Sustainability in new Waterfront Cities (New Mansoura City - Egypt)

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Abstract:

Countries of the world tend to establish new coastal urban communities that are located on a waterway, where coastal urban areas represent 20% of the total surface of the earth and a large number of people live in the major cities located in coasts and this is based on the requirements, activities and jobs that the city needs and this is done according to a sustainable reference to preserve renewable resources, save energy and implement sustainable plans, and with the distinction of Egypt with natural water resources and its great potentials that make it compete with other countries of the world in this direction, the Egyptian state has tended to establish a group of new cities, especially cities with waterfront, but the trend towards the establishment of a large number of cities at the same time - more than 14 new cities - needs a clear methodology that guarantees the sustainability of cities. The aim of the research is to study the waterfront in Egypt, especially the cities on the Egyptian coast, and focus on a set of strategies that may support and enhance sustainability in new cities, especially the new city of Mansoura, as it is among the new cities that belong to the fourth generation cities that the Egyptian state began to establish since more than 4 years through a study of some points which are based on the principles and policies of sustainable planning for cities with a waterfront, such as land usage, taking advantage of the waterfront components, providing housing opportunities, as well as corridors and places for walking, and establishing communities that help preserve nature and preserve open spaces as well as orientation towards sustainable development and revitalization of the façade of the water supply, the provision of various means of transportation, and the adoption of economically feasible and implementable development decisions, as well as cooperation between civil society and decision-makers, and ensuring the benefit from the waterfront for all, and then any other coastal city in Egypt.

Research problem

During the past few decades, a number of cities have been established, including cities with a waterfront such as New Damietta, Sharm El Sheikh, Dahab and others, and the Egyptian state, 4 years ago, established another group of new cities that exceeded 14 new cities, which are called fourth-generation smart cities, and the research problem lies in the presence of a number of risks and challenges that may undermine the sustainability of cities, which push us to find new cities that have ways of living with a sustainable reference in which the principles and policies of sustainable planning are applied.

DOI: 10.21608/MJAF.2021.72405.2324

Research importance

Coastal urban areas represent 20% of the total surface of the earth and a large percentage of people live on them in the major cities located in them, as they have ports and economic activities such as shipping, transportation, tourism, fishing and aquaculture are one of the main activities that depend on the presence of water and are a point of attraction for the population.

The Egyptian coasts are characterized by a great diversity in their natural characteristics, and the waterfront cities in Egypt enjoy attractive possibilities for tourism and entertainment due to the diversity of the environment and nature in it, and we find that these natural constituents are one of the basic components of other countries that depend on them to create economic development in them. Development of its coasts and waterfront through distinct projects compatible with the nature of the place with sustainable reference.

Research aim:

The research aims to study sustainability strategies and their applications for cities with the Egyptian waterfront in general, and to take the new city of Mansoura as a case study as a new city to identify procedures and policies that help in implementing the city's sustainability strategies that can be generalized to the rest of the new cities and future cities, in an attempt to understand those globally used standards.

The research presents a set of elements that help in implementing sustainability for waterfront cities and provides a set of recommendations for further improvement of closely related urban areas, as these elements are considered as one of the initiatives that can be used to develop public policies that achieve sustainability for the new Egyptian waterfront cities.

Research methodology:

Analytical approach with a set of strategies that ensure sustainability for the new city of Mansoura, based on 10 basic points that were developed by the US Environmental Protection Agency to create new communities based on previous experiences of successful societies. These points were used to identify deficiencies. Some policies that help create a vision that can be used during the establishment of new gatherings.

The inductive approach, using various sources such as maps and information, and reviewing previous studies, researches, reports and organizational principles. The research tends to study the current development strategies of Egypt 2030 and deal with waterfront cities, especially New Mansoura, and the possibility of submitting proposals that help in growth and sustainability.

The research examines the most important challenges facing sustainability in waterfront cities and the policies that should be used.

Land uses and the different uses of water

Take advantage of the water front

Providing housing opportunities to meet the needs of permanent and temporary residents

Providing walkways and places for walking with easy access and visibility to the waterfront

Establishing societies that help preserve the heritage and nature of the waterfront

Preserving open areas and environmental areas on the waterfront.

Moving towards sustainable development and revitalizing the waterfront.

Providing various means of land and water transport.

Implementable and economically feasible development decisions.
Cooperation between civil society and decision-makers, and ensuring access to the waterfront for all.

Strengths that promote sustainability:

At the level of waterfront areas:

The existence of plans and strategies based on scientific studies for the development of the Egyptian coasts that propose development projects such as the East Port Said region, in which the City of Peace is being implemented, as well as the Delta region, in which the New Mansoura City and the Alexandria region are implemented, in which the New Alamein City and the New Rashid City are implemented, as well as the areas with the waterfront. In Egypt, it is characterized by the existence of a desert hinterland suitable for development, the presence of some cities in each region as a center of development, and the ability to absorb new numbers of residents and provide them with job opportunities to establish new ports and beaches.

At the level of waterfront cities:

The infrastructure of waterfront cities is available in terms of roads, electricity, and water networks equipped to accommodate new numbers and provide job opportunities to achieve sustainability. The role of waterfront cities in Egypt is determined by the resources available to them, as the Egyptian coastal resources vary between agriculture, tourism, mining and industry. There are examples of cities. With the same waterfront, which achieved economic success such as Alexandria, Damietta, Port Said and other cities, it achieved less success as it relied on tourism only, such as Hurghada, Marsa Matrouh and El-Arish, despite their many resources.
Adopting plans for new waterfront cities to be integrated and to be implemented in stages, which is called the fourth generation cities such as New Labor, New East Port Said, New Mansoura and New Rashid.

Weaknesses restricting sustainability:

At the level of waterfront areas:

Despite the existence of a group of proposed projects for the development of regions, in which implementation started more than 5 years ago, and partial openings were scheduled for them during the previous two years, but this has not been done due to several reasons, including:
The spread of the Corona “Covid” 19 viruses in the beginning of 2020, which led to slow implementation and stopping the movement of life not only in Egypt, but also at the global level, and delayed delivery of projects within the specified period.
The new approved plans did not give a unified impression towards the region and the most important activities that will be practiced except for housing, which is the main feature of newest projects, and this may be due to the existence of the housing problem and slums in Egypt.

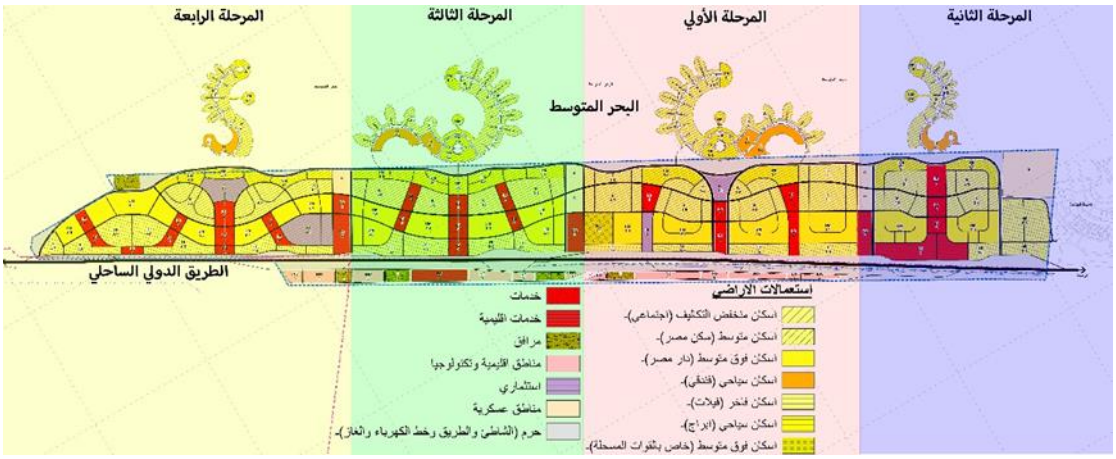
At the level of waterfront cities:

The lack of safe water for drinking and agriculture in some areas is considered a hindrance to development, especially in the desert areas, for example, North and South Sinai, as well as southern Alexandria and Matrouh. Some investors are setting up tourist villages that target

societal segments without taking into account the conditions related to the region and thus not taking advantage of investments in coastal villages, there is insufficient publicity for new cities and their global marketing, such as Sharm El Sheikh, Hurghada and finally El Gouna, which depend on tourism, conferences and celebrations.

New Mansoura City:

The new city of Mansoura is located on the Mediterranean Sea with a length of 15 km, in the center of the city the governorates of Dakahlia, Kafr El Sheikh and Damietta, Republican Decree No. 378 of 2017 with an area of 5104 acres was issued, and then Republican Decree No. (8) for the year 2018 was issued to increase the area to make the total area of the city 7100 acres. The foundation stone for it was laid in 2017, the new city of Mansoura is being implemented in four phases (Figure 3), where the area of the first phase of the new city of Mansoura is about 2063 acres, the city can accommodate about seven hundred thousand people, and the city contains all necessary services and facilities that could provide comfort for its residents as it includes: a logistical and service area, a regional university, a private university affiliated with Mansoura University, scientific research centers, a medical city, technology industries zones, a 56-meter wide cornice, and a group of public beaches, as well as sanitation networks for drinking water.



The General Strategic Plan for the New Mansoura City, New Urban Communities Authority 2018

Conclusion:

After studying the principles and policies of sustainable planning for cities with waterfront and analyzing them in the case study of the new city of Mansoura and analyzing the strategic plan for the city 2018 and field visits on the ground, the study concludes with a set of points that are expected to enhance the chances of achieving sustainability in the city, which are as follows:

- The general plan for the new city of Mansoura, taking into account the various land uses.

Adopting a plan to allow the construction of taller towers to make the most of the waterfront.

There is a diversity of housing patterns between permanent and temporary residents.

Creating opportunities for future generations to lead a decent life with a culture derived from the nature of the place and the buildings surrounding them.

- Preserving the existence of open green areas in the city, taking into account the dynamic movement of the waterfront, maintaining the elevation of the waterfront level above sea level, and preserving the nature and shape of the beach.

- The presence of open areas for the work of distinctive historical works and landmarks on the waterfront.

The presence of a road network consisting of streets, lanes, and places for walking and cycling.

- Reliance on a strategic plan with a future vision for development in the new city of Mansoura.
- The presence of a strong infrastructure that depends on sustainable plans through its ability to absorb the expected growth and increase the ability to deal with potential threats and risks by having a sewage network, nutrition, electricity and supply Internet services.

Helping the construction sector to revive during the past four years and providing job opportunities.

Recommendations:

The study recommends a set of recommendations directed to the Urban Communities Authority, the Ministry of Housing, decision-makers and researchers in this field, as follows:

- The integration of entertainment elements that depend on the use of sea water, such as dancing fountains and water elements.
- Relying on the multiple uses of the Cornice and defining areas for youth employment, such as mobile kiosks across the waterfront.
- Using smart methods to make use of rain water for irrigation of green areas.
- Conducting contests for the design of distinctive signs and monuments in various fields and on the waterfront.
- Creating water barriers after studying the rise in sea level during the year and following up the phenomenon of tides.
- Encouraging the establishment of events, cultural activities and community participation on the Cornice.
- Study the possibility of adding some distinctive elements along the waterfront, through which they express the history of Dakahlia Governorate and the surrounding area.
- Conceptualizing the division of the waterfront into areas of a heritage and history.
- Addressing the competent authorities to expedite the completion of the work of developing the efficiency of the international coastal road to facilitate access to the new city of Mansoura.
- Enhancing water transport and linking it to land transport and pedestrian paths by linking water transport to land transport (trains, buses ...), encouraging water taxis and ensuring that transportation options meet the movement of goods, as well as the population, by ensuring efficient transportation.
- The use of open smart buses and vehicles that provide city tours with a sound system that tells their components.
- Completion of preparing maps, GIS programs, and access systems.
- Connecting fourth generation cities with the rest of the cities through communication and traffic systems and with the Urban Governance Project.
- Defining general goals first - not short-term financial goals for the private sector - and considering coastal areas as a public asset by nature on which development plans are drawn up.
- Planning for the benefit of the community by including it in coastal areas and integrating work with the private sector and controlling it.

The research dealt with a set of elements to promote the concept of sustainable planning for the new city of Mansoura that can be relied upon in many upcoming researches, and there is a need

for more future researches that deal with climate change and its impact on sustainable development as well as integrating sustainable development principles into city planning, protecting public health and revitalizing frontier, Hydroponic societies, and find ways to balance the different uses.

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