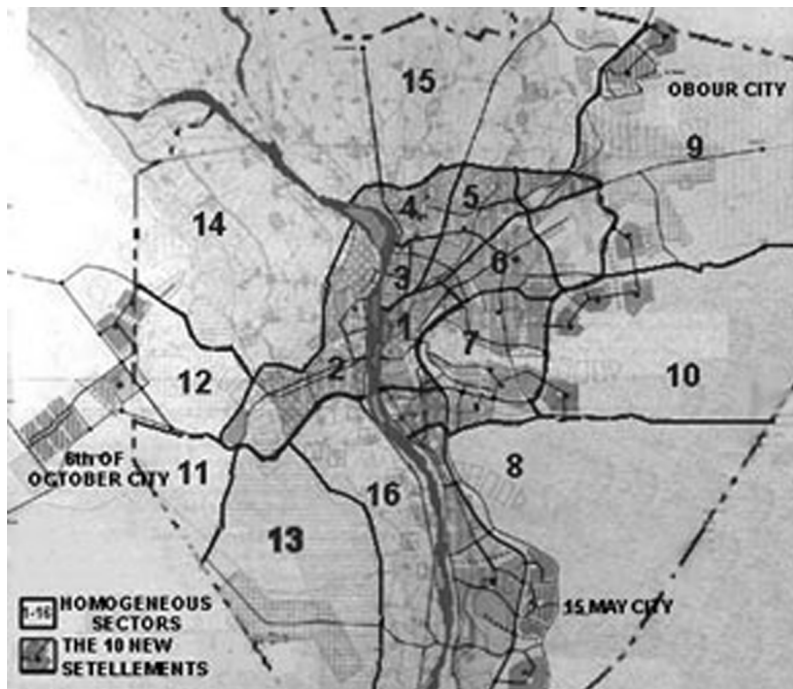


Figure 6

2.2.2 *Implementing the 1982 development plan*

According to the GCR urban development plan (1982–2000) the built area of Cairo City was to be limited to 20,580 ha while the population was not to exceed 6.3 million inhabitants (i.e. a population density of 304 p/ha). Such built area was meant to include new settlements to be located east of the ring road and also include 15th of May City (located to the south of Cairo City) around which 2 new settlements were planned to be implemented. In addition, a green belt was planned to be implemented to the east of the existing built area in order to limit its growth towards the 4 new settlements which were planned to be located on the east side of the ring road (GOPP 1982).

The growth of Cairo's built area amounted to 23,010 ha in the period between 1981 and 1986 (i.e. the built area exceeded what was expected by an additional 2,100 ha). Moreover, the population of Cairo city reached 6,068,000 inhabitants in 1986 (a population density of 264 p/ha) (GOPP 2000, CAPMAS 1996). Accordingly, the implications of the 1982 long term urban development plan for GCR, in general, was positive particularly in areas such as:

- The decentralization of service activities to be in sub-centers within the 16 homogeneous sectors.
- The rate of loss of agricultural land in favour of urbanization decreased during the 1990s to 25% of the rate of decrease that occurred during the previous 3 decades.
- The development axes and roads networks were implemented according to the regional urban planning of 1982. Indeed, the ring road and its intersections are almost completed.
- The metro as a rapid transit system was also established to connect Cairo's central area with the south, the north, north-east, and western sectors.
- Finally, the urban growth was also directed to the new cities located north, east and west side of the ring road and also to the south of Cairo as follows:
 - Obour City and new settlement No. 10: were to absorb the population from, and serve, sectors No. 15 and No. 8 north and north east of Cairo.
 - Badr City: were to absorb the population from, and serve, sector No. 8
 - New settlements Nos 1, 2, 3, 4, and 5: were to absorb the population from, and serve the eastern sector No. 10.
 - 6th of October City and new settlement No. 6 and No. 7: were to absorb the population from, and serve the western sectors.
 - 15th of May City and new settlements No. 8 and No 9: were to absorb the population from and serve the southern sectors.

It was recognized that several political, administrative, and economic factors had constrained the implementation of many of the 1982 planning objec-

tives. However, it was necessary to capitalize on the positive outcomes of policy and to dissipate the negative results.

2.3 GCR development plan 1986–2000

The General Organization of Physical Planning (GOPP) had to revise and amend the 1982 regional urban development plan because urbanization continued to decrease agricultural lands and the rate of increase of the GCR’s population continued to rise.

Indeed, the average annual growth of Cairo City’s built area alone in the period between 1982 and 1986 exceeded 832 ha per year (compared to the annual average growth rate which was 382 ha per year between 1970 and 1981). In fact, the total built area in the Greater Cairo Region (Cairo, Giza and Kalyoubia) exceeded 4158 ha. This had necessitated the revision of the 1982 master plan

The main objective of the updated development plan for the GCR (of 1986) was to limit the growth of urbanization to be within the ring road. The new settlements located on the east side of the ring road became 5 settlements instead of 4. A green belt was recommended in order to limit and direct the city growth eastwards.

However, the 1986 planning failed to achieve its objectives, which necessitated another revision and amendment to the master plan.

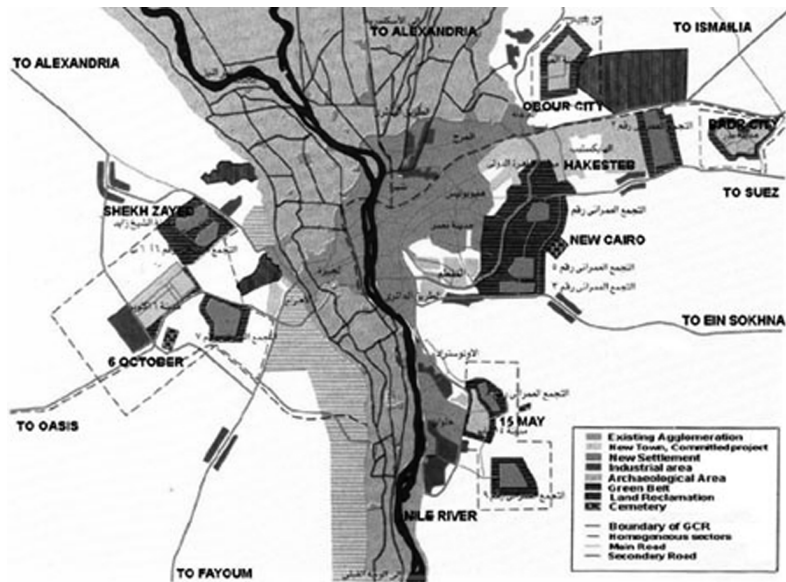


Figure 7 The GCR Urban Development Planning of 1991 (GOPP 1992).

2.4 The 1991 development planning for the GCR

Due to the failure of achieving the goals of the 1986 GCR plan, the GOPP decided to re-update the plan in 1991. The new updated plan had to deal with the miss-use of land by prohibiting the growth of the built area towards the east and north-east in order to protect agricultural land. It was also recognized that the green belt had to be established to limit the fast growing urbanization.

With respect to the population growth, it was noticed that the annual average growth rate decreased during the period between 1986 and 1991 from the annual average growth rate during the period between 1981 and 1986. The average annual increase of population was 208,000 inhabitants per year (between 1986 and 1991) compared to 95,454 inhabitants (between 1981 and 1986), while the population growth of Cairo City reached 104,000 inhabitants in 1991. Accordingly the overall population density decreased from 264 p/ha to 219 p/ha (CAPMAS 1996, GOPP 2000).

However, the urbanization phenomena continued to pose a threat to the country's scarce resources especially agricultural land. The urbanized area of Cairo City exceeded 5,166 ha during the period between 1986 and 1991. The annual average urban growth was 1,033 ha per year, which exceeded the annual average growth between 1981 and 1986, (which was 842 ha per year). Also, Cairo City Center continued to push the population away towards other parts of the city. Therefore, this had necessitated another revision of the GCR's development planning.

2.5 The main objectives of GCR development plan (1997–2017)

The main objectives of the 1997 development plan were based on sustaining economic growth, upgrading, and improving the living environment. The strategies for realizing these goals could be summarized as follows:

- Protecting and preserving agricultural lands.
- Controlling and restricting the unplanned expansion.
- Organizing the urban structure and providing public services.
- Restoring the old city's historical areas. Improving the transportation networks.
- Improving and increasing the infrastructure.
- Protecting the urban heritage as a means to promote tourism development.
- Providing planned locations and substitutes for housing especially for the low-income population.
- Rationalizing the policy of promoting industrial settlements.
- Protecting and enhancing the city's resources particularly water supply.
- Controlling and regulating the sources of pollution and disturbance.

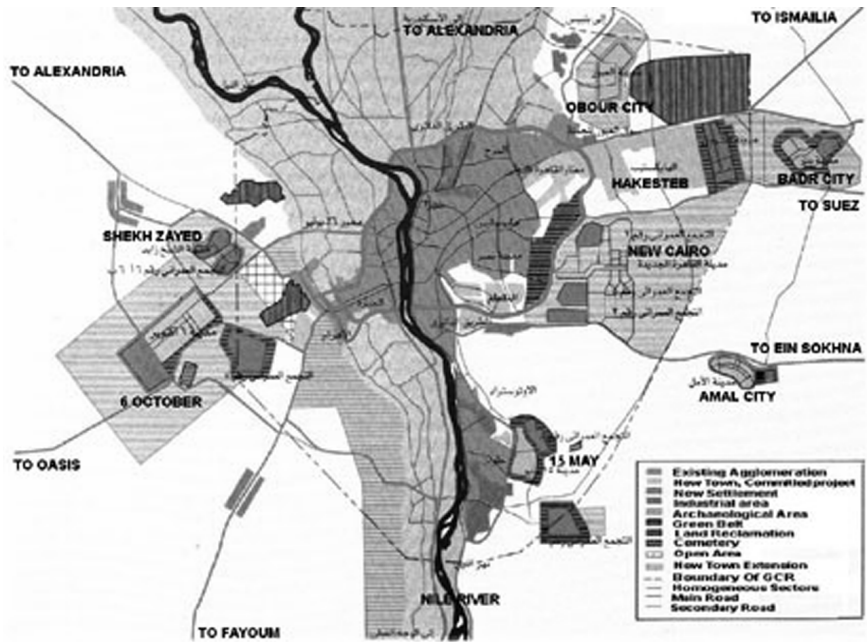


Figure 8 GCR Development Plan 1997–2017.

The following analysis indicates the components of the development plan of 1982–2000 compared with the components of the development plan of 1997–2017.

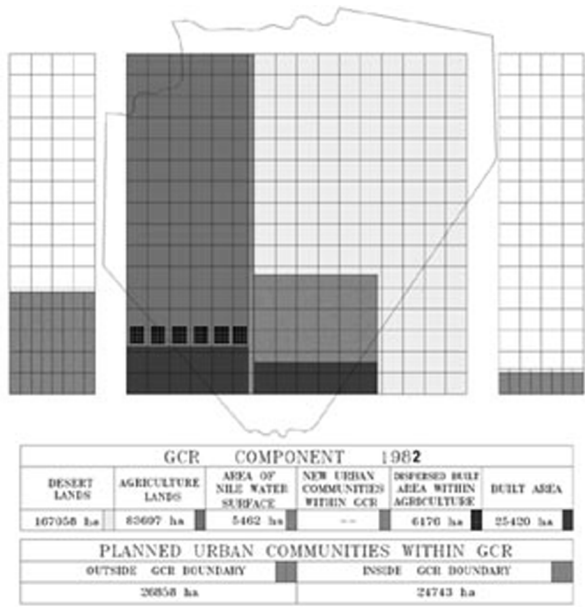


Figure 9 GCR Land use components – 1982 Development Plan Analysis.

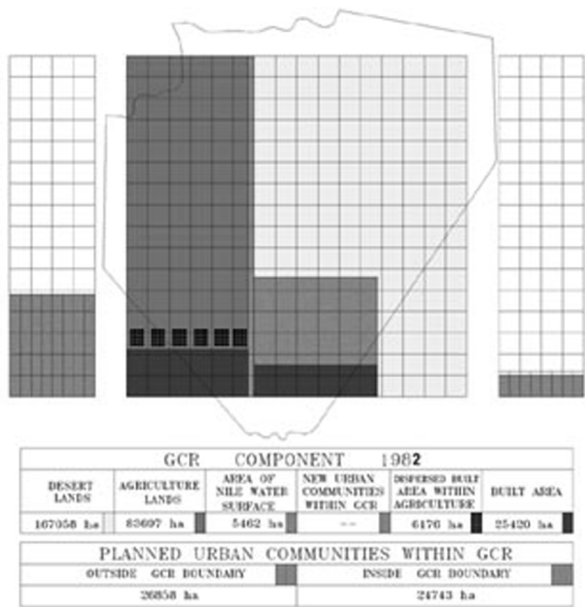


Figure 10 GCR Land use components – 1997 Development Plan Analysis.

The development plan of 1997 had included strategies and recommendations that attempted to improve the quality of life and protect the environment in the region through the following actions:

- Creating a peripheral way around Greater Cairo region.
- Building new urban communities on the desert lands adjacent to the urban agglomeration.
- Applying the homogeneous sector system as means for managing and controlling urban development. Such homogeneous sectors (16 sector) were determined in the original 1982 development plan as mentioned before.
- Determining new axes for the growth of the GCR's urban development.

The remainder of this section attempts to analyze and evaluate the recommendations and scenarios of the 1997 development plan and the new scenarios and decisions that emerged prior the 1997 plan particularly in a new revision of the plan in year 2000. The focus will be on the fundamental actions that constituted the main elements of the 'scenarios' particularly the establishment of a peripheral way around the Greater Cairo Region and the establishment of New Cairo City to strengthen the east-western development axis.

2.6 The action of creating a peripheral way around greater Cairo region

The first ring road, which was determined in the 1982 development planning, gave opportunity after its realization to open the desert areas to the urban extension. Such ring road was planned as a peripheral way around the GCR built area to limit its extension and to decrease traffic.

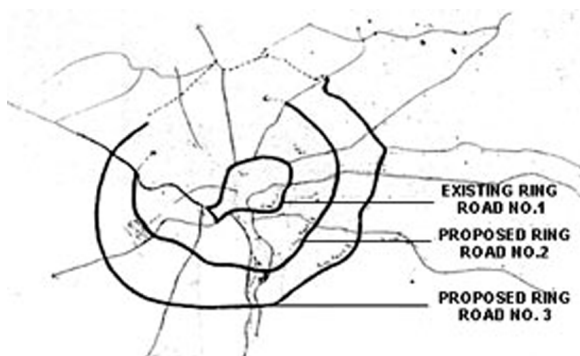


Figure 11 The Three Ring Roads.

Another ring road was proposed as a peripheral way around GCR at 30 km far from Cairo's city center to limit the new urban extensions east and west of the first ring road that was already executed, and at the same time, to directly connect the new urban communities without passing through the existing Greater Cairo's built area.

A third ring road was also proposed in year 2000 (50 km far from the city center) in order to facilitate the national-scale freight transportation and to avoid crossing the central urban area – forming with the former 2 ring roads a

concentrically urban extension scheme, which would be a very risky action because of the expected sprawl shaped extensions in all directions.

2.7 Proposal to strengthening the east-west axis

Since the first ring road had succeeded in linking the desert areas with the urban extensions, it was proposed to strengthen the east-west axis by two north-south tangential corridors along the existing ring road. Such corridors would be linked by north-south links without building an additional ring road.

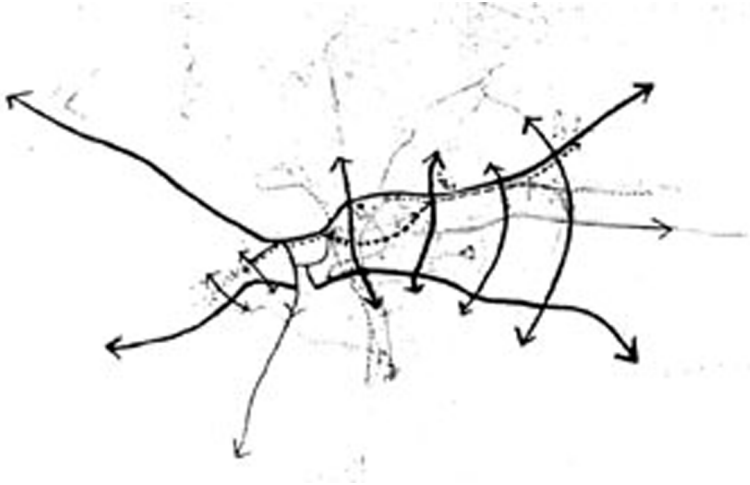


Figure 12 East-west axes with a regional mass transit system downtown.

Such proposal involves establishing a mass transit system (metro) at the regional scale and avoid the extension of urbanization within the protected areas especially the northern and southern agricultural lands and the archaeological zones in (including the pyramids) in Southwest of Giza Governorate.

In year 2000 the ring road at a distance of 50 km from the city center was approved so as to facilitate the national freight transportation. There are risks involved as a consequence of this action:

- A new boundary for the GCR would be established;
- The urbanized area within the new ring road would increase; and consequently
- Agricultural land that lies within the new boundary would decrease.

This calls for a new regulatory framework to enforce the protection of agricultural lands and prevent additional urbanization within the new proposed boundary of the GCR.

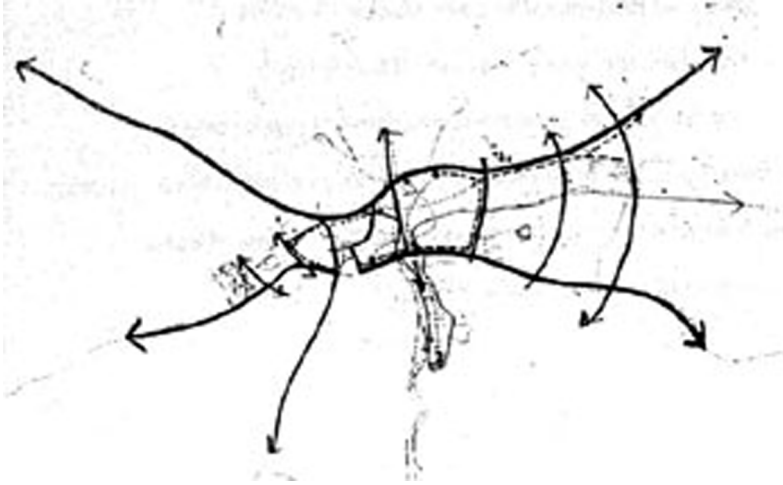


Figure 13 East-west axes with a regional mass transit system from the outskirts.

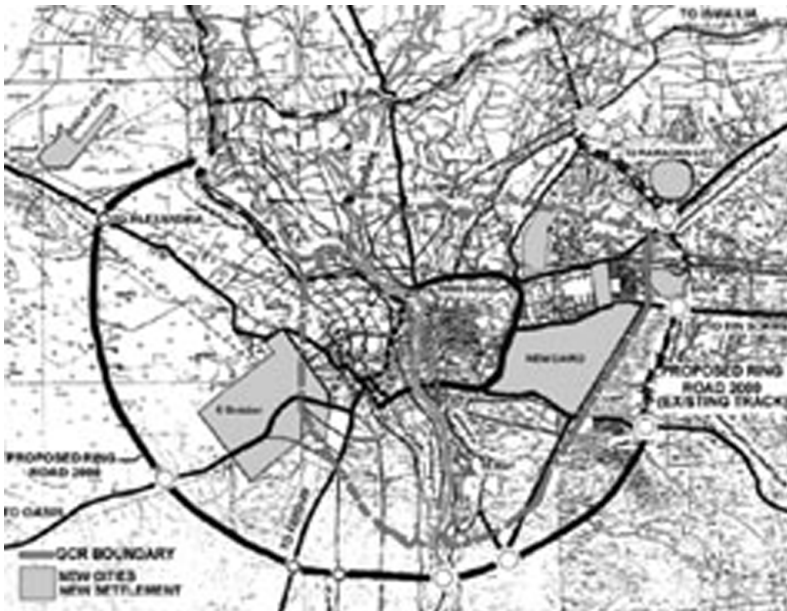


Figure 14 (lower) Proposed ring road number 3.

3 CONCLUDING REMARKS: EVALUTION OF THE NEW URBAN DEVELOPMENT PLAN OF 1997–2017

To conclude, this section attempts to emphasize five important issues that need to be incorporated in the urban development planning for the Greater Cairo Region to ensure effectiveness and to avoid the loss of the time, money and effort that accompany the preparation of successive master plans:

3.1 Redistribution of the New Urban Communities

By analyzing the targeted new urban extension of GCR for year 2017 we find that such extension, which include new cities and new communities, represent around 49.5% of the new urban extensions nationwide. The number of inhabitants was estimated at 8,113,250, while 1,269,009 job opportunities were planned to be offered until 2017 which represent about 42.40% of the total national targeted job opportunities as shown in the following table:

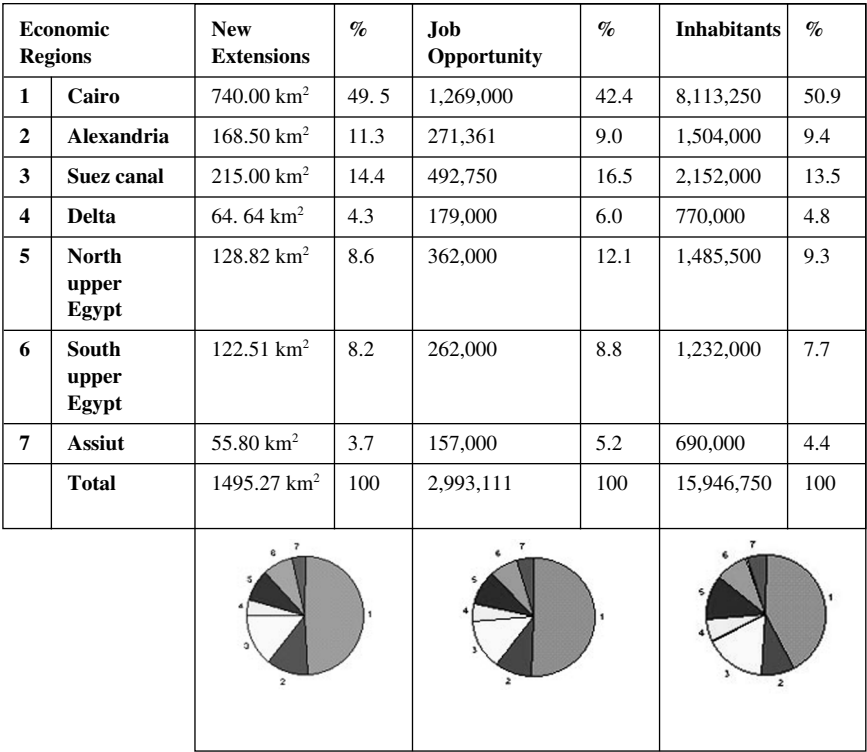


Figure 14 Policies for New Urban Communities with respect to Job opportunities and Population in the 1997–2017 Development Planning.

This means that the new urban extension will continue to be more and more centralized within Cairo region. Therefore it is of utmost importance to reformulate the national policies in order to redistribute the new urban communities, the job opportunities, and the inhabitants throughout the 7 economic regions, while special attention should be made for directing urban extensions to the southern regions. Also it is necessary to decrease the rural-to-urban migration and manage the factors that could realize the decrease of migration from the countryside to Cairo, (which ranges between 100,000 and 150,000 inhabitants every year). For example, government administration should be decentralized and allocated outside Cairo, and higher education institutions should be allocated in the new cities to attract people to settle there.

3.2 Effect of New Information Technology Revolution on Decentralization Policies

The revolution of the new information technology should be invested for directing decentralization policies in order to relieve Cairo as a mega city from high population densities, transportation, traffic and environmental problems.

However, Cairo as a mega city will be a major future component of the globalization epoch. Therefore, major activities and facilities of international magnitude should be considered in the future development plans.

3.3 Community Development Policies and Comprehensive Development Plans

Community development policies should guide and direct new urban extensions and new urban renewal policies in order to achieve integrated national development plans on the local, regional and national levels. Therefore, national public and private investment should be carefully directed to realize the welfare of the different Egyptian social groups all over the country and not to be only concentrated in major cities such as Cairo and Alexandria.

The rate of change of the city dynamics, city problems, urban fabric, and people's needs is faster than the time taken to formulate and implement policies that are prepared to cope with the problems in the cities. Indeed, the speed of change challenges the traditional method with which urban planning had been conducted. Planning, therefore, should be for sustainable development so as to cope with the fast changes in the urban environment, which has been fuelled by the fast change of technologies and of the revolution of sciences in all fields, which has its direct effect on humanity and the living environment.

3.4 Rehabilitation Development Plans as a Major Constituent of the National Urban Development Planning

Rehabilitation development plans should be carefully studied as important components of the national urban context. National development policies should be directed to solve the problem of informal housing in Cairo and Alexandria and in other cities in the Nile Delta and in Upper Egypt, especially because about 40% of Egypt's population live in informal housing (CAPMAS 1996).

Also it is of great importance to continue the national efforts, which started in the last few decades, which aimed at solving the problem of informal housing within the existing urban areas.

Finally, public and private investors should participate in implementing development projects in valuable locations, which are exploited in present day by squatter settlements and polluting activities. Low and medium income groups living in such valuable locations should be offered new houses of suitable rents. Mortgaging systems should be adopted as a tool for providing housing ownership's for these groups.

3.5 Abiding By the National Goals

A final remark that this paper attempts to point out is that the national goals are clear, rational and purposeful. It is, therefore, necessary to abide by the objectives of the national development strategy in all development plans, and projects. Indeed, policies for directing urban growth of the GCR should be formulated to fulfill the three primary national goals, which are:

- Protecting agricultural land;
- Reducing population density, and
- Raising the standard of living for the population.

The above goals could be disaggregated into more specific objectives. The objectives are environmental, social, economical and developmental objectives.

The main environmental objectives are achieving the maximum use of natural potentialities, achieving ecological balance, protecting national reserves, and protecting the environment from water and air pollution.

The fundamental social objectives are working to raise the social, economical and cultural standard of living of the inhabitants, decreasing migration to the major cities and attracting inhabitants to move to the new development areas.

The main economical objectives are protecting agricultural lands, encouraging horizontal extension of reclaimed lands, exploiting natural resources, encouraging private sector to invest in marketing Egyptian products, and decrease unemployment.

The main developmental objectives are erecting new urban communities in the desert, strengthening the connection axes between the existing urban areas and the new urban communities, determining priority urban development areas, facing the problem of squatter zones, emphasizing the relationship between the five year plans and the urban development plans, managing and controlling urban growth, and achieving the maximum return from archaeological, historical, and touristic potentialities.

REFERENCES

- Abouzeid, H., 2000
URBAN DEVELOPMENT IN THE NEW COMMUNITIES: AN
ECONOMICAL POINT OF VIEW, Proceedings of Al-Azhar
Engineering Sixth International Conference, September 1–4.
- Ali, A., 2000
THE ROLE OF THE ECONOMIC BASE IN THE URBAN
DEVELOPMENT OF NEW CITIES, Proceedings of Al-Azhar
Engineering Sixth International Conference, September 1–4.
- CAPMAS, 1966
CENTRAL AUTHORITY FOR PUBLIC MOBILIZATION AND
STATISTICS.
- CAPMAS, 1986
CENTRAL AUTHORITY FOR PUBLIC MOBILIZATION AND
STATISTICS.
- CAPMAS, 1996
CENTRAL AUTHORITY FOR PUBLIC MOBILIZATION AND
STATISTICS.
- Executive Organization for Cairo's Development Projects, 2000
THE RING ROAD AROUND GREATER CAIRO, Ministry of Housing,
Infrastructure and New Communities.
- GOPP, 1982
RING ROAD ACTION PLAN, Report Presented to the Ministry of
Housing and New Communities, General Organization for Physical
Planning.
- GOPP, 1992
THE RING ROAD AROUND THE GREATER CAIRO REGION,
Ministry of Housing and New Communities Press.
- GOPP, 1998
RECONSTRUCTION AND DEVELOPMENT MAP FOR EGYPT TILL
YEAR 2017, Ministry of Housing, Utilities and New Communities.
- GOPP, 2000
GREATER CAIRO ATLAS, Center for Greater Cairo Region, Ministry of
Housing, Utilities and Urban Communities.

Kamal, M., 2000

INSTITUTIONALIZING INVESTMENT IN HOUSING PROJECTS IN EGYPT, Proceedings of Al-Azhar Engineering Sixth International Conference, September 1–4.

Khairy, B., 2000

SQUATTERING IN THE NEW COMMUNITIES, Proceedings of Al-Azhar Engineering Sixth International Conference, September 1–4.

Sakr, H., 1997

THE RING ROAD: AN EVALUATION, Report Presented to the Ministry of New Communities, General Organization for Physical Planning.

Soliman, M. and Sharaf El Din, I., 2000

MANAGING AND CONTROLLING CAIRO'S URBAN GROWTH, Proceedings of Al-Azhar Engineering Sixth International Conference, September 1–4.