

MATERIALS AND METHODS

New Urban Communities Authority

For creation of new cities, New Urban Communities Authority had been established by virtue of Law 59/1979 to serve as the responsible body for creating, administering, selecting sites, and preparing master and detailed plans of new cities. A development and construction map had been prepared for Egypt covering till 2017 including assignment of 24 new cities reflecting new urban communities aiming to absorb 12 million people which are 50% of the expected annual increase till 2017 (Newcities, 2015).

Local Governance (Gehaz el-Madina)

There are, in every city of new towns an administrative unit called (Gehaz el-madina) has the following tasks: 1) the planning and implementation of projects to ensure development of the city, in line with the objectives of the National Development. 2) The supervision of the provision of facilities and infrastructure for industrial zones and residential districts in the city. 3) The management of the budget devoted to development activities in the city.

New Towns and Communities Policies

The new towns and new community's policies reflect the general urban policy of the present Egyptian government; their goal is to favor the development of urbanization in the desert rather than on agricultural lands. One of the objectives of this policy is to act as an alternative to spontaneous urbanization by attracting the population that would have otherwise settled in informal settlements. The new towns policy aimed at providing low cost housing for the segments of the population that could not afford to live in the urban centers of Cairo and Alexandria. New towns were also to play an instrumental role in the industrialization policy of the country as most of the new industrial activity was to be located in the new communities (Arandel & El Batran, 1997).

Definition of New Towns and Communities

It is difficult to develop a common definition of the new city, this is due to the difference of the objectives for which it was created, but generally it is possible to know the new city as "new urban communities have a small community privileged location with a strong economic base and viable and stability" (Hammad 2008).

Difference between New Towns and New Communities

The main difference between new towns and new communities is that the former aim at spatial redistribution at the regional or national levels, and the latter aim at redirecting urban growth within Greater Cairo. New towns can be divided in two categories: independent new towns and satellite new towns. The former are meant to be self-sufficient communities whereas the latter are located in the proximity of large urban centers and are only partially autonomous. New communities serve only to provide housing is fully integrated into the Greater Cairo

Region (Arandel & El Batran, 1997).

Types of New Towns and Communities

New towns in Egypt are divided in terms of locations and functions into three types: satellite, twin and independent cities as follows (Presidency, 1994): 1) Satellite cities: This type of cities is located around and close to Cairo. The short and middle term objective of constructing those cities is to overcome the population density in Cairo, use available basic services and labor in attracting residents, activities, creating job opportunities and economic factors that are linked to the mother city. Satellite cities include 15th of May, 6th of October, Bader, and Al Obour which are developed without an economic base and instead they totally depend on Cairo. In this context, they are both a burden and an urban plus to the mother cities. 2) Twin cities: It is an urban expansion into desert lands situated close to the existing urban cities. In some cases, they are just a natural extension to the existing cities. Examples of this type include: New Damietta, New Beni Suef, New Minia, New Asuit, New Akhmim, and New Aswan. Unlike satellite cities, twin cities have their own economic and service base but they are still closely linked to the existing cities. 3) Independent cities: This type of cities is characterized with relative capacity and standalone economic base. On the long term, the objective is to create economic growth poles comprising independent economic entities. In such case, cities become qualified to group socioeconomic activities around a certain point to make optimal benefit from the clustering advantages. They are located far from the existing cities sufficient to support its independent position with some of them penetrating into the desert farther from the valley. Examples include: 10th of Ramadan, Sadat, New Borgel Arab and Salheya cities (Essam Al-Din, 2003). Table 1 indicates to the new towns and communities in Egypt.

Classification of new towns and Communities

Twenty two new towns have been built in Egypt since 1979 under the direction of the central government. This new urban settlements have been classified according construction date into the three generations as follow (Newcities, 2015): 1) First generation that started implement from fifth plan 1978-82. Seven new settlements are namely; 10th Ramadan, Sadat, 15th May, 6th October, Bourg Al-Arab, New Salhaia, and New Domyatt. 2) Second generation consist of five new city which have implemented with fifth plan 1987-88. This group of new city is El-Obur, Badr, New Noubariya, New beni Suef, New Menia and Al-Shak Zaied. 3) Third generation include four new city which begin to implement from fifth plan 1992-93. This group of new towns is al-Shourok, New Cairo, new Assyut, and Tebaa.

RESULTS AND DISCUSSION

The New Towns and Communities Achievements

As a result of Cairo's plan (1974), Cairo structural plan (1982), and National Urban Policy, It was found that the new communities policy (even as satellites or self-sustained) is the best solution which accommodate a major part of the expected

Table 1: Egyptian new towns (Source: Newcities, 2015)

No.	City	Decree No.	construction	Region	Governorate	Type	Area Feddan	Current Pop. (2014)	Expected Pop.	Employee (000)	Expected year	economic base	location /Road	1 st Generation from 1977 until 1982 (7 Cities)		2nd Generation from 1982 until 2000 (8 Cities)		3rd Generation from 2000 until now (7 Cities)		Proposed Cities	total	
														1	2	1	2	1	2			
1	10th of Ramadan	249	1977	Suez Canal	El Sharkia	Independent	94800	420000	2000000	165	2032	Industry / Services	Cairo / Ismailia									
2	15th of May	119	1978	Greater Cairo	Cairo	dependent	12311	200000	500000	0		Services	Cairo / Helwan									
3	Sadat	123	1978	Delta	Menoufia	Independent	119000	140000	1000000	165		Agriculture / Industry / Services	Cairo / Alexandria									
4	6th of October	504	1979	Greater Cairo	Giza	dependent	119200	915000	5500000	125		Industry / Services	Cairo / Alexandria									
5	Borg El Arab	506	1979	Alexandria	Alexandria	Independent	47403	150000	750000	151		Industry / Services	Alexandria / Matrouh									
6	New Damietta	546	1979	Delta	Damietta	dependent	6500	130000	350000	75	2022	port/ Industry / Services	Damietta / Ras El Bar									
7	New Salheyia	1237	1982	Suez Canal	Ismailia	Independent	1600	38000	80000	18.1	2022	Agriculture / Industry / Services	El Kasasen / Port Said									
1	Badr	235	1982	Greater Cairo	Cairo	dependent	18545	100000	450000	75		Services / Industry / tourist / entertainment	Cairo / Suez									
2	El Obour	1290	1982	Greater Cairo	Cairo	dependent	32400	300000	600000	53.6	2017	Industry / Services	Cairo / Bahis									
3	New Menia	278	1982	North Upper Egypt	Minya	Twin	24639	40000	157000	43.9	2050	Services / Industry / tourist / entertainment	Cairo / Aswan									
4	New Nohereya	375	1982	Alexandria	Alexandria	dependent	1816	22000	80000	10		Agriculture / Industry / Services	Cairo / Alexandria									
5	New Ben soueif	643	1982	North Upper Egypt	Beni soueif	Twin	37900	54000	268000	35		Services / Industry / tourist / entertainment	Cairo / Aswan									
6	Shekht Zayed	325	1995	Greater Cairo	Giza	dependent	159000	159000	675000	0		Services / tourist / entertainment	Cairo / Alexandria									
7	El Sherouk	326	1995	Greater Cairo	Cairo	dependent	11900	155000	500000	0	2017	Services / entertainment	Cairo / Ismailia									
8	New Cairo	191	2000	Greater Cairo	Cairo	dependent	70000	102000	6000000	0		Services / Industry / tourist / entertainment	Cairo / Suez									
1	New Aswan	366	2000	South Upper Egypt		Twin	18490	0	70000	0	2017	Services / tourist / entertainment	Cairo / Aswan									
2	New Fayoum	193	2000	North Upper Egypt		Twin	13502	0	130000	0		Agriculture / Services	Cairo / Assiut									
3	New Assiut	194	2000	Assiut	Assiut	Twin	32700	17000	200000	15		Services / tourist / entertainment	Cairo / Sohag									
4	New Eldkhim	195	2000	South Upper Egypt	Sohag	Twin	34868	0	0	0		Services / tourist / entertainment	Cairo / Aswan									
5	New Sohag	196	2000	South Upper Egypt	Sohag	Twin	30800	0	81000	0	2050	Services / Industry / tourist / entertainment	Cairo / Sohag									
6	New Kena	197	2000	South Upper Egypt	Kena	Twin	24200	0	130000	0		Services / Industry / tourist / entertainment	Cairo / Aswan									
7	New Tiba	198	2000	South Upper Egypt	Lxor	Twin	9495	15000	195000	0		Services / Industry / Agriculture	Cairo / Aswan									
1	New Toshka	199	2000	South Upper Egypt	Aswan	dependent	10000	0	80000	0		Services / Industry / Agriculture	Aswan / Abu Simbel									
2	East El Oweyinat		2000	Assiut	New Valley	dependent	1073	0	45000	0												
3	New Lxor	55	2010	South Upper Egypt	Lxor	Twin	8976	0	200000	0												
4	East Port Said		2010	Suez Canal	Suez	Independent	29815	0	0	0		Services / Industry / tourist / entertainment	Cairo / Aswan									
5	New El Ahann		2010	Alexandria	Matrouh	dependent	0	0	0	0												
6	New Kahla		2010	Suez Canal	North Sinai	dependent	0	0	0	0												
7	New Ismailia		2010	Suez Canal	Ismailia	dependent	0	0	0	0												
							970853	2957000	20041000	933.6												

population of Greater Cairo region and halts the conversion of agricultural lands for urban uses. To confirm this policy a ministerial decree no. 59/1979 initiated the formation of a supreme committee for new communities in order to encourage the construction of new communities in desert lands and redistribute population. Therefore, since 1978 the total lands which were added to the urban cities in Egypt were about 613 square km. (nearly about 4.4% of total built up areas in Egypt). Until July 1989. The new urban community's organization was put a new map for Egypt at 1998. This map aims to build 44 new urban cities to 2017. It was determined to build a zone with area about 2.5 million acres. These new cities were joined with other existing cities with transport network. Fig. 1 shows the location of new urban communities to the year 2017. In spite of passing more than 20 years at beginning of the project of building new cities, so the most of those cities not achieve the aims of attracting the increased population on existing cities and create poles of growth and central economical in desert regions to limit the construction on agriculture lands and presaging the agriculture land. So it faced many several problems since it built even in management or implementing its plans. The most important problem is budget which is mainly supported from central government as a main resource for funds (Khairy et al., 2004).

Example of New towns and Communities

6th October: Designated in 1979, 6th October is located in the desert, 32 km south-west of Cairo on the Alexandria-Cairo highway. Construction began in 1981 for a target population of 500,000. Owing to high demand for land, the Master Plan was later extended (MHUUC, 1996) and the new, ambitious, plan aims at a population of 1 million by 2020. Current population is estimated at between 100,000 and 200,000 (Aboul-Atta, 1999). 6th October was intended to relieve pressure from Cairo and to offer opportunities to young people, especially in high-technology industry. Despite success in attracting industrial branch plants, including multinational companies, 6th October has yet to attract the population needed for it to develop into a convincing town.

Borg El Arab: Borg El Arab is one of the self-sufficient new towns in Egypt. Construction was initiated in 1979. Location of the new town is consistent with the following goals: constructing new urban settlements in the desert, relieving congestion and overpopulation in urban settlements along the River Nile's banks and its delta. It was planned in Alexandria's region as a growth, development and relief pole to stop the sprawl of the region's major city Alexandria on rural land around it, providing land for housing and investment to face scarcity of land in Alexandria city, Offering better quality of live for the residents of the region and its city stained with fast growing slums. Borg El Arab was planned to house 500.000 by 2004. In 2006, population reached 150.000 residents. The town is expected to house 570.000 persons by 2022. The town planning included residential areas, industrial areas, educational facilities (universities) and infrastructure and

services. It offers employment not only for its residents, but also for workers living in the Alexandria region. The economy of the new town mainly depends on industries. Although Borg El Arab achieved economic success, most of the workers in the new town live in and daily commute from Alexandria and other urban settlements in the region (Ahmad , 2015).

El Sheikh Zayed City: It is one of the new settlements adjacent to the boundary of greater Cairo, established in 1995. The city is located out of the ring road west of Cairo to accommodate the increase in population of greater Cairo and to control the informal expansion on agricultural land. The city is physically attached to 6th of October City in a distinguished area, due to its vicinity to the pyramids plateau, and its site is 226 m above the sea level. The location of the city is 38km from the center of Cairo, accessible from both Cairo-Alexandria and Cairo-Fayoum regional desert roads. The city is planned to reach a target population of 675,000 inhabitants (GOPP). According to the 2006 census, the population of the city was 29,422 (Newcities, 2015).

Sadat City: it was the second of the two pioneering Egyptian New towns. Its Master Plan studies were completed in (1976-1977). An autonomous city, located in Northwest of the capital, almost mid-way between Cairo and Alexandria. The location is accessible to almost one third of Egypt's population, being within an hour drive from Cairo, Alexandria, and the Nile Delta. Its target population was one million and to reach: 60000 person in the first 5 years, 150000 in 10 years and 500000 in 25 years. Planned with a mixed economic base combining; the various levels of industry, agriculture, construction, and services (local and regional) - to provide job opportunities for almost all its labor force (some 165,000 jobs. The city's inhabitants were thought to be attracted from the neighboring densely and overpopulated governorates of the Nile (Abdel-Kader & Ettouney, 2009).

Al Obour City: Al Obour lies along Km 9-15 of the Cairo – Bilbis Road. It occupies a total area 132.3 million m². Upon completion in 2017, the city's expected population will be 600,000 inhabitants. Its total area is 23,400 feddans. The city is divided into districts including all housing categories (economy – medium – above medium – luxury), and the residential area of the city occupies c.22.26 million m². There are over 92,000 units under construction, 30,000 of which are under the auspices of the New Urban Communities Authority (NUCA) with a total investment of EGP 1.09 billion. Total investments in Al-Obour City are valued at greater than EGP 1.4 billion.

Al Shorouk City: Al Shorouk is a second generation city. It lies along Km 37 on the Cairo – Ismailia road with a wide extension reaching the Cairo – Suez Road. It occupies a total area of 50 million m². Upon completion, the expected population will be 500,000 inhabitants. Its total residential area is 34.02 million m², divided into districts including all housing categories (economy – medium – above medium – luxury). Fully 57,000 housing units have been completed of which 27,000 were completed by NUCA at different levels with a total investment of EGP 893 million.

Shortcomings of New Towns and Communities

The limited success and Shortcomings of new cities and communities, in securing planned objectives and meeting development programs, could be attributed to an array of factors and reasons that lead to the deviations and shortcomings, including (Abdel-Kader & Ettouney, 2009); 1) Management deficiencies and casual decision-making; lacking objectivity and reason. 2) Poor monitoring, lack of proper documentation and continuous evaluation. 3) Centralization; i.e. imbalance between central government (the Ministry and affiliated bodies) and new communities' authorities. 4) Inappropriate allocation, distribution and provision policies of development urban land for housing, community facilities and industry. 5) Abandoning approved planning strategies and development rationales. 6) Un-coordinated development and clashes of priorities. 7) Inappropriate housing policies and strategies.

Issues and Gaps in New Towns and Communities

New communities represent an invaluable asset and a promising potential, they deserve attention and a prominent place as magnets and focal points in the national and regional development strategies in the coming decades. Till such national and regional rationales are formulated, five key Action Plans Studies should be undertaken by top specialists in the realms of: urban planning, management, housing, infrastructure and related areas - under the auspices of the related central and local institutions and authorities - to address and cover the following crucial issues: 1) New communities management and financing (beyond construction and towards autonomy). 2) Targets' reassessment, in terms of: size, population, development phases, etc. 3) Land and assets allocation policy, to avoid using new communities as mere treasury revenue sources. 4) Socio-economic groups mix, current status and future: demographic structure-current and prospective. 5) Harmful formal developments – in the vicinity of new communities (along regional access routes and the designated areas). Issues and Gaps can be present in another form as following: Lack of coordination between urban, services and industrial, No clear division of roles and responsibilities within and between the relevant institutions, Building regulations contributes in weakening the visual image of the city and there development, Lack of basic services in many cities and Adequate and relevant training programs for internal capacity building (Attia, 2013).

Challenges of Encouragement of the Settlement and Population Attracting

New towns and communities are facing more challenges specially regards to "Encouragement of the settlement and population attracting" some of them like: (new cities' targeted size is Large, failure to implement the original plan, housing Problem, slow population growth, unemployed capacities in the housing area, burnt energies); The new cities' strategy adopted an approach towards creating large sized cities which in turn placed a huge burden on the State to provide sources

for funding infrastructure, services, and housing projects, which according to Stewart (1996) require a long time until it secures full settlement elements and achieve their objective (Mahmoud,1996). The new cities had not been constructed based on a comprehensive planning addressing the interrelation between new cities, inter traffic courses on one hand and traffic courses with Cairo on the other as well as the possibility for the new cities to contribute into solving urban problems of the existing cities. In this context, the new cities' policy had been adopted without conducting analytical studies to its socio – economic, environmental and administrative aspects. (National specialized Councils 1993). Major changes affected the master plans of new cities creating several activities and usages outside the plans for the interest of groups who influence the decision making. As a result, the proposed growth trend had changed in some cities such as the case in the 6th of October, Sadat and New Minia cities whereby some of the agricultural reform areas designated to agricultural associations turned to residential areas due to insufficient water sources such as in Borg el A`rab city (National Specialized Councils 1993). The provision of affordable housing units is one of the major problems that has been facing all sequential Egyptian governments since the mid of the twentieth century. This long period of dealing with this problem resulted in a huge deficit in the housing units needed for low-income groups. This deficit is estimated at about 3.5 million housing units (Abu Zaid & Rageh, 2007). This deficit is primarily caused by a steadily growing gap between demand and supply of housing units for lower income groups. The problem is further escalated by rapidly deteriorating housing stock, high rates of population growth, regional imbalance, urbanization explosion, low productivity, deficient housing and construction industry, inappropriate formal housing policies and inadequate housing and development legislations (Abdel-Kader & Ettouney, 2012). The overall achievement image of new cities confirms that population growth is lagging behind. In this context, it failed to attain the targeted population. In the first phase of creating new cities – ten years – percentage of permanent residents stopped at 19.6% of the target. As such, total residents in 10 of Ramadan, 6th of October, 15 of May, Sadat, and new Borg el A`rab came to 162 thousand whereas the target was 825 thousand. The ratio of resident population to the target in the first phase differs from one new city to another. For example, it reached 100% in 15th of May, but only 7% in Sadat, 35% in Borg el A`rab, and 20% in the 10th of Ramadan and 6th of October. The accelerated growth rate of the 15th of May city is attributed to its adjacent location to a major industrial center in Helwan, whereby it became an attraction to huge labor, relative cheap prices of housing, in addition to many facilities provided to the residents compared to other places (National Specialized Councils 1993). Lack of sufficient attraction elements, the industrial activity serves as main activity of the new cities except for the 6th of October which includes as well tourism activity. Specialized studies criticized activities of the industrial sector which lacks a settlement plan for industrial projects or setting up an economic base aiming to

provide job opportunities and multiplying the regional income. Studies criticized as well the high capital intensified projects which are concurrently of low labor intensity (Nagwa, 2007). Unemployed capacities in the housing area, percentage of population attraction failed to attain the targeted numbers as more than 40% of the housing units were reported vacant in 1996. Several reasons stand behind this failing trend including: high rent, inadequate payment installment, in addition to the vacancy and non-use of more than 25% of the commercial areas because of difficulty to perform commercial and public services as efficiently as needed (Cairo demographic center, 2003). Burnt energies: Burnt energies are reflected in two main elements, human being and machine. People, who reside in the new cities, especially 6th of October and 15th of May, are obliged to commute for their work. Most of the labors working in the industrial projects operating in the new cities come from other places. Therefore, movement rates of the means of transportation increase concurrently with the rise in commuters' rates causing an excessive energy consumption, and burden on traffic especially in rush hours. The problems of means of transportation is among the main problems hindering population movement to the new cities because public transportation only runs buses which are not sufficiently available in regular schedules forcing most of the residents to own private cars if they wish to move to those cities (Essam Al-Din, 2003).

CONCLUSION

The research concluded a number of findings and recommendation which can lead the Egyptian New towns to be more effective and to achieving the target "Encouragement of the settlement and population attracting in new Towns and communities". Key actions and remedies to address the said problems are arguably to include (some or all of) the following: Level 1: National, regional and urban policies and strategies; Regional studies should be held to profoundly investigate the Reciprocal influences between big cities and new towns. Unless there are changes in national, regional and urban policies, the growth of urban areas will not make its maximum possible contribution to social wellbeing. A regional pattern of urban growth offers a framework for a national pattern of cities to be conceived, new growth centers can be identified and potentially important regions can be stimulated. At present new town development does not seem to be an important part of the future development policies. There will be new development but mostly in connection with existing towns. The idea of solving urban problems by building new towns on a large scale is probably an idea that is valid under special comprehensive planning process model. In the absence of continuing development control, dispersal development must arise. No matter how generous the space allowed in the layout, central constriction inevitably emerges if expansion is unlimited. The mechanism of growth of town expansion must be over-simplified. But urban development policies for dealing with urban growth have been misdirected by the lack

of general understanding of the inter-connection between population growth and outward spread development. Respect to completed and approved Master Planning strategies and related studies; changes should follow rational evaluation and in-depth investigations. The construction of new urban settlements around Cairo and big cities in Egypt must be restricted to the form of self-contained cities or towns.

Level 2: Urban management; there is nothing more harmful to national urbanization strategies than shifting objectives and erratic implementation because they often lead to major irreversible decisions. Autonomous/independent new cities development organization and management; i.e. treating the new cities as a comprehensive civil development, and not merely as grand-scale physical construction and execution projects. It is very important to keep the inner cities in Egypt under observation, research and evaluation to manage their situation in order not to reach the result of. Encouraging the decentralization concept through directing the population growth out of the grand cities by creating new nuclei of settlements.

Level 3: Physical accessibility (Road network and Transportation); it is very important for Egypt to start a national project for upgrading, maintenance and construction of road networks connecting new towns and other cities. The provision of affordable organized on regular bases Public transportation is the key to attract residents to new towns. Using public finance to provide Infrastructure in Egypt's case is the only way for it to be affordable to middle and low income groups. To create a more integrated urban network, these new towns are incorporated in a series of development corridors. These aim to promote transportation linkages and to funnel growth away from Cairo. Serious regional and national coordination of development rationales and strategies; to avoid fragmentation and clashes. Treating new communities as an integrated network. Discouraging, freezing, and relocating fringe and "casual" developments, in the vicinity of planned new communities and related regional roads and access "axes". Level 4: As Abdel-Kader & Ettouney mentioned; Economic & employment; the new town must be a self-sufficient community as soon as possible, and it must be prepared a plan for a rapid population growth in the early development phrases. It is important to rehabilitate and educate residents of squatter settlements to get a job that offer a payment which allows affording normal standard housing instead of having to live in inhuman situation in slums. New communities planning needs the power of intervention in land and property markets, and the coordination of public investment programs, if the qualitative aspects of life are to be kept in balance with market forces. In terms of strategic planning, the evidence suggests that the continuing trend towards dispersal of people and jobs from the contributions should be planned, having equal regard to social, environmental and economic goals, and the need for a balance between population and jobs, rather than being allowed to happen in a haphazard way. Revitalization of the mixed economic bases of new communities, including

agriculture and services besides industry.

Level 5: Housing & Services; To create truly self-contained cities, as measured by a balance between jobs and housing, variety of different jobs and housing, provision of housing and supporting services at the same time and place, the rapid creation of urban centers, and concern for recreational facilities and environmental protection. In new developments, priority should always be given to the "majority", the "masses", the "needy", the "urban poor", and to "lower income groups" – representing 50% - 60% of the target population in all the original (documented, assessed and endorsed) studies for Egypt's new communities. "Settlers" attraction is a prime target and a key action in new communities' development. It can be achieved through the integration of the trio: appropriate housing supply, attractive and efficient community facilities, and rewarding job opportunities. Careful considerations should be given to land allocation policies. Quick returns to maximize profits and open urban-land auctions should be resisted and avoided. Land allocation should primarily target residents and prospective settlers. Readdressing the target sizes and population of the new communities - small may still be viable and more efficient.

Recommendations

Here are some of practices and strategies, which can help to solve new towns issues and promote their future development and also for Encouragement of the settlement and population attracting to new towns as following:

New towns planning projects should not consider the new town as an entity. Regional economic, environmental, and social studies and plans should be part of the project in order to effectively build connections and interrelationships between existing cities, new towns, rural areas and raw material locations.

Priority for employment in the new towns economic base should be given to new town's residents to encourage people to move and live in new towns.

New towns planning should include employment plans and targets. Two jobs for each family should be provided (average of two jobs for four persons).

Establishing agencies for organizing events in Egyptian new towns (sports, art, conferences, etc.) can help attract people to them and make them living towns, attracts investments, and generate employment opportunities in the service sector.

Upgrading the existing streets networks in Egyptian new towns as cycling street networks will help provide affordable, sustainable and healthy solution for transportation problem inside Egyptian new towns.

As Ahamd mentioned; one of the fatal mistakes the Egyptian government makes is the installation of infrastructure in hazardous slums areas. This encourages the evolution of more slums. Priority of provision of infrastructure, services and urban development funds should be given to new towns to encourage residents of deteriorated areas inside the congested cities in Egypt to move to new towns. Another practice, which can be immediate and very advantageous for both new towns

and big cities, is programs of hazardous slum areas clearance from big cities and relocation to middle and economic class housing in new towns. This should be accompanied by social and cultural rehabilitation programs for slum dwellers, employment, economic and renting plans. This strategy will result in upgrading living standards for slum dwellers.

New towns plans should include the immediate construction of roads and railroad networks on regional and national scales. This is to connect new towns, cities, markets, raw material sites, ports and industrial areas. This enhances economic and urban interrelations. The research recommends the immediate implementation of sustainable public transportation projects in new towns in Egypt. This will improve living condition and help develop healthy urban environments.

A sustainable urban plan is suggested for implementation in Egypt. This will give the new town a privilege, which suffers from an unhealthy and full of conflicts urban environment. Some practices such as: cycling plan and planning a cycling marathon in the new town, plan for amelioration and intensification of trees and green areas all over the new town.

Active societies should be encouraged in Egyptian new towns. NGOs and associations of new town residents can help in improvement, management and maintenance of the new town. They will also keep municipalities updated with the needs of the new town, monitor the fulfillment of these needs and help in urban improvements by their efforts or by funding. NGOs and associations of residents will enhance social life and activities and reinforce social bonds in Egyptian new towns.

As Ahamad mentioned; the future plans and designs for new towns in Egypt should be unique and innovative to attract residents. In existing new towns, a local art project can be carried out for the amelioration of facades using folk art and graffiti to transform the unattractive facades in them into unique murals. These arts have been always famous and common in many regions in Egypt.

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