

# Towards Affordable Housing in Egypt

## The Green Settlement Approach



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Egypt now experiencing one of the highest rates of urbanization in the world, It became clear that housing policies in Egypt exert significant effects on the functioning of the overall economics, urban, and environmental situation, and have a much greater effect on the situation of the poor than do the direct poverty-related policies. Untangling the effects of housing policy requires a broad sectoral perspective, analyzing the performance of the housing sector in Egypt, and also focusing on how policies could improve the situation of the poor.

## 1 Shelter Situation Analysis

### Basic General Data

Egypt's terrain is largely composed of desert which constitutes approximately 96% of the total area. The remaining 4% make up the Nile River Valley and Delta, where nearly the entire population has chosen to live.

### Geography and Administration

Egypt is located in the northeast corner of Africa on the Mediterranean Sea, and includes the Sinai Peninsula, which is often considered part of Asia, is bordered on the west by Libya, on the south by Sudan, and on the east by the Red Sea and Israel, its natural boundaries consist of more than 2,900 Km. of coastline along the Mediterranean Sea, the Gulf of Suez, the Gulf of Aqaba, and the Red Sea. (CIA World Factbook 2008).

Egypt is a republic since 1952, covers 1,001,449 square kilometres of land area, and is divided into (28) governorates, (217) cities, and (4617) villages. The geographical regions as set in the urban plan are as follows: Upper Egypt, Central Egypt, North Upper Egypt, Metropolitan Cairo (capital and largest city is Cairo), The Canal Zone, The Delta, and Alexandria and Matrouh region.(Ministry of Administrative Development 2008-2009).

### Demography and Health

Population: 81,713,517 (feb 2009 est.), Population growth rate: 1.75%

Gross density 82/ sq km.

Age structure: 0-14 years:31.8% (male 13,292,961/female 12,690,711),

15-64 years: 63.5% (male 26,257,440/female 25,627,390),

65 years and over: 4.7% (male 1,636,560/female 2,208,455).

Birth rate: 22.1/1000, Death rate: 5.23/1000, Infant mortality rate: 28.3/1000,

Life expectancy at birth 71.29 years, Total fertility rate: 2.83 children

born/woman, , Literacy rate: 71.4% (2005 est.).(CIA World Factbook 2008).

### Economy

GDP \$452.5 billion (2008 est), GDP growth 7%, GDP per capita \$5,500(PPP),

GDP by sector: agriculture (13.4%), industry (37.6%), services (48.9%).

Inflation 18%. Labour force 24.72 million, labour force by occupation: agriculture (32%), industry (17%), services (51%), (2001 est.).

Unemployment 8.7% (2008 est.). Exports \$33.36 billion, Imports \$56.43 billion.

Public finance: public debt \$28.84 billion, revenues \$40.46 billion, expenses \$51.38 billion (2008 est.).(The World Bank Report 2008).

## 1.2 Shelter Related Fact and Figures

### Housing stock

1952-1982, the public and private sectors built a total of 1,118,710 units.

1982 -2006, total constructed housing units are 3,651,702 units.

Governmental sector has constructed 1,271,995 housing units which represents approximately 34.8% of total units number. Constitutes of 81.9% low cost housing, 17.9% middle class housing and 0.2% high class housing.

Private sector has constructed 2,379,707 housing units which represents approximately 65.2% of total units number. Constitutes of 45% low cost housing, 48.7% middle class housing and 6.3% high class housing.

Regarding the year of 2005/2006, all housing units constructed by the governmental sector are included in the national housing program, and are about 13,922 units, while those constructed by the private sector (outside the national housing program) are about 98,533 units.( Ministry of Housing, Utilities and Urban Communities, Urban Development in Egypt 2006).

Housing deficit (quantitative and qualitative)

***Quantitative:***

In 2004 estimation shows that total annual demand for housing units is approximately 750,000 units (480,000 for newly weds, 220,000 for replacement of marginalized areas, and 50,000 for old buildings that are about to collapse). However, total supply to the formal real estate market was only 260,000 units, about 35% of demand, (OPIC July 2005).

In 2008/2009 analysis of data information confirmed that there is oversupply for upper and upper-middle income groups and undersupply for lower income group.

***Qualitative:***

Existing units suffer from lack of infrastructure due to the lack of housing formal titles that limits infrastructure development, since it is not possible for utilities to know who owns the properties using their services, and therefore who is responsible for paying for them.

Existing rental units (owned by private sector) suffer from lack of maintenance, since landlords do not have any incentive to invest in their property.

The rationale for public ownership of housing is often to provide affordable rental housing to poor segments of population, (very low rent) and correspondingly, under-maintenance and more rapid depreciation occurs.(World Bank, The Macroeconomic and Sectoral Performance in Selected MENA Countries, A Comparative analysis April 2005)

### **Yearly percentage increase in number of dwelling units**

There is no available accurate data for the yearly percentage increase in number of dwelling units in Egypt, but we have figures that could indicate the progress done in the construction of dwelling units.

Period	Total Dwelling Units	Dwellings Units per year
1952 - 1982	1,118,710	37290
1982 - 1999	2,474,003	145530
1999 -2004	805,244	161000
2004 - 2005	260,000	260000
2005 - 2006	112,455	112,455

Ministry of Housing, Utilities and Urban Communities  
Urban Development in Egypt 2006.

From the above mentioned figures, we can find that the rate of dwelling units was increasing from year 1952 to the year 2005, while from the year 2005 to 2006, the percentage of number of dwelling units decreased approximately by 57%.

### ***Occupancy***

More than 1.8 million housing units in Egypt are vacant. Over 1 million of those are in Cairo, resulting in a vacancy rate of 14.5%, which is very high by international standards. (OPIC July 2005). These units are vacant for the following reasons:

- Parents may be keeping housing units for their Children's future use.
- Owners may not want to rent housing units because the low rents they can receive due to rent controls do not make it worthwhile.
- Owners may not be able to find buyers who can afford to buy the unit due to the lack of available financing options.
- Due to difficulties in expelling bad tenants or getting their dwellings back.
- Rents in the private sector naturally tend to be too high for the poorest households.

## Housing standard

Total constructed housing units from 1982 to 2006 are 3,651,702 units.

57.8% Low cost housing for low-income groups, 38% of housing units for middle and upper-income groups, 4.2% for high-income groups. (Ministry of Housing, Utilities and Urban Communities, Urban Development in Egypt 2006).

## Floor area per person

Regarding number of persons per room, In 1986, the rate was 1.47 P/room, in urban areas. while in 1996, the rate is changed to be 1.29 P/room.(Ministry of Housing, Utilities and Urban Communities, Urban Development in Egypt 2006).

Regarding number of persons per housing unit, in 1976, 227 units/1000p indicates 4.4 P/unit, in 1986, 242 units/1000p indicates 4.13 P/unit, while in 1996, 257 units/1000p indicates 3.9 P/unit, as a result of increasing rate of housing units to number of users.

## Tenure of households

There are three main formal contract forms of household tenure that control the relation between household and owners: rent contract supported by laws before the year 1996, rent contract supported by laws after 1996, informal household tenure without written contract, and the owner himself is the household.

### ***Rental (formal and informal)***

In Egypt, rent control was recently cancelled for new leases, on the other hand is still relevant for the old stock. In the Egyptian housing market, formal rentals (old and new leases) take place mostly in middle and high standard areas, while informal rentals appear only in slum and squatter areas.

### ***Ownership (formal and informal)***

In Egypt, estimates are that over 90% of urban housing is in the informal sector (without a formal title). These properties are either unregistered or are registered at unrealistic valuation level, as a result of high registration fees from one side, and the registration cumbersome process from the other side. Lack of formal titles limits infrastructure and urban development, in addition to owners can not use their houses as collateral for other investment, such as small businesses. Lack of a

proper titling system is a factor preventing development of housing finance system, consequently, limiting the economic growth.

### **Housing affordability ratio**

Housing affordability rather than availability of the stock is the central problem. When existing housing stock output is evaluated in terms of the housing space per capita (quantity indicator), and service network (quality indicator), no shortage of housing appears to be a problem. Thus, the affordability problem does not appear to be driven by scarcity as a whole, but it is more likely that scarcity exist for certain segments of the low-income housing market. On the other hand, when affordability is examined through house prices to income ratio, it was found that the price of housing is relatively high, and affordability levels are low.(World Bank, The Macroeconomic and Sectoral Performance in Selected MENA Countries, A Comparative analysis April 2005)

### ***House price to income ratio***

Households surveys in Egypt indicate that the poorest segments of the population spend between 30% and 40% of their income on housing.(World Bank, The Macroeconomic and Sectoral Performance in Selected MENA Countries, A Comparative analysis April 2005). For low and middle income households housing is often their biggest expense, accounting for 50% to 70% of their budgets. (OPIC July 2005).

### **Land (formal/informal)**

Formal lands are often exist in areas subjected to urban planning control, most of it are registered. Other kinds of formal land ownership in Egypt are the “Hekr land rent”, and the “hand claim with property taxes”, both kinds are considered to be formal but with incomplete procedure of registration (at least recorded by the government), on the other side, most of lands that exist in slum, squatter and unplanned in urban areas are informal, also more than 90% of lands in Egyptian rural areas are informal as well. (Ministry of Housing, Utilities and Urban Communities, General Organization for Physical Planning 2006).

## Housing construction

Housing construction sector represents almost 50% of the Egyptian government's investments. Despite this emphasis on housing, Egypt currently has a supply-demand mismatch in the sector. There is an excess inventory of medium- and high-end properties, while the demand is for low-income housing.

Investments in the housing construction sector (land value and infrastructure costs are not included), in the period of 1982-2006, are about 91.81 billion egyptian pounds (1U\$=5.5L.E), and are as follows:

- Governmental sector investments: 27,238 billion egyptian pound.
- Private sector investments: 64,572 billion egyptian pound. Regarding the year of 2005/2006:
  - Governmental sector investments is 868 million egyptian pound.
  - Private sector investments is 4,508 million egyptian pound.

(Ministry of Housing, Utilities and Urban Communities, Urban Development in Egypt 2006).

## Building materials

Materials used in building construction in Egypt are referred to the Egyptian codes, while it is common to use reinforced concrete to construct the building skeleton and cement bricks for partitions in the urban areas, in rural areas it is common to use mud bricks and bearing wall system beside the previous mentioned materials used in urban areas, also instead of bricks, stones are sometimes used especially in coastal areas and desert regions like Badwin settlements.

## Access to and cost of Basic Services/Infrastructure

In 1999, water services reached 95% of the urban population, and 90% of the rural. In the same year, sanitary drainage services reached 75% of the urban population, and 20% of the rural. **NOPWASD** comprehensive national plan till the year 2030, phased as follows:

**Water sector:** The per capita share target for 2030 is 250 litres/person/day in capitals, and 215 litres/person/day for other cities, 125 litres/person/day for villages of more than 10,000.

**Sanitary drainage sector:** Improving this sector involves endowing it with the capacity to carry 80% of water consumption. Replacement and renovation of networks are necessary to maintain the current capacity of 1.5 million m<sup>3</sup>/d. Construction of additional networks is necessary to increase capacity by another 2.47 million m<sup>3</sup>/d. Un-serviced areas will require construction of new projects of a total capacity of 5.5 million m<sup>3</sup>/d.(Ministry of Housing, Utilities and Urban Communities, Urban Development in Egypt NOPWASD 2006).

Means of communication and transportation such as transportation network, railways and telephones were underdeveloped. Currently Egypt has made a significant progress in this field which is very important in the procedure of development.

**Transportation:** Railways 5,063 km, Highways 92,370 km, paved 74,820 km, unpaved 17,550 km (2004), Waterways 3,500 km, Airports 88(2007).

**Communications:** Telephones: main lines in use 10.8 million, mobile cellular 18001 million (2006), Radio broadcast stations, Television broadcast stations 98 (1995), Internet hosts 5,363 (2007), Internet users 6 million (2006).(Ministries of Transportation and Communication reports 2006).

#### **Access to and cost of Education**

The Egyptian educational system is highly centralized into three stages:

**Basic education** (primary stage, preparatory stage), **Secondary education** which consists of three different types such as general, technical, and vocational education, **Post-Secondary education.** Education beyond primary and preparatory stages depends on the student's ability.

Types of schools: Government schools and Private schools.

There are both private and public institutions in Egypt. Public higher education is free, Egyptian students only pay registration fees, while private higher education is much more expensive. Major university is Cairo University (100,000 students).(Education in Egypt-Wikipedia, the free encyclopedia)

### 1.3 Housing Policy

The governmental housing policies designed to resolve the country's housing problem are as follows:

- Constructing new urban communities.



- Encouraging Housing Financial Fund.
- Encouraging the Private Sector to invest in housing.
- Improvement of Housing Quality.
- Enhancing the Quality of Architectural Design and Aesthetics of Housing Units.(Ministry of Housing, Utilities and Urban Communities, Urban Development in Egypt 2006).

#### 1.4 Actors in Shelter Delivery and their Roles

a-Public sector: Ministry of Housing, Utilities and Urban Communities through its housing and utilities, and development Sectors, it provides low-income people with small plot size lands and small dwelling units with low prices and with different terms of payment that may extend to 20 years without any interest.

b-Central and Local Government: provides low-income people with subsidised dwelling units with very small instalments up to 25 years, and rental dwelling units with very small monthly rent fees, around 15 U\$. Provided that beneficiaries conditions (socially & economically) should be subjected to the local government research to evaluate and to prove their needs.

c-Development Agencies, Public housing companies: provides low-income people with rental dwelling units with high monthly rent fees in comparison with central and local government.

d-Semi-Public agencies through housing cooperative, El-Awkaf Authority: plays the same role as the central and local government.

e-Banks like Housing and Urban Bank, Land bank Insurance companies: Provides low-income people with long term loans, with low interest rates, only in case the dwelling units are delivered by a public actor like the ministry of housing and under the umbrella of national projects.

f-Private sector includes companies, enterprises and small investors: does not provide people with dwelling units unless the whole price is paid in full, or the buyer has the opportunity to have an agreement by himself with any national or private bank to finance him or her with a percentage from the cost of the dwelling unit, in this case the loan is relatively for a short time and with high interest rate.

## 1.5 Shelter Design

### Physical Planning

Egypt's cities are growing fast and will continue to grow, more than half of the population of Greater Cairo lives in informal, undersupplied, and densely populated settlements, (BBSNews: German Aid Showing Great Gains in Cairo "Shanty Town"2007) with too little space and too few social services.

Shanty towns in Egypt is the product of a long pattern of uncontrolled internal migration that began in the late 1950s, as rural populations moved to Egypt's cities looking for work. They built homes illegally on government land, spawning settlements that grew without planning, has a high building and population density, deficits in public and basic services, and has legal problems.

### Land Use

A Land use regulation is a serious problem in Egypt since it affects the cost of housing and the spatial efficiency with which real state is used.

-Affecting the cost of housing:

Land is supplied where there is less demand for it, the housing that is built is not responsive to the demands for land use, and the process conveys non-transparent subsidies, to middle and upper income households rather than the poor. All of these problems cause land and correspondingly house prices to be higher than they otherwise would be, consequently informal settlements growing up.

(World Bank, The Macroeconomic and Sectoral Performance in Selected MENA Countries, A Comparative analysis April 2005).

-Affecting the spatial efficiency with which real state is used:

While the built up structure of Egypt follows that of most cities around the world- denser towards the city center and less dense as one move away from the center- the land price gradient actually does not. In contrast to the normal pattern, prices also relatively increases as distance from the city center increases. This price pattern suggests an extremely distorted housing market, one that leads to inefficient uses and spatial development of the entire fixed capital stock.

## Population Density

The density in Egypt is 82/ sq km, taken into consideration that the entire population lives only in 4% of the total area. While population density in informal settlements is too high, for example, in Manshiet Nasser town with 800,000 people the density reached 110,000 people per square kilometre. (BBSNews: German Aid Showing Great Gains in Cairo "Shanty Town"2007).

## Shelter Quality

In Egypt shelter quality is in acceptable standard only in formal areas, while in informal settlements( unplanned urban areas), the urban structure is characterised by poor access, narrow streets, lack of infra structure, public spaces and utilities, high building density and high level of environmental pollution.

## *Function*

The shelter design function is not always good in planned areas in Egypt – only good in districts where no haphazard changes take place in its urban design, while in informal settlements its function is very weak as a result of the informal planning where mix use land use takes place.

## *Safety*

Safety issue is ensured in areas subjected to the process of planning, on the other hand, in informal settlements the situation is different, physically and socially, due to lack of site engineering studies, buildings construction without premises implemented usually by unskilled contractors, lack of basic amenities, such as sewage and water systems, narrow roads, insufficient internal accessibility.

## *Comfort*

Comfortability, is often refers to good planning and good design, this is only found in Egypt in high class standard areas, and planned middle class areas, while in informal settlements, people suffers from uncomfotability since the settlement suffers from lack of basic amenities and services.

## *Social Inclusion*

People who lives in informal settlements in Egypt suffers from several social problems such as lack of safety, illiteracy, and crime. They feel that they are

on the margins of society, inhabitants of informal settlements produce most of street children. Social problems have appeared in many parts of Cairo, affecting both rich and poor areas.

### Gender Issues

In Egypt, as mentioned before the total number of population is 81,713,517, with 40,526,556 females and 41,186,961 males, (CIA World Factbook 2008).

The ratio of females to males is almost 50%, it is clear that females represent half the Egyptian society. About the situation of the females in Egypt, in high and middle standard classes they are either housewives, or working in high and good jobs, on the other side, females of low income standard- most of them live with their families in informal settlements- they use to work on purpose of helping their families, or because she is widow, divorced or her husband has no job (women headed household), it is suggested to create good job opportunities for females while making upgrading projects for informal settlements to increase their- or their families- income.

### Sustainable Development

To achieve sustainability, social development, economical growth and environmental protection should be integrated. In Egypt, we can find sustainable development dimensions take place in new projects, in replanning and upgrading projects sustainable development is processed.

### Norms and Codes

In Egypt, Housing and Building National Research Center is responsible of issuing The Egyptian Codes for Buildings, which is mandatory applied on all new buildings. But before making the mentioned code, buildings in formal areas were following standard norms and buildings regulations and currently the code, while in informal settlements, norms, regulations and codes are ignored by people.

## 2 Organisation

The Ministry of Housing, Utilities and New Urban Communities is responsible for formulating public policy regarding urban development, this work being accomplished by its planning and research departments in co-ordination with

other ministries, and governorates. This work further takes into consideration national policies and the concerns of the various government bodies that focus on urban development. The Ministry of Housing, Utilities and New Urban Communities has two main sectors, housing and utilities sector, and the development sector.

Housing and Utilities Sector, where Housing and Building National Research Center is one of its bodies that aims to enhance the productivity of the construction sector, as well as to provide services and advice related to scientific, engineering and technical issues. HBRC consists of 8 institutes in different engineering branches. The institute of architecture and building with capacity of 25 high professional professors and 25 architect and assistant researcher, are responsible of carrying out the process of town and urban planning projects and the designation of the national housing projects as well, also we are authorized to revise most of the projects designs carried out by private consultant offices, currently we are nominated to replan and to implement all Egyptian cities and villages, and to define its new urban boundaries. Concerning upgrading slum areas and designation of new settlements for low-income people, we are responsible to design more than 20 new housing communities and desert outskirts villages as a phase of the ministry national housing plan. In addition to the above mentioned duties we are working now in initiating the green building council committee under the umbrella of the ministry to formulate the first Egyptian green building code.

### 3 Shelter Problem

Egypt's housing problem began to assume drastic proportions in the early 1960s, the private sector increasingly tended to refrain from investing in housing sector, the population rose by high rates, the government's inability to meet popular demand for housing became noticeable. The costs, and therefore the prices, of housing units have progressively risen, putting these beyond the reach of the majority of citizens (basically who belongs to the lower/ middle socio-economic classes).

**It became clear that housing affordability in Egypt - rather than availability- is the central problem.** The problem is not a shortage of supply of housing as a

whole-although shortage may exist for certain categories of housing products (e.g. low income housing). The affordability problem is largely the result of housing and land supply policies, thus, these policies constrain the functioning of the housing market. In short, the main problem is not the quantity of housing production, but by whom and for whom housing is produced.

Informal settlements are another consequence of the affordability issue, in Egypt demand by low- income groups is reflected on squatter settlements and un-serviced peripheral neighbourhoods in Greater Cairo Region (GCR), which houses 18 million inhabitants, (62% of them lives in 81 informal/squatter settlements

## 4 Proposal for change and improvement

### Overview

Analysis strongly suggests that the Housing Problem in Egypt is an acute, and none conventional one, it is a multidimensional problem that is occurred as a result of an array of diversity problems such as **affordability potentialities, high housing price costs, low standard housing quality due to lack of maintenance as one of several reasons, land management problems, housing market functioning situation, existence of slum areas, housing policies, high housing running costs, poverty,.....etc.**

As I work for the Housing and Building National Research Center – One of the Ministry of Housing bodies – I am concerned in working in different housing projects specially low cost housing, also I am the coordinator for designation of one of the Self-help housing projects in Egypt, this project is called “ Ibni Baitec” (Build your House ) in Badr City, one of the National Urban Plans. My organization is that provides the ministry with technical advises and designs of most of the housing projects carried up by the ministry. Also, I am a member in the committee – Egypt Green Building Council - working and doing researches in the field of Green Building and studying how to apply this concept in Egypt and to get benefit of it’s advantages.

## Findings

From the studies and analysis done in phase one in Cairo, Egypt, and the knowledge and experience acquired in phase two- Shelter Design and Development Programme- held in Sweden. To change and to improve it is important to focus on the central problem, and also to find none conventional solutions such as methodologies and ideas which could be applied and developed as well. It became clear that **the main and central problem in Egypt is housing affordability rather than availability**, in other words, the main problem is not the quantity of housing production but by whom and for whom housing is produced, also the issue of how housing units are constructed and produced, its standard of quality, also its running costs are a very important issue to address, to be able to achieve sustainability in the urban development process.

## Conclusions

- The supply of low-income houses is a lot lower than the desired level of housing flow in comparison to the market demand.
- The provision of subsidized housing, and production by the public sector, do not effectively address the problems, creating additional pressure on housing costs.
- The key policy instruments under government control are particularly land management, fiscal and financing policies.
- The public sector is neither a good landowner nor an effective land developer, causing more informality and slums, as well as higher house prices and inelastic housing supply.

## Objectives

The target is how to create and to find a suitable methodology and an appropriate tools that could help in the improvement of housing market functioning and consequently improving the affordability level for the low income groups, maximizing the affordability of a reasonable houses quality, minimizing the growth of slum settlements and upgrading the existing informal settlements,

minimizing the houses construction and production costs and its running costs as well, moving towards sustainable development.

## Hypothesise

**Revising and modifying the existing housing and financing policies, and Adopting the Self –help Sustainable Green Building approach in the process of designation and construction,** helps in implementing and constructing a productive low income housing settlements, which would facilitate and enhance positive solutions in the problems of affordability, poverty reduction, activating the low income housing market functioning and would also improves the sustainable urban development in Egypt.

## Recommendations fora new Strategy

### **A- Housing and financing policies:**

The main target is to have solutions and some reforms that would be pursued to identify the following points:

- How could policies support and enhance the housing market functioning
- How could policies make low-income group be able to afford having houses.
- How could policies attract private sector and developers to invest in the low-cost housing projects beside public sector, for low-income groups.
- What policies and strategies (applicable) could reduce poverty.

### **Recommendations concerned with housing and financing policies to develop a well- functioning housing market:**

- 1- Decreasing the public sector dominance on land development and ownership.
- 2- The public role should be gradually disengaged in land market.
- 3- Build public-private partnerships for land development and housing provision, in addition to encouraging the NGOs to contribute.
- 4- Increasing the potential role of the private sector by giving them incentives to share in low cost housing development, and decrease the reliance on government housing agencies to develop land and housing for lower income groups.



5- Property rights and titling systems should be revised to make them simple and operational and to facilitate functioning of land markets, since heavy tax burdens, long and cumbersome procedures may lead people to avoid registering their property and transactions, and prevent real estate markets from functioning efficiently.

6-Eliminate rent controls, and find cut solutions for old rent contracts. Lower costs for sitting tenants, cause the rental housing stock to suffer from a lack of maintenance and eventually to decline, as investors shift towards other products.

7- Modifying slum upgrading policies and programs to improve the living conditions of poor settlements shall be a major priority in Egypt to be put on the right track to solve its slum problem, without further bank assistance.

8- Integrate informal settlements in the urban fabrics, therefore, informal settlements should be seen as a part of the housing solution rather than a problem, making them parts of the city by providing physical and social services.

9- Build capacity to enforce land regulation is a very important dimension, slow and uncoordinated planning procedures create artificial scarcities of planned land since they cannot cope with increasing demand, and force people to settle outside the planning boundaries.

10- Planning procedures need to be simplified as much as possible. Local governments need to be responsible for functional urban planning, and for delivery of serviced land provided with offsite infrastructure.

11- Simplify land development regulations, and develop appropriate codes and standards for building construction and land use that could be easily afforded by poor and low-income groups, ex. Plot size, building specifications.

12- Land management reforms should focus on reducing land subsidies, and on making land allocations better targeted and transparent.

13- Housing finance, land subsidies and interest rate subsidies should be effective and should be delivered to target group (low-income group), also, real transparency should be applied and dominated as well.

14- Encouraging bank's role by providing stable macro-economic environment and clear regulated environment for the private sector operations.

**B- Adopting the Self –help Sustainable Green Building approach in the process of designation and construction:**

The main target is to have solutions and a framework that would be pursued to identify and verify the following points:

- How could SGB approach contributes in solving the problem of housing affordability for low income groups.
- How could SGB approach reduces the construction costs, and the site costs (cost cut) during the construction process.
- How could SGB approach reduces the running cost for low-income group housing units.
- How could SGB approach is a rich channel for applying the concept of self-help housing.
- How could unemployed males and females (gender issue, and socio-economical aspect) could find good and promising job opportunities through the channel of applying the self-help sustainable green building approach.

**Recommendations and Advantages concerned with Adopting the Self – help Sustainable Green Building approach in the process of designation and construction:**

1- Sustainable building design principles should be adopted and applied such as: site optimization, energy use optimization, water conservation, kinds of materials and efficiency, indoor environmental quality enhancement, and operational and maintenance optimization.

2- Reduce poverty and enhance affordability through decreasing the consumption of energy, water and electricity, decreases the running costs of houses, enabling the end user (owner) to pay his housing unit bank instalments instead of paying the running costs expenses of the above mentioned items.

3- Enhance affordability by minimizing building costs through using and producing local building materials such as ash-fly or rice-straw bricks for constructing partitions, pre fabricated reinforced concrete vaulted panels for roofing construction, natural local materials are recommended for plastering and claddings as well.

- 4-Reduce houses costs by minimizing the site costs (site cost cut) by applying GB principles in site such as recycling materials wastes (marble and glass fragments for example), and re-use of water.
- 5- Reduce poverty,enhance societal benefits and social inclusion through creating job opportunities for people (male and female) by making them involved in the process of building their houses and also enhancement of their skills would help and support them to enter the employment market.
- 6-Upgrade quality and enhance comfort issues by re- using water that supports and encourages increasing the green area spaces, consequently, increasing the person's share in green areas, and this should rise the standard of settlements quality, and also enhances the health factor as well.
- 7-Enhance the environment and human benefits like health quality by recycling the wastes and decreasing the usage of materials that produce wastes that pollute water and land, and have emissions that affect the air quality.
- 8- Reduce life expenses, and enhance environment quality by encouraging using the renewable energy (bio-mass, Nuclear, wind mills energy), rather than conventional one.
- 9- Applying the SGB approach encourages and maximizes the role of NGOs/ civil societies to act and share in the self- help building process.

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