



Sustainability constrains of Social Housing Projects in Egypt

معوقات استدامة مشروعات الإسكان الاجتماعي في مصر

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KEYWORDS:

Sustainability, Social housing, Affordable, Housing.

المخلص العربي: تواجه مصر مثل العديد من الدول النامية كثيرا من المعوقات ببنيا واقتصاديا واجتماعيا، كما تواجه اثر الزيادة السكانية وما يترتب عليه من ضرورة توفير مسكن امن وملام لمحدودي الدخل بما يوفر بيئة من العدالة الاجتماعية. وتعد مشكلة نقص مشروعات الإسكان المدعومة في المناطق الحضرية واحدة من المشاكل الأساسية بالبلدان المتقدمة والنامية على حد سواء. لذا يجب علي مصر تبني حلول مستدامة للحد من الأثر السلبي للنمو السكاني على البيئة والتمتع في الاستهلاك المتزايد للموارد الطبيعية، وتعدي البيئة المبنية والحضرية علي الرقعة الزراعية. لذا يهدف البحث إلى: دراسة إمكانية الاعتماد على تطبيق مشاريع الإسكان الاجتماعي المستدامة في مصر لمواجهة التحديات المستقبلية قصيرة الأجل، حيث يمكن الاعتماد عليها كنواة لمجتمعات عمرانية جديدة تواجه التحديات البيئية والاقتصادية والاجتماعية على حد سواء. لذا تم اختيار مجموعة من مشروعات الإسكان المدعومة والتي تمثل المحاور الثلاثة لمشروع الإسكان القومي (2005-2012) وهي: "مساكن عثمان (اسكان المواطنين الأولى بالرعاية)، وقرى الخريجين بالبرلس (البيت الريفي)، ومدينة الهرم (مبادرة القطاع الخاص)" وذلك بهدف دراسة إمكانياتهم ومشكلاتهم ومدى تحقيقها لأهداف البرنامج. وذلك للوصول إلي المعوقات والفرص والإمكانات التي يجب علي مصر أن تناقشها على نطاق واسع لاتخاذ الإجراءات الأنسب خلال تنفيذ مشروع الإسكان الاجتماعي الحالي (مشروع المليون وحدة).

Abstract— Egypt -as many developing countries- is facing environmental, economic and social constrains. Also facing the negative impact of population growth. And the need to Provide safe and adequate housing for low income people to create an environment of social justice. Lack of affordable housing is recognized as one of the fundamental problems in urban areas in developed and developing countries alike. Egypt should adapt sustainable solutions to curb population growth and its negative impact on the environment such as the increasing demands made on natural resources, man-made and urban expansion over agricultural land. The Main Objective of this paper is to: examine the potential of adopting sustainable social housing projects in Egypt to overcome the country's short-term future

challenges. Where we could rely on as a nucleus for the new urban communities facing environmental, economic and social challenges. The research select affordable housing projects which present the three Axis of the national housing project (2005-2012) which are: "Othman Housing (first care housing), Graduate Villages in Burullus (rural housing) and Harm city (private sector initiative)" to study their issues and how they achieved the program objectives. To identify Constrains, opportunities and potentials that Egypt should widely discuss to determine the most appropriate during the construction of the current social housing project (The million units project).

I. INTRODUCTION

SOCIAL housing projects is a type of affordable housing. A key function of social housing is to provide habitat that is affordable to people with low-income. And to keep social housing affordable, rent increases should be controlled by law (1).

Why social housing? Ambitious societies have the aim that all families and households should have the possibility to live in appropriate dwellings at reasonable and secured conditions. Satisfying housing conditions for all creates social freedom and welfare. Promoting affordable housing is of great

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importance for the poor part of the population and is a main social responsibility of the society (2).

Development should move from the traditional administrative approach to adaptive planning along lines of socio-economic development programs (3). Egypt is in need to design an overall national sustainable development strategy that can encompass all of the current local strategies and those to continue to evolve. It is argued that the most challenging urban issues for Egyptian future are; "housing, saving the environment, water shortage, renewable energy applications, climate change, and solid waste management" (4).

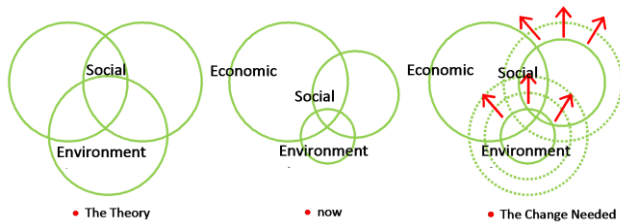


Fig. 1. The three pillars of sustainable development, from left to right: theory, current situation and changes needed to better balance the model (4)

It is frequently noted that Egypt should curb population growth and its negative impact on the environment, as well as better control the increasing demands made on natural resources. The first target of this goal is attributed to the natural environmental resources or the ecological system (land, air, water and biological diversity) while the second is related to the environmental related services or the man-made environment (drinking water and sanitation) beside the issues related to the urban environment (housing quality)(4).

The ongoing increase of housing prices as well as cost of living has produced a huge gap between local residents, creating socio-economic segregation and disparities among classes. These disparities have promoted the fragmentation of the urban space, producing the displacement of some residents from the city's central areas to the outskirts of the urban fabric which has limited their opportunities (5).

The paper aims to benefit from the advanced Experience of other countries in social housing to examine how to develop sustainable concept of social housing strategies in Egypt. Also some Egyptian projects were selected as they represent a starting point as social housing in Egypt but they faced some degree of failure due to many reasons which will be mentioned, aiming to avoid this failure again in the future social housing projects should follow some sustainability guidelines during planning process, construction and management (6).

Hence, the research discusses a three-phase approach for problem: first, to convert the preconceived image of governmental housing as "housing for the poor and low income people" into the concept of social housing; second, to take into consideration socio-economical dimensions when designing housing projects, and finally to benefit from public private participation to promote sustainable social housing in Egypt. The paper tries to examine the potential of adopting

sustainable social housing projects in Egypt to overcome the country's short-term future challenges.

II. MAIN PROBLEM

As a growing source of social discontent, Egypt's housing crisis is an urgent political concern. On one hand, there is a glut of high-end housing, with over six million units standing empty. On the other hand, there is a shortage of affordable units for people who are really in need, with 18 percent of Egypt's families living in single-room dwellings in slums (4).

Egypt's low-income housing shortage has historically generated more rhetoric than action. In 2005 the Egyptian government announced a housing project of 500,000 low-income units which as of February 2014 had delivered 360,000 units. Around 50,000 of these remain unconnected to utilities networks and are not useable. While, 40,000 Egyptians applied for housing units and each one made 5,000 EGP down payment have yet to receive their units. A total of 200 million EGP were collected from Egypt's poorest families. The people protested and were told to apply for the more recent Social Housing Project, but the criteria are different and many may not qualify (7).

In October 2014, the Egyptian government approved an initiative to issue long-term, low-interest loans of 30000 EGP for finishing informal buildings. Obtaining the loans would not require proof of building ownership. The terms described in the press, however, based on a Ministry of Housing statement, call for proof of both the applicant's ownership of the property and monthly income. It is thus unclear when or how these loans, which would effectively endorse informal building on agricultural land, will be made available (8).

Most Egyptians, whether in formal or informal urban areas, do not hold titles to their properties. This prevents them from applying for mortgages and severely restricts the mortgage market growth, which currently equivalent to less than one percent of GDP. Experts agree that the only way to end the housing crisis is to deal with the issues of mortgage finance, a project that has made some headway in the last decade with the help of the World Bank. For now, the largest tracts of infrastructure-equipped land are in the so-called new cities around Cairo in the desert, which are unaffordable options for low-income families (4).

Egyptians are accustomed to fending for themselves when it comes to putting a roof over their heads, and with population growth and urbanization proceeding at a rapid pace, a continued lack of affordable housing will not slow them down. But unless the state's approach shifts to more carefully considered ventures involving infrastructure-equipped land and accessible mortgage finance, its current efforts at housing production are likely to exacerbate rather than alleviate Egypt's growing affordable housing crisis.

The Egyptian national housing project (2005-2012) is one of the main governmental movements to provide affordable housing. The project consists of three main axis which are; first care housing, rural housing and private sector initiative

housing. The research analyzes three cases representing the three axis of the national project.

III. STUDY CASES

A. Othman Housing Project (First Care).

The project of Othman Housing first launched in October 2005 as one of the social housing projects according to the National housing plan developed by the Egyptian government.

1) Site and location.

The project is located in 6th of October city in Cairo and has access from Alwahat road. Its area is 200 acres.

2) Description of the project.

The population now has reached 14,000 residents.

The project is dedicated to:

- Low-income young Egyptians who can't afford housing.
- Must neither own nor rent any other units.
- Must not have previously benefited from governmental projects.

projects.

Urban analysis

The project consists of tall six-story housing blocks that stretch alongside Al-Wāhāt Al-Baḥariyya road with desert surroundings them and more blocks and the 6th of October cemetery.

Housing Units.

The project has only one building type for all the housing blocks; there are small differences in the external colors of the facades.

Each residential unit is only 42 meter square so it is only suitable for young individuals or small families.

Utilities.

The project offers community facilities including a school, stores, nursery, a health care unit, houses of worship, and playgrounds.

3) Distribution of ownership.

Ownership in Othman Housing Project is based on a 5 year rental contract to the young people who can't afford normal housing.

4) Building regulations.

The project constructed according to the Egyptian building code 119-2008, and execution regulation 144-2009.

5) Sustainable issues

Green buildings

The building design does not have passive design methods integrated within it. The materials used are not locally extracted materials so it's not suitable for the surrounding environment.

Energy

The project depends on the national grid of electricity distribution without ideas of new and renewable energies.

6) Problems.

Housing Unit Size

The standard 42m², two-bedroom apartments are too small for many families.

Lack of Safety

The desolate of the area combined with the authorities' general abandonment of the area has helped make theft and

violence common.

Remote Location and Poor Infrastructure

The area lacks basic facilities and functioning services. Also lacks public transportation.

7) Conclusion.

Although Othman housing project was planned to help in solving Egypt's housing problem, it has become a problem in itself. Building blocks upon blocks will not solve the issue as long as the execution of the settlement process is not properly planned to meet the needs of the users



Fig. 2. Map showing Othman Housing Project location (9).



Fig. 3. Photo showing urban fabric of the Othman Housing project (9).

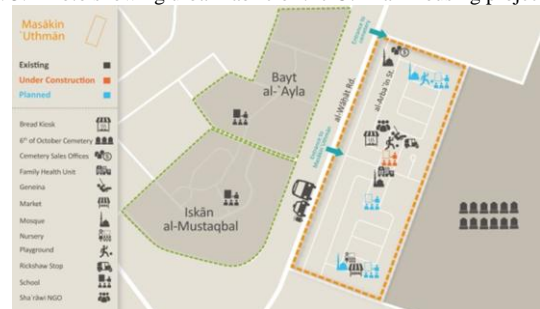


Fig. 4. Map of community facilities within the Othman Housing Project (9).

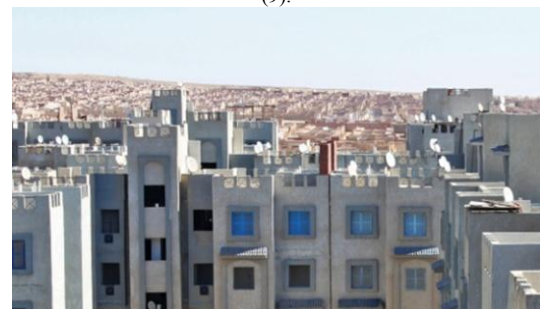


Fig. 5. Photos showing finishing material and architectural details (9).



Fig. 6. Layout of the Graduate Villages project site (10).



Fig.7. Photos of building typology of the Graduate Villages project site (10).

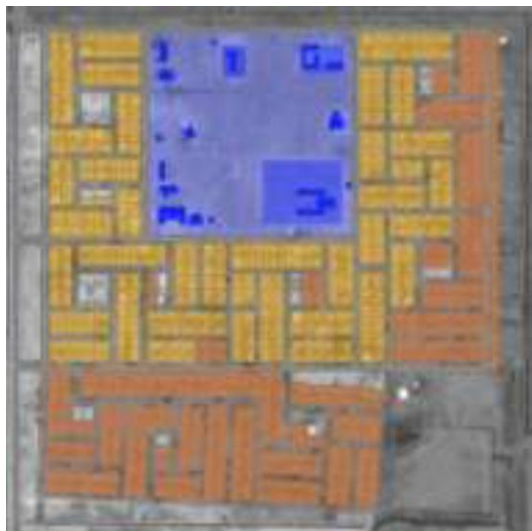


Fig. 8. Layout showing utilities within the Graduate Villages project site (10).



Fig. 9. Photos showing construction problems in the Graduate Villages project site (10).

B. Graduate Villages at Burullus Lake (Rural House)

The project of Graduate villages is launched to

accommodate fresh graduates and who was affected by the law of Landlords and Tenants in Egypt since the late nineties of the past century. The 3 Graduates' villages are surrounded by the agriculture lands; each unit owns 2 - 4 acres to be reclaimed.

1) Site and location.

The Case study is located at Kafr el-Sheikh Governorate at Burullus center at the north of El-Burullus lake where the 3 villages are related to its management and polices. It connected to the international coastal road which acts as an important axis for future urban development. The following map is El Said El-badawy village as an example from the 3 villages.

2) Description of the project.

Urban analysis

The project has clustered distribution of building blocks with back gardens, and central zone for urban services.

Housing Units

The residential buildings are classified into 2 Types (Type A, Type B). Each of them is semi-attached one story building. The building unit itself with areas 34m² and 44m² at Type A and Type B respectively isn't sufficient to the resident's needs.

Utilities

Services area (educational, medical, recreational, social activities ... etc.) is planned to allow people to make short walking trips and provide other opportunities for individuals to live and work in close proximity but they are mostly empty without sufficient services so residents have to travel to other places.

3) Distribution of Ownership

Direct Cash Payment from Government (Burullus Local Council).

4) Building regulations

Housing regulations are semi-attached one story buildings with a building ratio 17.5% for type A and 34% for type B on the plot area. Most of residents made many modifications on the building form and its design expanding its spaces to be suitable for their needs. Other interventions are done by reconstructing new buildings on the whole area with different structure to be further extended vertically without any regulations to control and optimize the building form or design character.

5) Sustainable issues

Green buildings

There are no strategies to overcome the low or high temperature degrees in addition to the deteriorated conditions of some building roofs.

Energy

The project depends on the national grid of electricity distribution without ideas of new and renewable energies.

6) *Problems*

Construction problems

The building construction faces many problems of failure and wall and roof cracks.

Security problems

There is absence of security and police office in the city.

Utilities

Lack of urban services and public transportation.

7) *Conclusion*

The case study results show that the current built environment have many problems which led to the abandonment of its residents with the absence of development strategies to regenerate these villages into sustainable

neighborhood models neglecting the potentials of the site and the surrounding environment. The development of site infrastructure, Mobility systems, services, and energy and resource management must be integrated with the regeneration of building forms and its population to accommodate high density to ensure economic, social and environmental sustainability.

C. *Harm city (Private Sector).*

1) *Introduction*

The project of Harm city first launched in May 2007 from combination of Orascom Housing Community OHC, Egyptian government and Housing & Development Bank.

In late 2008, the first residents moved in and today Harm City is home to more than 5,000 families.

2) *Site and location.*

The project located in 6th of October city, 20 km west of Cairo and have accessed from Giza-Alwahasat road. It lies in two thousands of acres approximately 8.4 million square meters of land

3) *Description of the project.*

Population

The project residents;

- Low-income Egyptians.

- must neither own nor rent any units.

- must not have previously benefited from the Ministry of Housing projects.

- Age range from 21: 50.

Population

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- Age range from 21: 50.

Urban analysis

The project has clustered distribution of building blocks with back and front gardens, and central zone for urban services.

Housing Units

The project has four different housing units.

There are adjacent and separated units, with one or two bedrooms also two or three floors to match different families' needs.

Utilities.

The project offers community facilities including schools, stores, clinics, a cinema, houses of worship, and sporting club under construction.

4) *Distribution of ownership*

There are three programs of ownership;

The internal Finance.

The mortgage program from Housing & Development Bank.

The Direct Cash Payment.



Fig. 10. Layout of the Haram city project site (11).



Fig. 11. Photo of Haram city project (11).



Fig. 12. Photo of building typology in Haram city project (11).



Fig. 13. Photo of utilities in Haram city project (11).



Fig. 14. Photo showing architectural style and building materials in Haram city project (11).

5) *Building regulations*

The project constructed according to the Egyptian building code 119-2008, and execution regulation 144-2009.

6) *Sustainable issues*

Green buildings

The building design tries to overcome the high temperature degrees using roof vaults and domes, shaded terraces that have great effect on the indoor climate.

Energy

The project depends on the national grid of electricity distribution without ideas of new and renewable energies.

7) *Problems*

Construction problems

The building construction faces many problems of failure and wall cracks.

Security problems

There is absence of security and police office in the city

Utilities

Lack of urban services and public transportation.

8) *Conclusion*

TABLE I

THE STATISTICS RELATED TO THE NATIONAL HOUSING PROJECT IN EGYPT.

Segments				Different national housing program axes		
Income Segments	% of Population	Family Income (LE per month)	25% of Income (LE per month)	First Care & Rent	Ownershi p& Rural House& Family House	Build your home &Private Sector
				8%	61%	31%
				200 LE per month	160 LE per month, yearly increase 7.5%	(1100 – 5733) LE per month
The Upper Class	20	1840	460	unqualified (Avg. income more than the maximum allowed for this level)		Qualified
The Upper-Middle Class	20	1200	300	Qualified & Affordable	Qualified & Affordable	Can't Afford it
The Middle Class	20	1000	250			
The Poor	20	800	200	Unqualified & Unaffordable	Unqualified & Unaffordable	
The Poorest	20	600	150			

Project of Harm city is a promising social housing in Egypt has some basics of sustainable design and privet sector participation, while it faces many problems and inefficient management policies.

The next table represents the statistics related to the National housing project that was supposed to provide 500,000 housing units of various types and sizes to serve all the people of different classes, We find that the project does not serve those who most need it and they represent 40% of the population.

IV. CONCLUSION.

From the previous discussion; promoting affordable housing is a main social responsibility of the whole society. Safeguarding adequate housing conditions for all people is of great importance to create a balanced society. Each state should establish a framework enabling public and private stakeholders to offer affordable housing (decentralization). Market forces should be enhanced to support housing under affordable conditions in a market economy system. This will Promote sufficient supply of housing and prevent scarceness, especially in the strongly in demand regions. Also Management of the existence rental housing sector will be helpful as it poses an alternative to owner-occupied housing with less investment and financial burden for the tenant.

Three key overarching areas of focus to provide affordable housing are:

- Investing in People, or preparing Egypt’s youth, the next generation, to be competitive members of the global economic community and make the most of the current demographic transition and changing age structure. Doing this requires a more relevant and more equitable education system including improved vocational training.

- Green Transformation, which involves the transition to 21st century forms of renewable energy, efficient uses of water and energy, the utilization of “green” aspects in all industries, and the reduction of pollution.

- Innovation and R&D to create a knowledge economy by investing in innovation, creating a better climate for R&D and supporting new clusters of innovation, with higher value-added. In addition to each industry having to develop its own competitiveness strategy, each governorate will also need to develop its own local economic development strategy.

Finally sustainability could be achieved within these approaches

A. *Institutional sustainability:*

The culture of voice, political competition and accountability need to be restored, and optimally, should be based on competence and local leadership. Civil society organizations (CSOs) are often regarded as a significant form of popular participation, while cooperatives, workers’ syndicates, political parties, human rights organizations, and the media can also play an important role in spreading the culture of participation. More broadly, civil society must be considered as the legitimate arena in which citizens increasingly participate in the transition to a democratic society. CSO s should be encouraged to enter into more

diverse fields of activity for community empowerment and collective action.

B. Environmental sustainability:

Concerning all elements of natural resources including agricultural land, water, energy - both depletable energy (petroleum and gas) and the potential for renewable energy (wind, solar) - and their sustainability. Analyzing the status of the agricultural development strategy and issues of food security, water and irrigation. Giving special attention to the impact of growth and development on Egypt's environment and related sectors, including water, sanitation, health and waste management. The importance of introducing environment-friendly practices such as ecotourism is highlighted. Concerned with the potential threats of climate change, water scarcity, and energy scarcity, and the need for adaptation. Finally, issues of long-term sustainability are covered in the areas of urban planning, informal settlements and transport.

C. Social sustainability:

Cover all elements of human development including policies and programs for poverty alleviation, access to social services, (education, health, family planning), for all segments of the population, with special concern for children, youth, and women, as well as the handicapped and the aged. Human development is also concerned with the processes of participation, democratization and good governance. This requires accelerating the on-going process of administrative, political and fiscal decentralization, promoting further reforms towards applying international human rights standards, reforming and implementing a new civil service reform law, and furthering efforts in fighting corruption.

D. Economic sustainability:

Fostering economic growth and employment by stimulating investment and enhancing economic reforms, preserving natural wealth and rationalizing its usage to achieve sustainable development, raising the competitiveness of the Egyptian economy to speed up integration into the world economy.

E. Culture sustainability:

There is absence of an enabling political, social and economic environment for the participation of youth. There is a need to: Establish the culture of participation among youth through educational institutions, civil society organization and media; expand programs of political education and develop programs on leadership skills, which will enrich youth knowledge, enhancing their participation in socio-political life and enable them to exercise the rights and duties of citizenship.

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