

# **Impact of Informal Urban Expansion On**

## **The Pyramids Area, Giza – Egypt**

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### **An Overview : The Urban Expansion Phenomenon in Egypt :**

Egypt covers a land area of over one million km<sup>2</sup>. As most developing countries, Egypt was affected by demographic explosion over the past four decades. Its population rose from 24 million in 1952 to approximately 76.5 million in 2006. CAPMAS projected the population of Egypt to 96 million at 2020, [CAPMAS, 1997]. The annual growth rate of population between 1996 and 2006 reached approximately 2.1 percent per annum. Egypt shifted from larger rural country with more than 90% of its population living in rural areas at the beginning of last century to an urban society with more than 45% of the population living in urban centres. This percentage is expected to reach 55% by the year 2020.

Urbanization in Egypt is also characterized by very high population densities. Most Egyptian cities suffer, over the past four decades, from the rapid urbanization/informal urban expansion caused mainly from the villages' migration to the cities specially the big ones like Cairo, Alexandria, Giza, as a result of the concentration of economic activities, services, and job opportunities in these cities.

This is particularly true in Cairo, the second densest city in the world after Bombay, where average density is 172.7 persons per hectare. As population is concentrated on a very small, and fertile, part of the country, it is inexorably eating up precious agricultural land. It is estimated that 9.5% of agricultural land have converted to urban land in 2000. The Greater Cairo Region, [GCR], is spatially distributed over three governorates: Cairo, Giza and Qaliubiah. Its jurisdiction contains the cities of Cairo, Giza, and Shubra El-Kheima, five small towns, ten villages and contiguous suburban and agricultural areas.

This paper aims to clarify the dangers and threats of informal urban expansion as well as various aspects of physical & economic development of Giza city, which is located only a few kilometers south of Cairo, and next to one of the most important heritage sites in Egypt and the World which is the Pyramids area. The growth of Giza city is uncontrolled and the informal settlements become very close to the monument area of the pyramids -our case study- causing environmental and visual pollution which affects the Pyramids area as well as the future of the tourism. The paper also discusses the role of the State in stopping the growth of informal settlements close to the Pyramids and in safeguarding them.

## **1- Reason for Selecting the Pyramids Area as a case study:**

### **- The Value of the Pyramids:**

The Pyramids of Giza is the only wonder of the Seven Wonders of the World that remains. They were erected on a rocky plateau on the west bank of the Nile River near Giza city, The site contains three pyramids, they are the Great Pyramid of Khufu, the pyramid of Khafre, the pyramid of Menkare, the Sphinx, the Solar Boat Museum, and many other mastaba (tombs) are located on the Plateau. The Plateau is a geographic feature that continues down to Memphis and Saqqara. The great pyramid is believed to have been built over a 20 year period. The site was first prepared, and blocks of stone were transported and placed. When it was built, the Great pyramid was 145.75 m (481 ft) high. Over the years, it lost 10 m (30 ft) off its top. It ranked as the tallest structure on Earth for more than 43 centuries, only to be surpassed in height in the nineteenth century AD.



Figure (1) : The site of the Giza Pyramids

The Giza plateau, is part of a zone of 50 square kilometers (20 square miles) that is protected by UNESCO, which stretches to the funerary complex at Saqqara, further south. The ancient ruins of the Memphis area, including the Pyramids of Giza, Saqqarah, Dahshur, Abu Ruwaysh, and Abu Sir, were collectively designated a World Heritage site in 1979. The site of the Giza pyramids is also the only site in Egypt for which a site management plan was put into effect. This took place in 1988. Carrying out the plan proved to be difficult due to the site's many existing problems. The major problems of the site are the growth of adjacent urban villages, the Egyptian visitors who throng to the site during the National Holidays, and the tourist carrying camels and horses which, at the present time, have uninhibited use of the site. There are other tourist associated problems, and conservation problems.

## **2- GOVERNMENT RESPONSES TO GREATER CAIRO EXPANSION**

### **2-1- Addressing Greater Cairo Expansion through Urban and Regional Planning.**

Cairo, the capital of Egypt, is located in a strategic location. In its present configuration, it comprises the city of Fustat, established in 640, and the city of Al

Qahira, established in 969, which gave its name to the present day metropolis, [El-Batran & Arandal, 1997]. As stated earlier, the Greater Cairo Region, [GCR], is spatially distributed over three governorates: Cairo, Giza and Qaliubiah. Through out the history, the GCR has exercised an unrivaled economic, political, and demographic supremacy over the rest of the country.

### Giza governorate limits inside G.C.R.

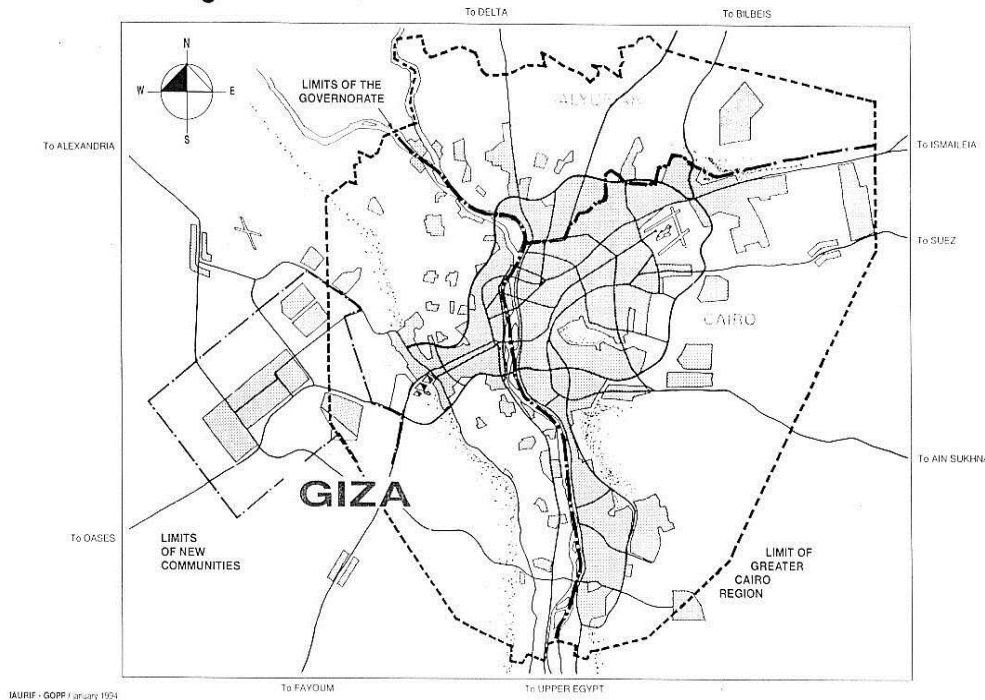


Figure (2) : Giza as a Part of the Greater Cairo Region (GCR).

**The first master plan for the Greater Cairo Region,[GCR], was completed in 1965.** It created industrial poles at Helwan [South of Cairo], Shubra Al-Kheima [North of Cairo], and Imbaba-Giza which received 50% of investment allocated for industry, under the first Five-year plan 1960-1965. However, these industrial zones further increased the attractiveness of Greater Cairo and led to a demographic growth surpassing estimates.

To address this problem and the growing seriousness of transport and water drainage problems a **second Master Plan for the Greater Cairo Region, [GCR], was issued in 1974.** The Master Plan was approved, to face current and future urban problems. It was based on two fundamental objectives:

- 1) controlling the growth of the existing agglomeration in order to end urban encroachment on agricultural land and keeping the agglomeration within manageable size; and a ring road to contain the GCR, and
- 2) Establishing self-sufficient new communities acting as relief poles to accommodate new migrants to the GCR.

Subsequently, the 1974 plan had to be updated to take into account the GCR-related recommendations of the National Urban Policy Study carried out in the early 1980s, [Cornu,1985], as well as the important socio-economic changes that occurred after 1974, because of the Open-Door Economic Policy that drastically changed public and private investment patterns, [Gorge, 1985].

By 1980, the formulation of new master plan became imperative because demographic growth had been under estimated and satellite cities were not ready to absorb the excess population. The objectives of the new master plan were to redefine the urban strategy, to make essential choices regarding investment in urban projects, and to progressively establish a permanent regional planning agency.

**The 1983 GCR Master Plan** aimed at increasing the production capacity of the economy through protection of agricultural areas, directing industrial locations, improving transport efficiency, maximizing the use of existing infrastructure, and protecting the archaeological and historical heritage. The Master Plan also aimed at improving the living environment through deconcentration of the Greater Cairo agglomeration by directing growth to new settlements into the desert, providing alternatives to informal areas, organizing the urban fabric to improve access to public services, rehabilitating old neighborhoods, protecting water resources, and controlling air pollution, [GOPP & IAURIF, 1983].

The new Master Plan in 1991 and 1997 integrates and modifies past policies and projects under implementation. It integrates national policies by recognizing Cairo and Alexandria as the two main urban regions of Egypt, and seeks to control and organize their development, while relying on them to promote national economic growth, [Saker, 1996].

Four development concepts underlie the past and current urban planning approach in Egypt as exemplified by the GCR.

**First**, the conceptualization of GCR as an Urban Region, a heterogeneous entity to be dealt with on an integrated regional basis. **Second**, the subdivision of GCR into Homogeneous Sectors, to restructure the agglomeration into 16 autonomous geographic entities. **Third**, The establishment of new settlements located on the periphery of the GCR ring road, offering an alternative to informal settlements, and taking advantage of existing employment in the GCR. **Fourth**, fostering connection between existing agglomeration and other existing and new economic centers and settlements by means of creating Development Corridors. In this respect, roads were established connecting GCR to new cities. Other roads were set to allow new developments on their sides and to direct development in specific way rather than having haphazard growth and development around GCR. These roads are the development corridors.

**Four such corridors now exist:**

1- The North –Eastern Corridor covering the area Al-Obour/Bilbeis (Cairo-Ismailia Roads).

- 2- The Eastern Corridor (Cairo- Ain Sokhna Roads).
- 3- The West corridor (Cairo –Elwahasat desert Road).
- 4- And the South corridor (Madi – Helwan road), [NUCA, 1993].

## **2-2- Giza within the context of Greater Cairo Region (GCR)**

Giza Governorate urban area reached the second range of Egypt's cities, right behind Cairo and just overtaking Alexandria since 1986. It is a very attractive area, especially inside the Greater Cairo Region. The master scheme and its application give new opportunities for Giza: new towns, new settlements, Ring Road, metro line no 2, project of a Regional Rapid Transit system (RRT). New stakes are appearing which need to be managed. Giza governorate extends mainly on the left bank of the Nile, on the delta and the desert, on about 36 000 km<sup>2</sup>; the population of Giza is over 1 million. The part, inside Greater Cairo limits, where the 1983 master scheme under application, corresponds to the present study.

This territory of Giza inside Greater Cairo Region can be divided **in three specific areas**, classified by the master scheme in homogeneous sectors:

- **The desert area**, where the new town of 6<sup>th</sup> of October and Sheikh Zayed are under construction: Homogeneous Sector n<sup>o</sup> 11, and n<sup>o</sup> 12 and 13 (archeological areas).
- **The urban area**, is composed of different districts: old ones like Giza or Dokki and new ones like Mohandeseen, which are planned, and unplanned ones like the informal areas (Boulaq El Dakrou, Mounira, etc...). It is the Homogeneous Sector n<sup>o</sup> 2 .
- **The rural area**, on both sides of the built-up area: North and South Giza plains. The villages inside these are highly increasing; they are under the direct influence of the town. These are: Homogeneous Sector n<sup>o</sup> 14, and n<sup>o</sup> 16. During the last three decades, the attract of Giza has increased, on the contrary that of Cairo has decreased.

Does this important trend signify that it is easier to find a dwelling in Giza than elsewhere in GCR? It is probably partly true. Are prices lower, land available? We may not find any explanation, but we will insist on the consequences as we can notice that the increase of Giza essentially takes place in the informal areas around the built up area, and around the villages of the northern and southern plains.

## Informal urban growth

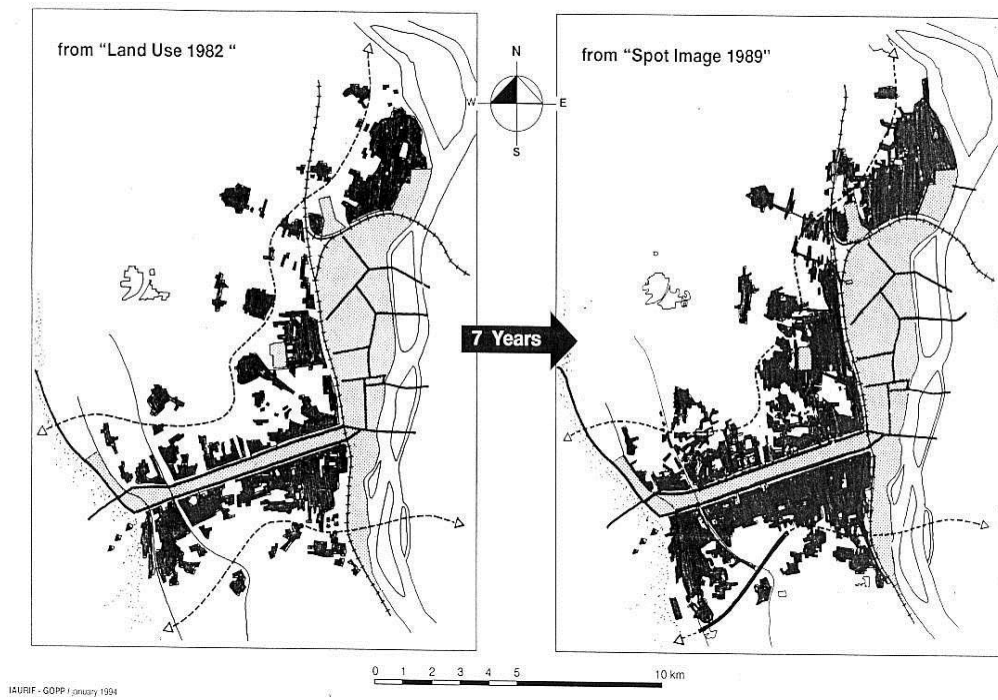


Figure (3) : Informal urban expansion near the Pyramids

- **Left Bank of the Nile :**

The left bank of the Nile is made up of three different zones:

- the built-up area and agricultural land,
  - the desert area,
  - Between both of them, the archeological area.
- The built-up area of Giza can be characterized by its recent very impressive increase. Its development in continuity can be compared to as “oil stain”, for the informal areas. The built-up area is increasing, through the detriment of agricultural area. The Nile banks are becoming more and more built up with skyscrapers. Its development in the planned areas consists of regularly increasing the height of constructions. Most villages, under the influence of the town, are quickly increasing.
- The agricultural land: all the inbuilt areas of the delta are under cultivation. The urban growth is expanding to their detriment (either town or villages). It becomes an emergency to improve inhabitants living condition inside informal area, to restrict new constructions and to deconcentrate the overcrowded areas. Some informal neighborhoods reach very high densities (till 1 500 inhabitants by ha on very large areas) and there is a general important lack of facilities.
- The desert area: a recent development on a very large area difficult for the desert developments to compete with the existing town. The area consists of:
- 6th of October city.
  - New settlements of Sheikh Zayed
  - Industrial areas along Alexandria desert road.
  - Land reclamation areas.
  - Recreation zone (proposed in the Master Scheme).

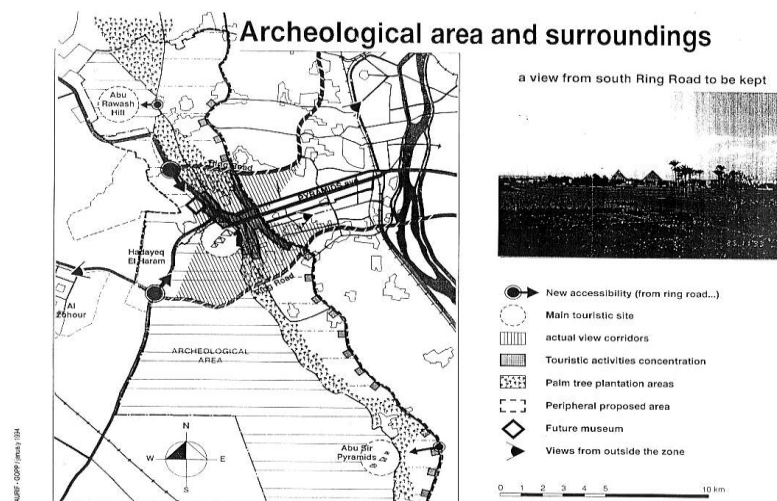


Figure (4) : The archeological area and surroundings

- The archeological area and surroundings as shown above in figure 4 : An already existing urbanization cutting. Giza has unique chance: the all over the world famous archeological area of the pyramids. This area is located close to the boundaries of the desert. It separates the desert development from the Delta and constitutes a natural urban cutting. We don't need to create it as on the eastern desert between the new settlements and the existing agglomeration (green belt).

The area includes:

- Abu Rawash hill
- Pyramids plateau (Giza , Abusir, Saqqara, Dahshur...)

Each one of the three zones needs a main special policy, which must be complementary to each other:

- Protection and enhancing for the archeological area.
- Upgrading and deconcentration for the built-up area with protection of arable land
- Promotion for the desert development

People need a house to live. If we want to avoid their settlement on the agricultural lands, an alternative has to be proposed elsewhere in the desert (New towns and new settlements). It must be attractive in term of cost, quality of life, job opportunities, transportation means and linkage with the existing town.

### left bank of Nile : 3 distinct areas

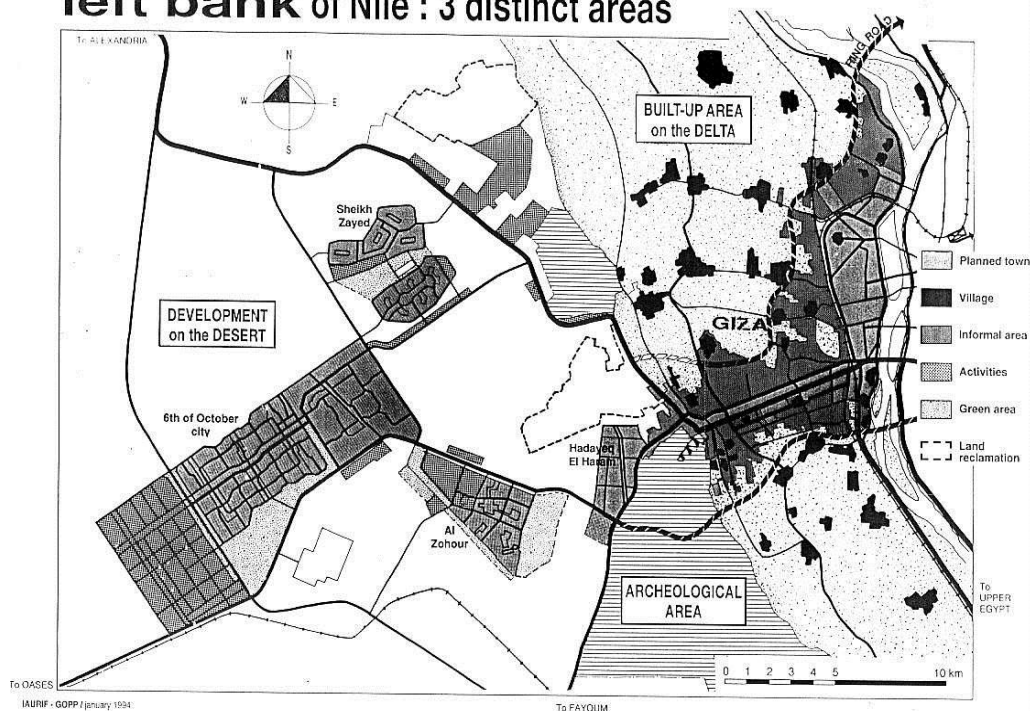


Figure (5) : The left bank of the Nile is made up of three different zones



### 3- THE PROBLEM OF THE PYRAMIDS PLATEAU: EGYPT'S PYRAMIDS FACE MULTIPLE THREATS.

#### 3-1- Great Pyramids of Giza are being encroached upon by housing development and ever-increasing swarms of tourists

The informal urban expansion has already reached the surroundings, and as it is a very valuable area, high buildings arise in some parts of the area. This is really worrying for many reasons:

1. It is completely different to see the Pyramids through palm trees and desert, than behind informal settlements, high building, water towers, electric distribution lines, garbage, etc...
2. the town extension (forbidden in principle) mainly located in informal areas is realized without any lay out;
3. the canals polluting, the garbage expanding;
4. **Because of the Ring Road impact:** the changes are very rapid, and with the Ring Road implementation and its by- pass along the Marioteyah canal, the worst is still possible if adequate planning measures are not undertaken.



Figure (6) : The informal urban expansion on the agricultural land at Giza Governorate

In 1995, however, this UNESCO World Heritage site was nearly cut in two when the Ministry of Housing proposed in 1994 the construction of a bridge near the Giza plateau, as the final phase of completion of the ring road to decongest the city of Cairo. The Ministry of Culture vehemently rejected the plan and warned of archaeological hazards. President of Egypt referred the question to UNESCO's World Heritage Committee.

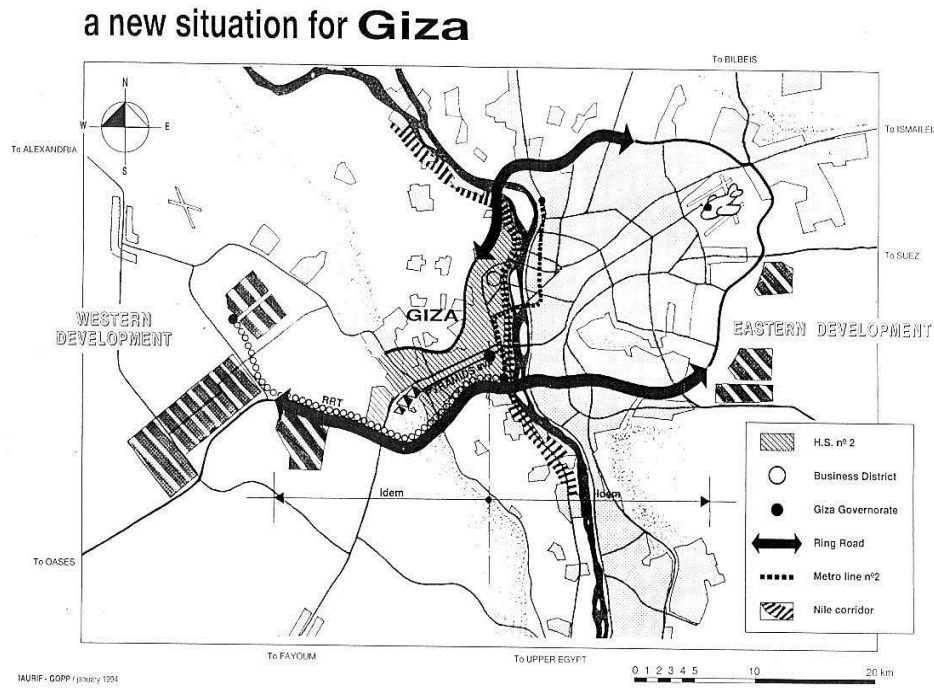


Figure (7): A new situation for Giza

The first UNESCO committee met first in 1995; then in 1998. Both meeting recommended a re-routing of the road to bypass the Mansuriya and Maryutiya irrigation canals, thereby avoiding the Giza necropolis altogether. The recommendations were not implemented.

**UNESCO threatened in 1998 to remove the pyramids from its World Heritage List if the project went ahead.** After a campaign led by UNESCO and helped by the media, Egyptian President Hosni Mubarak came down on the side of heritage. As a result, the eight-lane ring road had not been paved for the four kilometers that were supposed to cross the Giza Plateau, but the rubble is still there and the route has been handy for truck drivers who use it as a short cut, so the problem seems that the issue has not yet been completely resolved.

#### 4- PLANNING RECOMMENDATIONS :

- **A planning strategy**, in order to propose a land use regulation for the whole area (preservation of view corridors, palm trees plantation...).
- **A planning project**, in the close vicinity of the archeological areas (enhancement of the surrounding in order to discover the monuments through a better landscape).
- **A rehabilitation project**, to organize the existing agglomeration and specially inner archeological area, improve the monuments environment, extend the visit area.
- **The Ring Road project**, inside the area, should be treated with many precautions, in order to be as discreet as possible, and its views from the Pyramids could be set off.
- **The new town of Hadayeq El Haram (Pyramids Gardens)**, a huge tourist village, supposed to be cancelled, is still going on. Speculation has already started, with people selling again the land they just bought. A definitive decision must be taken, in order to cancel or strictly control the project.

#### **Hadayeq El Haram**

This very large Housing Estate (about 600 ha) already serviced for years (roads and public light) is in **absolute incoherence** with the main planning strategies of the Master Scheme.

- Taking advantage of its location, it is in direct competition with 6<sup>th</sup> of October city, Al Zohour and Sheikh Zayed. If it is implemented, the first consequence will signify a large delay for the development of these new towns where the government spent a lot of money.
- It is located in the vicinity of the Pyramids and will create an improper environment, and block up a view corridor for Al Zohour and 6<sup>th</sup> of October city towards the Pyramids.
- If it is not strictly controlled, it will encourage the continuity of the urban agglomeration which is not recommended in the Master Scheme.

In any case, it is absolutely necessary:

- 1- To avoid the competition with the new towns by drastically limiting its development to a very minimum.
- 2- To save view corridors to the Pyramids.
- 3- The Government must assert its fixity of purpose to enforce the law.

#### 5- THE ROLE OF THE STATE TO CONSERVATE THE GIZA PLATEAU.

**The strategy of the conservation of the Pyramids area called for the closing of one pyramid yearly. During this year repairs and conservation efforts are to be carried out. its closing spread round the world.** The strategy was concerned with the overall access to the site and the movement of visitors and vehicles.

**A plan was prepared in co-operation with UNESCO** to implement improvements in visitor management and facilities while preserving the monuments. The main points to be effected were the following:

1. A ring road around the Giza Plateau will carry all traffic. Inside the site, electrically powered (and non-polluting) transportation will be provided for those who need it.
2. Two educational centers has established to provide educational archaeological information and tourist facilities.
3. Horse and camel stables will be transferred south of the plateau.
4. A picnic and recreation area will be established south of the monuments.
5. A conservation laboratory will be built.
6. Archaeological ruins should remain ruins.
7. Architects designing new buildings should not compete with ancient architecture.

**A 10-15 year program of maintenance and research was adapted. It includes:**

1. Staff training to provide adequately knowledgeable personnel to administer the site, to provide up-to-date conservation whenever necessary and to continue the clearing and research programs which will enhance the site for visitors and scholars.
2. Re-excavation and clearing, especially in the cemeteries of the nobles to the east and west of the Great Pyramid.
2. A program of photogram metric planning of all the pyramids as an aid to assessing their stability and conservation needs.
4. Mapping and excavation of the area south and west of the Third Pyramid where tumbled debris from the pyramid has never been cleared.

This needs skilled photogram metric planning before removing fallen blocks which may be covering long-sought-after evidence of building ramps and construction methods.

**GCR Updated Development Plan 1991 & 1997:** If implementing all these recommendations will preserve the environment around the pyramids and the sphinx. However, a major problem treating this famous archeological site is the encroaching urban informal settlements which observe the beauty of area and constitutes real usual pollution. El Haram districts, including the archeological site has the highest percentage of informal settlements in the whole of Giza. The government must take drastic action to resolve this issue. The Pyramids area is a very important world heritage site , and the heritage is our legacy from the past, what we live with today and what we pass on to future. World heritage sites belong to all the peoples of the world. So, we must protect our heritage, our culture, our history from all the threats and dangers around it.

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