

BUILDCON 97  
The International Conference for the Construction Industry  
October 11-12, 1997

---

**THE DYNAMIC ROLE OF THE BUILDING  
INDUSTRY IN THE DEVELOPMENT OF EGYPT'S  
NEW COMMUNITIES**

by

**Abou Zeid Rageh, MS, PHD  
Integrated Consultation Company  
Egypt**

# EGYPT'S NEW COMMUNITIES

by  
Dr. Abou Zeid Rageh

## I

### Population

Much has been said on population increases in Egypt. I would like here to point particularly to two facts. Firstly the population of Egypt has been increasing at an accelerated rate. It took almost one hundred years for the population to be doubled; from 5 million in 1800 to 10 million in 1900. Each successive doubling of population took much less time than before, almost half the time of its previous one. After 25 years, in 1975 it became 40 million, then soared up to 55 million in 1990. In other words, in less than two hundred years, the population has increased 11 times, from 5 million in 1800 to 55 million in 1990.

The rate of annual increase varies from 2.3 to 2.8. Needless to say that increases in urban population has run at a higher rate: 4% annually mainly because of the continuous shift of the demographic structure of population from rural to urban, particularly during the last few decades.

Secondly, the increase in population was not coupled with an equivalent rate of economic growth. In cases of Western societies, increases in population went in parallel and hand in hand with social and economic development during the first industrial revolution in the nineteenth century and the first part of the twentieth century. With the second industrial revolution, in the twenties of this century, population became almost stable and reached what is called demographic equilibrium. Population growth in the West was organically and functionally linked with economic development and advancements in industry, technology and organizational capabilities.

This was not the case in Egypt. Economic growth was no match to population growth. Economy lags far behind increases in population. In my opinion, this could be the number one problem facing Egypt at the present and in the near future. Demographers believe Egypt will reach her demographic equilibrium around the year 2030. At that time, the population will reach 120 million, almost double the present population.

Thirdly, as we all know, the majority of Egyptians live in a valley of limited area. It represents only 4% of the total area of the country, the rest in Sinai Peninsula, Eastern Desert and Western Desert which is very thinly populated. Pockets of small population are scattered in various oases and in small settlements along the coast.

Both the Valley in the South and the Delta in the North are very much over-populated. Probably our population density is one of the highest in the world. We have lost a large portion of agricultural land—more than one million acres out of six million—to urban and rural growth, formal and informal.

## II

### Egypt's National and Regional Master Plan

Moving out from the present limited and heavily populated area in the Valley and the Delta to new corridors of development in the deserts and along the coasts will be the destiny of Egypt in the twenty first century. "New Horizons" and "New Frontiers" are most needed goals for many Egyptian generations to come.

The present inhabited area in a narrow fertile valley flanked on both sides by vast arid deserts. The Valley extends from South to North in a linear form with gentle curves. At Cairo, it spreads widely in a fan like shape forming the Nile Delta. Because of the linearity of the Valley, internal human movement was always one dimensional: from South to North. External human movement, in form of migration or outside invasion took the opposite perpendicular direction: East-West.

From the dawn of history until now, river agriculture has formed the life pattern of the Egyptians socially and economically. Human settlements were evolved in two classical forms: villages and towns. The former for farming production and the later for marketing and administration. Each kept its own style in planning and architecture. In the last few decades the two came closer to one another. Villages have been urbanized as towns have been ruralized. Overlapping of activities has changed their traditional character and identity.

The Nile Valley divides Egypt into two almost equal parts. The mountainous East desert and Sinai on one side and the almost flat Western Desert on the other side. The Eastern Desert is rich in minerals and mining while the Western Desert has considerable potential for agriculture and industry. Both the Northern Coast on the Mediterranean and Eastern Coast on the Red Sea, have great tourist attractions. In simple terms, Egypt's geography is formed of three great parallel stretches; the Eastern Desert in the East, the Western Desert in the West, with the Nile Valley and the Delta in the Middle.

Before any national master plan could be materialized, resources and potentials of each geographical region should be studied. The regional study will include the following:

- Natural resources including raw materials, mining, water and energy
- Local climate, environment, topography and possible use of wind and heat in generating energy and use of rain and underground water reservoirs for agriculture
- Defining corridors of development based on possible natural resources to sustain human settlements
- Infrastructure including transportation on international, national and local levels
- Life pattern suitable for existing natural resources, human potential and appropriate technology to be used in industry and agriculture.

- Planning system, building materials and architectural character of human settlements including their sizes, their functional and operational relationship.

A recent preliminary study has revealed that possible regions for development outside the existing valley are:

- \* Red Sea Coast Region for tourist activities
- \* Eastern Desert Region for mining and industry
- \* New Valley in the Western Desert, from Toshky in the South to Sewa in the north passing through all the oases in that region. This corridor - sometimes called the Great Green Western Belt - has considerable potentials in agriculture, mining and industry
- \* Sinai and Suez Canal Region for mining, industry, agriculture and tourism
- \* Northern Coast Region on the Mediterranean Sea for tourism and agriculture
- \* Nasser Lake Region in the South for agriculture, fishing and tourism

Because of their differences in ecology and resources, each of these proposed regions will have its own particular development system, planning pattern and architectural character. We generally overlook this fact and tend to copy planning concepts and architectural forms from the old valley and plant them in new communities of totally different environment.

Preparing a National Master Plan requires in the first place combined effort of all concerned agencies, governmental, private and academic. National plans, on sectorial level of transportation, irrigation, land reclamation, energy and tourism are now available. They are not yet together in a single master plan. The Ministry of Planning and General Organization for Urban Planning could be a possible coordinator for such a plan.

New communities should be an integral part of a National Plan. They could not be thought of separate from national strategy and policy. Their location, size and economic base must fit in a total picture of national development.

### III

#### Egypt's Program of New Communities

The General Organization of New Urban Communities was established by Law No. 59, 1979 to be the official body responsible for choosing sites, building and administrating new communities in accordance with national planning and strategies. In 1981, the responsibility of this Organization was to extend to cover the entire desert areas outside the existing city limits except those areas allocated for national security and land reclamation projects. Seven new cities, representing the first generation, soon started: Tenth of Ramadan, Sadat, Sixth of October, Borg El-Arab, Fifteenth of May, New Damietta and New Salhya. The following is a brief account of each of these cities.

##### Tenth of Ramadan

Located on Cairo-Ismailia desert road, 55 Km from Cairo and 30 Km east of the Delta

- Target population 500,000 inhabitants
- Total city built area about 93 Km<sup>2</sup>
- Land uses are distributed as follows

|             |                      |                         |
|-------------|----------------------|-------------------------|
| Residential | 20.4 Km <sup>2</sup> | 22% of total built area |
|-------------|----------------------|-------------------------|

|                         |          |                           |
|-------------------------|----------|---------------------------|
| Commercial and services | 14 Km2   | 15% of total built area   |
| Industrial              | 23 Km2   | 25.2% of total built area |
| Tourism                 | 1.9 Km2  | 2% of total built area    |
| Green areas             | 13.5 Km2 | 14.5% of total built area |
| Roads                   | 19.8 Km2 | 21.3% of total built area |

- Gross population density 35 persons per acre
- Economic base: Industry
- Construction Status on June 1997
  - No. of existing factories 785
  - No. of factories under construction 316
  - No. of existing housing units 26812
  - No. of housing units under construction 6653
  - No. of existing population 120,000
  - No. of labors in industry and services 110467

#### Sadat City

Located on Cairo-Alexandria desert road, 93 Km north of Cairo and 37 Km west of the Delta

- Target population 500,000 inhabitants
- Total city built area about 63.43 Km2
- Land uses are distributed as follows
 

|                         |           |                          |
|-------------------------|-----------|--------------------------|
| Residential             | 12.58 Km2 | 19% of total built area  |
| Commercial and services | 13.61 Km2 | 21% of total built area  |
| Industrial              | 18.46 Km2 | 28% of total built area  |
| Tourism                 | 1.4 Km2   | 2.3% of total built area |
| Green areas             | 3.75 Km2  | 5.7% of total built area |
| Roads                   | 15.6 Km2  | 24 % of total built area |

- Gross population density 27.5 persons per acre
- Economic base: Industry
- Construction Status on June 1997
  - No. of existing factories 137
  - No. of factories under construction 109
  - No. of existing housing units 1954
  - No. of housing units under construction 2808
  - No. of existing population 40,000
  - No. of labors in industry and services 10,816

#### Sixth of October City

Located in Giza Area, West of Greater Cairo and 38 Km from city center. The city is close to Cairo-Alexandria road and Cairo-Fayoum road,

- Target population 500,000 inhabitants
- Total city built area about 153.2 Km2
- Land uses are distributed as follows
 

|                         |          |                           |
|-------------------------|----------|---------------------------|
| Residential             | 11.4 Km2 | 7.4% of total built area  |
| Commercial and services | 36.7 Km2 | 24% of total built area   |
| Industrial              | 18.4 Km2 | 12% of total built area   |
| Tourism                 | 52.3 Km2 | 34.2% of total built area |
| Green areas             | 12.2 Km2 | 12% of total built area   |
| Roads                   | 22.2 Km2 | 14.5% of total built area |

- Gross population density 24 persons per acre

- Economic base: Industry
- Construction Status on June 1997
  - No. of existing factories 529
  - No. of factories under construction 323
  - No. of existing housing units 20640
  - No. of housing units under construction 10752
  - No. of existing population 140,000
  - No. of labors in industry and services 57,184

#### Borg El-Arab

Located 60 Km west of Alexandria and 7 Km south of the Mediterranean Sea

-Target population 510,000 inhabitants

-Total city built area about 63.2 Km<sup>2</sup>

-Land uses are distributed as follows

|                         |                      |                          |
|-------------------------|----------------------|--------------------------|
| Residential             | 14.5 Km <sup>2</sup> | 7.4% of total built area |
| Commercial and services | 5.7 Km <sup>2</sup>  | 24% of total built area  |
| Industrial              | 17 Km <sup>2</sup>   | 12% of total built area  |
| Tourism                 | .5 Km <sup>2</sup>   | 1% of total built area   |
| Green areas             | 10 Km <sup>2</sup>   | 15% of total built area  |
| Roads                   | 15.5 Km <sup>2</sup> | 25% of total built area  |

-Gross population density 34 persons per acre

-Economic base: Industry and commerce

Construction Status on June 1997

- No. of existing factories 279
- No. of factories under construction 118
- No. of existing housing units 7165
- No. of housing units under construction 1512
- No. of existing population 75,000
- No. of labors in industry and services 17,632

#### Fifteenth of May City

Located 35 Km south of Cairo and southeast of Helwan

-Target population 250,000 inhabitants

-Total city built area about 12.8 Km<sup>2</sup>

-Land uses are distributed as follows

|                         |                     |                         |
|-------------------------|---------------------|-------------------------|
| Residential             | 1.5 Km <sup>2</sup> | 12% of total built area |
| Commercial and services | 2 Km <sup>2</sup>   | 15% of total built area |
| Green areas             | 5.8 Km <sup>2</sup> | 45% of total built area |
| Roads                   | 3.5 Km <sup>2</sup> | 27% of total built area |

-Gross population density 82 persons per acre

-Economic base: Industry and commerce

-Construction Status on June 1997

- No. of existing housing units 25,036
- No. of housing units under construction 3242
- No. of existing population 180,000
- No. of labors in industry and services 27,177

#### New Damietta City

Located on the Mediterranean coast, 4.5 Km west of Damietta

-Target population 270,000 inhabitants

-Total city built area about 27.3 Km<sup>2</sup>

-Land uses are distributed as follows

|                         |                     |                           |
|-------------------------|---------------------|---------------------------|
| Residential             | 6.5 Km <sup>2</sup> | 24 % of total built area  |
| Commercial and services | 2.1 Km <sup>2</sup> | 7.8% of total built area  |
| Industrial              | 2.3 Km <sup>2</sup> | 8.6% of total built area  |
| Tourism                 | 3 Km <sup>2</sup>   | 10.3% of total built area |
| Green areas             | 6.4 Km <sup>2</sup> | 24% of total built area   |
| Roads                   | 7 Km <sup>2</sup>   | 25.3% of total built area |

-Gross population density 42 persons per acre

-Construction Status on June 1997

No. of existing factories 91

No. of factories under construction 79

No. of existing housing units 7954

No. of housing units under construction 2660

No. of existing population 50,000

No. of labors in industry and services 3396

### New Salhya City

Located 100 Km from Cairo, 65 Km from Zagazig, 6 Km north of Ismailia Canal on Kassasin road

-Target population 50,000 inhabitants

-Total city built area about 4.31 Km<sup>2</sup>

-Land uses are distributed as follows

|                         |                       |                            |
|-------------------------|-----------------------|----------------------------|
| Residential             | .97 Km <sup>2</sup>   | 22.6 % of total built area |
| Commercial and services | .43 Km <sup>2</sup>   | 10% of total built area    |
| Industrial              | .92 Km <sup>2</sup>   | 21.4% of total built area  |
| Green areas             | .82 Km <sup>2</sup>   | 19% of total built area    |
| Roads                   | 1.163 Km <sup>2</sup> | 27% of total built area    |

-Construction Status on June 1996

No. of existing factories 22

No. of factories under construction 30

No. of existing housing units 3474

No. of housing units under construction 503

After the first generation of new cities were initiated and went under construction, the Organization of New Communities started planning and building the second generation: El-Obour, Badr, New Ben-Suef, New Minya, El-Shorouk and El Sheikh Zayed. The following is a brief account of each of these new cities.

### El-Obour City

Located 30 Km north-east of Cairo. The site is fringed by Cairo-Bilbis road to the east and Cairo-Ismailia road to the south.

-Target population 500,000 inhabitants

-Total city built area 50 Km<sup>2</sup>

-Land uses are distributed as follows:

|                         |                      |                            |
|-------------------------|----------------------|----------------------------|
| Residential             | 19.4 Km <sup>2</sup> | 38.6 % of total built area |
| Commercial and services | 3.5 Km <sup>2</sup>  | 7% of total built area     |

|                              |                       |                         |
|------------------------------|-----------------------|-------------------------|
| Industrial                   | 7.3 Km <sup>2</sup>   | 14% of total built area |
| Recreational and open spaces | 20.16 Km <sup>2</sup> | 40% of total built area |

### Badr City

Located on Cairo-Suez desert road, 47 Km from Cairo

- Target population 332,000 inhabitants
- Total city built area 23.9 Km<sup>2</sup>

### New Beni-Suef City

Located across the Nile east of Ben-Suef and connected with the mother city with a bridge

- Target population 90,000 inhabitants
- Total city built area 22 Km<sup>2</sup>

### New Minya City

Located across the Nile east of Minya and connected with the mother city with a bridge

- Target population 120,000 inhabitants

### El-Shorouk City

Located 37 Km from Cairo on Cairo Ismailia desert road

- Target population 250,000 inhabitants
- Total city built area 18.9 Km<sup>2</sup>

### El Sheikh Zayed City

Located 38 Km from the center of Cairo on Cairo-Alexandria road

- Target population 430,000 inhabitants
- Total city built area 13.18 Km<sup>2</sup>

## IV

### Evaluating New Communities Program

#### Location of New Towns

Sites of new towns were chosen close to inhabited areas and on main highways. Tenth of Ramadan is located midway between Cairo and Ismailia and east of the Delta, while Sadat City is on the other side of the Delta and on a highway connecting Cairo and Alexandria. Sixth of October City is close to both Cairo-Alexandria road and Cairo El-Fayoum road. New Beni-Suef and New Menya were built on the opposite side of the Nile with bridges connecting them to the old towns.

The proximity of new towns to old communities has two major advantages. First, they are connected to a national network of highways and thus they have direct and easy access to other inhabited regions and also to major seaports and airports. Second, the old communities can give back-up services and manpower in the early phases of the new towns. At later phases, new towns could become independent and self-supporting. Gradual expansion of development from existing inhabited areas to new adjacent frontiers was the strategy behind the locations of new towns. This policy proved to be much more economical than building new settlements in far away locations where labor and services are not easily available.



### Size of New Towns

Target population of the first generation of new towns is quite large. Tenth of Ramadan City, Sadat City, Sixth of October City and New Borg El-Arab will have each 500,000 inhabitants as target population when they are completed. New cities of the second generation such as Badr and El-Shorouk will have each 330,000 as their target population. Each of the first group will be equal in size to capitals of existing governorates, as Tanta, Demenhour, Zagazig and Asyout. New Towns of the second group will be equal to medium Egyptian towns, as El-Mehalla and Menouf.

It is clear that the program of New Settlements is directed towards building larger new cities. Some planners question the validity of that policy. Large new towns require heavy investment in infrastructure networks, housing and services especially at the first stages of construction. It takes a long time and considerable effort and investments before these towns reach the take-off point and become self-sustained. Smaller communities would be much easier to plan, build, maintain, and run. Also, rate of development could be much faster in smaller communities than in the larger ones. In other countries as England and France, new towns' never exceeded 250,000 resident.

### Existing Population in New Towns

Most of the new cities suffer from low occupancy rate. Number of city residents falls far behind initial program. Only 24% of the expected number of residents live now in New Damietta 18%. Only 31% of the existing housing units are occupied and the rest are vacant. Considerable volume of housing stock as well as existing infrastructure and services are left unused in our new communities.

A recent study has shown that only 8% of the labor force in a new town live in that town and the rest stay in their original cities and villages. They commute every day by public transportation or by private buses between their home and work. Because of their low wages, 40% of them hold second jobs back in their home towns and villages. The majority cannot afford either to buy or to rent a housing unit near their work in the new communities. The study has also shown that the reason behind the people's reluctance to move to new towns are as follows:

- Only some basic services are provided but general and central services such as health centers, specialized hospitals, colleges, technical schools, shopping malls, sports clubs and entertainment facilities are lacking.
- High cost of housing, domestic supplies and high cost of living in general
- Poor local transportation system
- Inefficiency of governmental and social services. Also inefficiency of municipal services as electricity, potable water and garbage collecting.

### Industry in New Towns

Industry by far has bypassed the original program. Numerous factories came into operation, while the number of laborers employed and total annual industrial production have exceeded expectations.

In the first generation of New Towns, 1828 factories have been built. Their total invested capital equaled L.E. 11.6 billion, their annual production L.E.18.8 billion and number of labor employed reached 188,725. 990 new factories are now under construction and they will create 64,852 new jobs.

The new towns have a wide variety of industries. They can be arranged in terms of production volume as follows:

- Pharmacology and chemical industry 27%
- Garment and textile industry 22%
- Building materials industry 15%
- Food Industry 8%
- Wood Industry 5%
- Others 3%

New Towns' industry is generally capital intensive and not labor intensive. The average number of workers per factory is 77.2 and the average monthly wage is L.E. 240.77

### **New Towns Administration**

New Towns are run by official bodies appointed by the Minister of Housing and New Communities. The general administrative and financial laws and regulations are applied to the new communities. In such system, development of new towns is tied up to governmental bureaucracy. With centralized control, townships lack freedom of action. Decision making and implementation of policies generally take longer than they ought to. New systems of more dynamic administration must be thought of. New Towns should have more space to run their own affairs. They should have their own resources and put forth their priorities. Local communities should participate in their own local government. In such systems, it is advisable to have a marketing agency in each town with full information on potentialities and investment possibilities of the area.

### **Financing structure of New Towns**

In building infrastructure, housing and social services such as schools and hospitals, new towns depend heavily on banking loans, 87.4% of the invested capital comes from loans and only 12.6 % from their own resources. Through the years, loans and their interests have mounted up and the Organization of New Communities is now facing difficulties in paying its debts. The whole financing system has to be reconstructed. The Government's role should be reduced and private enterprises and developers' role has to be maximized. New Towns have to be less dependent on government and become self supporting.

## V

### **Future of New Towns**

Based on the previous survey, we can conclude the following:

- 1- Egypt has an ambitious program of building new towns probably for a hundred years to come.
- 2- A national and regional master plan should be prepared. New communities must be located according to this master plan.
- 3- Size, planning pattern and architecture character of new communities should be based on ecological and environmental characteristics, and natural and human resources available in the region

- 4- New city government systems should be applied to allow more decentralization, self reliance and dynamism in administration.
- 5- Private developers and not the government should take the lead in developing new communities