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# Mechanisms of application organized self-help housing program in new Egyptian cities for achieving low-cost housing (Case study: Ebny Betak project - Six October city)

Abeer Ahmed Mohamed Abd-Elkawy \*

*Faculty of Urban and Regional Planning, Department of urban planning, Cairo University, Egypt*

## Abstract

Low-cost housing projects are become the focus of many countries to provide suitable housing for low income groups through following some policies and programs. The self-help housing is one of these programs that meets the actual needs of the population within the framework of appropriate support from the state. This program was applied in many countries such as (England, United States and South Africa...) with various types and different mechanisms according to the role of each people and government in the building process. The Egyptian government has adopted this program in core housing projects during the nineties by giving the people land and part of houses to complete it according their needs, but with the decline of government funding, the government introduced another type of projects which called Ebny Betak project through the Mubarak National Housing Projects in 2005. The government sells the land with low price for low-income people in this project to build their housing themselves with the government support during all stages of building. Despite of the success of this project in building new houses, it faced some difficulties that impact on not achieving the desired goals such as the high cost of building residential units and the Medium-income groups are the beneficiary rather than low-income. Consequently, the paper aims to formulate the successful mechanisms of implementing the self-help program in new cities by reviewing the previous successful experiments in this field, furthermore analysis the project of Ebny Betak in six October city and clarify its main advantages and disadvantages to put the ways of solving its problems and achieve well organized self-help housing project in the future.

**Keywords:** Self-Help Housing Program; Low Cost Housing; Mubarak Youth Housing; National Housing Project; Ebny Betak Project; Six October City

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\* Corresponding author. *E-mail address:* [abeer\\_planner@yahoo.com](mailto:abeer_planner@yahoo.com)

## **1. Introduction**

Self-help housing approach had been used in many countries such as South Africa and Southeast Asia in the early of 20<sup>th</sup> Century through the population only to build their houses at low cost by using traditional construction methods which leads to emergence of many informal areas with lack services and facilities due to the failure in the supervisory role of the state. Therefore many governments have applied the idea of self-help housing in an organizational framework to enable the population from building their own houses, achieving their needs from housing and covering the increasing housing demand, especially for low income groups (Keare and Scott, 1982).

Sweden was the first country that applied this approach during the 1940s, then the United States of America, Germany, England and Indonesia during the fifties and sixties. These countries put a regulatory framework that supports the population with land and appropriate funding to complete the construction process in the shortest possible time.

Despite the previous efforts of the governments, the implementation of this approach faced a number of challenges like the high cost of construction and the lack of sufficient expertise of the population to build their houses with specific specifications. These challenges were solved by developing the government support to reduce the cost of construction through several forms of policies such as (site and services - core housing for developing informal areas or new areas) (Mayo and David, 1987; World Bank, 1974; UN-Habitat, 2005b).

The decline of financial governments support at the international level during 1970s made many countries find new mechanisms to implement the idea of self-help housing without the financial burden on the state. These mechanisms include providing cheap land for low-income people with the financial support of private sector and banks to complete the residential areas in short time. At the local level, the self-help housing approach appeared during fifties and sixties without the intervention of government and then applied formally in seventies and eighties to develop the existing informal residential areas by provision the infrastructure and services. The main role of the population is rebuilding the existing housing or demolition the old houses and build another new one.

During the period of 1980s and 1990s, the government establishes the new cities and involves the population in the construction process through the policy of core housing which applied in some new Egyptian cities such as (the Tenth of Ramadan and Sadat cities. This policy has succeeded in providing affordable housing units for low-income group, but it faced some difficulties like low government support and absence of regulatory framework for project implementation as well as the difference in implementation of each house according to the needs of each family.

Therefore, the core housing policy was developed with the Mubarak National Project in 2005 through Ebny Betak project which was implemented in several cities, the first one is Six October City. This project follows a set of mechanisms including providing land with an appropriate price and financial support from the government and the financiers.

Although there are many positive aspects of these mechanisms, there are negative aspects that led to make the beneficiaries of the project middle classes instead of low-income (Ministry of housing, 2008).

Hence, the paper focuses on identifying the appropriate mechanisms which clarify the roles of the government, beneficiaries and other institutional for achieving a successful organized self – help housing program for low-cost housing projects in new Egyptian cities, through reviewing the previous studies and experiences in this field, as well as analyzing the applied mechanisms in Ebny Betak project (select Ebny Betak project in Six October) to find its main problems.

## 2. Definitions of self-help housing approach

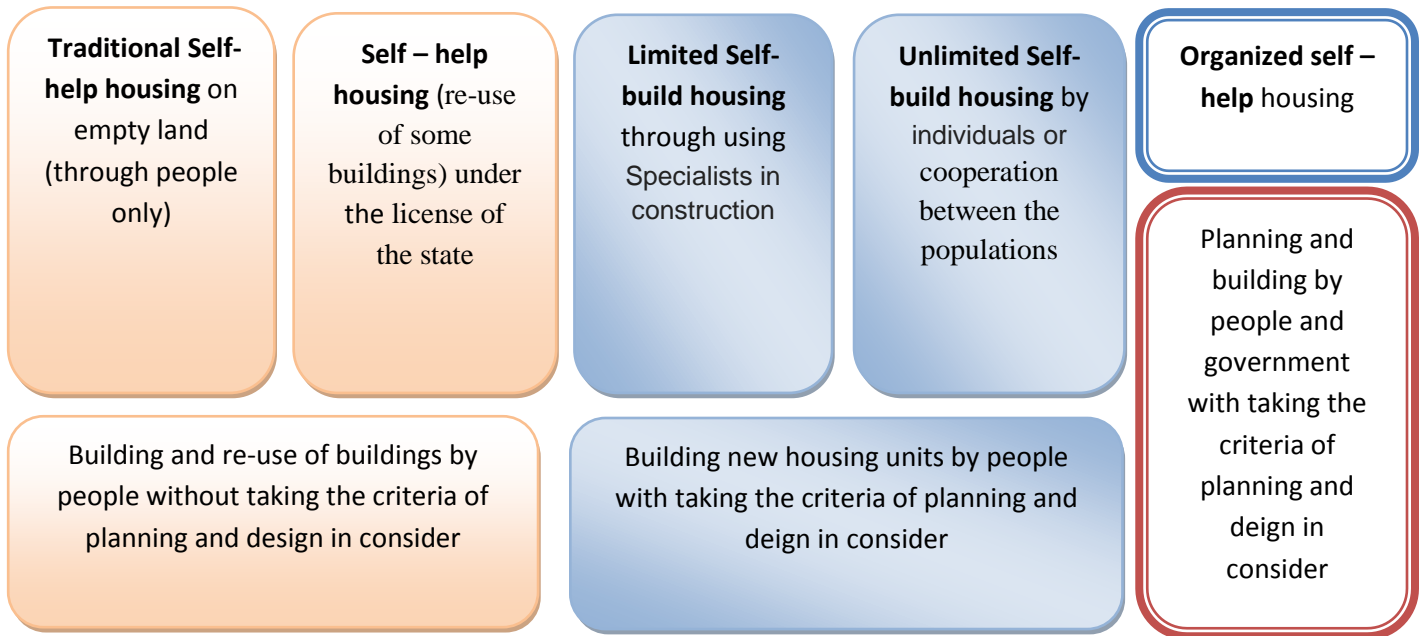
The definition of *self-help housing* concept is different from place to place according to the role of the population and the government in providing housing units and in addition to the application ratio of planning and design standards in construction process. Many terms appeared such as *traditional self-help housing* term which refers to the contribution of individuals in building unplanned housing units without application current planning and design regulations, this approach leads to appear informal areas without any government intervention (Wilson, 2015).

In other countries such as south Africa ,the term of *self-help housing* is used when the population reuse of some old buildings to be suitable for residential use by making some modifications under the license of the state and after taking some construction training to build their houses efficiently , but also this type lacks of planning and design requirements. (Homes and Communities Agency, 2010)

The second term is *self-build housing* which means that the population participates with the government to provide suitable housing units for them. These participations take many form like *limited self-build* in which the population use engineers , contractors or developers to complete the construction process on time and according specific building criteria , in addition to *unlimited participation* through cooperation between the population in the project to do most building tasks for reducing the costs to minimum levels (Merrett ,1988) . *The self-build housing* type differs from *self-help housing* in the existence of the government intervention and the organization of participatory process to get formal residential areas.

Furthermore the self-build housing focuses on the stage of building only without participation in other process such as design, planning and management .The paper deals with (organized self -help housing) which concerns with the involvement of the population at various stages of planning and design to ensure that their requirements are met within the legal and regulatory framework and the support from the state to achieve formal residential areas.

Figure 1 shows the different terms of self-help housing approach according to the degree of commitment with application legislative and regulatory frameworks during building process:



**Figure 1.** Different terms of self-help housing approach according to the degree of legislative and regulatory frameworks commitment in building process (Source: Author)

### 3. The types of organized self-help housing projects

The organized self-help housing approach includes a number of tasks such as (selecting the appropriate location -planning -design- building- maintenance and management ) in which the residents cooperate with the government to reach their needs at the lowest possible cost. These tasks are accomplished through the population, government and other parties according to the level of government support and the ability of the population to contribute in the construction process which identify the main types of organized self-help housing as shown in Table1 and Table 2.

### 4. The important of self- help housing program in low-cost housing development

Self –help housing program plays an important role in the development of low –cost housing projects. The following points illustrate its advantages and disadvantages in the field of housing sector (Mullins, 2010; Teasdale et al., 2010)

#### 4.1. Advantage

- Cover a part of low income housing demand.
- Provide types of housing units which are convenient with the needs of low-income groups.
- Reduce the design, construction and implementation costs which are incurred by the state.
- No wastes for financial resources because the numbers of housing units which have been implemented are equal the numbers of housing units demand.

- Contribution of government support in reducing the burden of construction costs on low-income group.

**Table 1.** The main types of organized self-help housing projects and its characteristics

Types of organized Self-help housing	The main characteristics
<b>Type 1 ( using contractor)</b>	<ul style="list-style-type: none"> <li>▪ The population select suitable land for building their houses</li> <li>▪ Obtain the building permit from the concerned authorities.</li> <li>▪ Manage the design process with a specialized architect.</li> <li>▪ Use contractor for the implementation process.</li> <li>▪ Contribute in some simple business to reduce costs.</li> </ul>
<b>Type 2 ( using Contracting companies)</b>	<ul style="list-style-type: none"> <li>▪ Select the suitable land for their houses.</li> <li>▪ Use engineering companies that provide (designs of housing units – ready- made walls – support..), these companies are responsible for obtaining the approvals of designs before implementation.</li> <li>▪ Population participate with companies to finish the external and internal building works in minimum time and cost.</li> </ul>
<b>Type 3 ( using developers from sites)</b>	<ul style="list-style-type: none"> <li>▪ Select only the suitable land for homes.</li> <li>▪ Developers do all the work from design to implementation.</li> <li>▪ This type is very expensive for the population.</li> </ul>
<b>Type 4 (Building through group of people )</b>	<ul style="list-style-type: none"> <li>▪ Each resident chooses his house location.</li> <li>▪ There is cooperation between residents to build their houses and benefit from their experience to reduce the cost and the time.</li> </ul>
<b>Type 5 (Full development for the residential area through community cooperation)</b>	<ul style="list-style-type: none"> <li>▪ Group of population participate in buying large land plots to reduce the price of land and the cost of infrastructure supply.</li> <li>▪ Population Participate in design, construction, implementation. Maintenance and management.</li> </ul>
<b>Type 6 ( without using contractor)</b>	<ul style="list-style-type: none"> <li>▪ Select the suitable land for their houses</li> <li>▪ Manage all steps of building process (design – building permit – construction )</li> <li>▪ Responsible for building according regulation.</li> <li>▪ Build their houses themselves without having contractor to save costs.</li> <li>▪ Use Traditional building systems.</li> </ul>

(Source: Centre for Housing Policy, 2015)

#### 4.2. Disadvantage

- The relatively high prices of building materials that exceed the financial possibilities of low incomes.
- Lack of sufficient experience for population to build their houses themselves, which led to construct inappropriate houses.
- Reduce in the role of the government, especially in management and maintenance this type of residential area.

- The interest on loans is not commensurate with low-incomes.

**Table 2.** The role of population, government and others in all types of organized self-help housing projects during the stages of building

<b>Management and maintenance</b>	By government			By people		
<b>Funding stage</b>	Participate with government					By people
<b>Implementation stage</b>	Participate with other					By people
<b>Planning and design stage</b>	Participate with government					
<b>Select suitable land</b>	By people					
<b>Stage of building</b>	( using contractor)	(using companies)	( using developers from sites)	<b>Building through group of people )</b>	<b>(Full development through community cooperation)</b>	<b>( without using contractor)</b>
<b>Types of OSHHP</b>						

(Source: Author)

### 5. mechanisms of applying organized self-help program in new cities

Many international experiences of countries in this field such as (England , United states , South Africa and Southeast Asia indicated that the most important mechanisms needed to achieve successful projects of self-help low-cost housing are (the optimal choice for beneficiaries who are able to build, manage and bear the costs - providing cheap land - supplying land with infrastructure and services - well site planning - Provide the appropriate funding to support the population - involvement of the population in the planning and design processes - organization the community to implement the project in a compatible way with its goals. The following points illustrate the detailed mechanisms in all stages of self-help housing project (Archer, 2009 ; Building Societies Association, 2011; Dahmono et al., 1975; Duncan and Rowe 1993; Ferguson, 1999; Gilbert, 2000 ; Harris, 1998 ; Kodiat and Djuwanda ,1975; Parvin et al.,2011; Wilson, 2015 ; Wallace et al., 2013 ; Tipple, 1999 ; Vanderhoven, 2010):

#### 5.1. Stage of planning for self- help housing area:

The planning stage includes a set of mechanisms which will attract the population to choose the self-help housing program compared to other programs, these mechanisms are:

### 5.1.1. Provide suitable land for this type of low- income housing projects

- Land allocation for self –build projects at suitable prices without the process of speculation which raises land prices.
- Involve the private sector in the process of land provision for people through an agreement with the government to allocate a percentage of their land for self –help housing projects, in return for granting them part of land for investment projects. This process needs control from the government on the location and price of land to achieve the low-income groups needs (World Bank , 2009)
- Provision of land with facilities, infrastructure, road networks and public transport.
- Diversification of land plots areas according to the needs of individuals or groups to cooperate in building their houses.
- Allow the residents to build their houses on the land of the state without paying its price or allow them to rent the land instead of purchase it to reduce the total cost of housing units.

### 5.1.2. Identification the needs of low-income group and preparing urban plans and designs

- Put the specific criteria for selection the beneficiaries from this type of project such as (level of income – age – job – commitment in project implementation).
- Procedure the Interviews and questionnaires with the population to determine their actual needs and implement their participation in all stages of planning and design housing units.
- Put the specific and easy planning and design requirements such as (Percentage of building, building height and number of rooms...) that achieve low cost for the residential area and correspond with the financial potential and the ability of the population to implement them.
- Introduce alternatives of cheap construction methods to enable residents to build their homes easily (Adedeji, 2004).
- Complete the planning of residential area and land division in short time (during four weeks) to cover the urgent needs and avoid the changes in construction materials prices.
- Train some engineers to plan the self-build areas and to provide the necessary guidance for population to develop their skills in construction.
- Propose suitable areas of land to build housing units that meet the living needs of the population.

## 5.2. Stage of implementation self- help housing project

### 5.2.1. providing facilities to finance the project

Finance is one of the main pillars of activating the self-help housing program in new cities, which needs some mechanisms to solve its obstacles in the housing sector such as:

- Providing financing institutions with suitable loan systems for low-income group to help them for bearing the costs of construction.



- Coordination between the government agencies and financing institutions to fund the building process at the same time of distributing the land to the population without any delay.
- Development the incentives and guarantees to participate the lenders in low-income housing projects.
- The state provides additional loans with small interest for population to purchase the land and build their houses, and they pay it again through instalments after completing the building process.
- Activating the role of developers or investors to buy the land from the state and bear the cost of building and then they sold housing units to the population in return for instalments with an appropriate interest. This method is used in the case of low government funding.
- Give the residents enough time to prepare the money either to buy the land plots or to start building their houses. In addition to give the enough time to pay the instalments of loans during the project implementation stages.
- Connect the Financing and payment systems with the percentage of completing the building process.
- Cooperate with housing associations and institutions which concerned with the sustainability of residential areas for supporting the population to complete the construction process in a sustainable way.
- Providing non-financial incentives to assistant the population for building their homes at the lowest cost such as (exemption from the extending costs of networks and utilities - cheap building materials - Tax exemptions - reduce the price of land plots in the case of cooperation of groups).

### 5.2.2. Providing support and assistance

The population who use the self-help housing method need the support from the government and some other institutions due to the lack of enough experience in construction process. These mechanisms of support are (Vanderhoven and Archer, 2010)

- Develop the skills of the population through training courses in short time to learn how to build houses and how to implement the requirements of planning and design without any mistakes.
- Provide advisory centers of engineering, Financing and technical to clarify the right steps which needed to complete the project in less time and cost.
- Establish a website that clarifies the project information, available land plots and the institutions that must be dealt with to purchase the land and obtain the building permit.

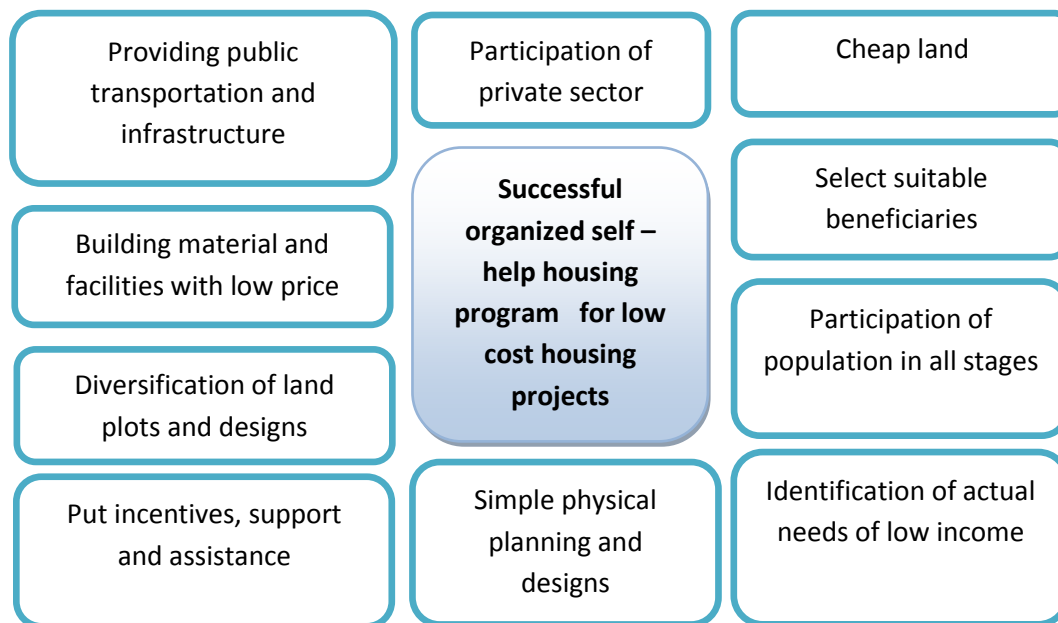
Figure 2 shows the main requirements to achieve successful organized self-help housing program for low cost housing project.

## 6. The experience of application self-help housing program in the new Egyptian cities

### 6.1. The development of self-help housing concept for low-cost housing in the new Egyptian cities



The government has adopted the provision of low-cost housing since the 1940s as a result of increasing housing demand of low-income group which exceeds the existing the total housing supply in this period. The first type of low-cost housing is the housing of industrial workers, popular housing (alshaby housing) and full complete housing units which was provided by government during the period of 1954 to 1965. (Abdel Ghany, 2009)



**Figure 2.** The main requirements for successful organized self– help housing program (Source: Author)

This type of housing appeared in many urban areas such as Imbaba and Kit Kat with an area of 65 m<sup>2</sup> for each housing units, but it had encountered many problems such as the relative increase in housing units prices and its failure to meet the needs people which prompt the population to make changes in the interior design of housing unit to meet their requirements.

The period from 1965 until 1982 was characterized by development the informal and old areas through applied the ideas of (site and services – core housing – incomplete housing units) with the process of population evacuation and removing old area, in addition to helping the population in rebuilding their homes or building new houses in new areas with the financial support from the state and the provision of services and infrastructure for them (Ibrahim, 1987).

The main projects in this period are (South-west district in Assiut with the support of World Bank in 1978 – Al Salam district in Ismailia in 1978 - Helwan in Cairo with the support of USAID in 1980 – the fourth Neighbourhood of 10th of Ramadan) (Abdel-Ghany, 2009).

In the year of 1982 , the state followed the policy of providing low-cost housing in new cities through the type of Youth and Cooperative Housing, but with the decreasing of government funding and the necessity to meet the actual needs of population , the state turned to implement of some programs such as self-help

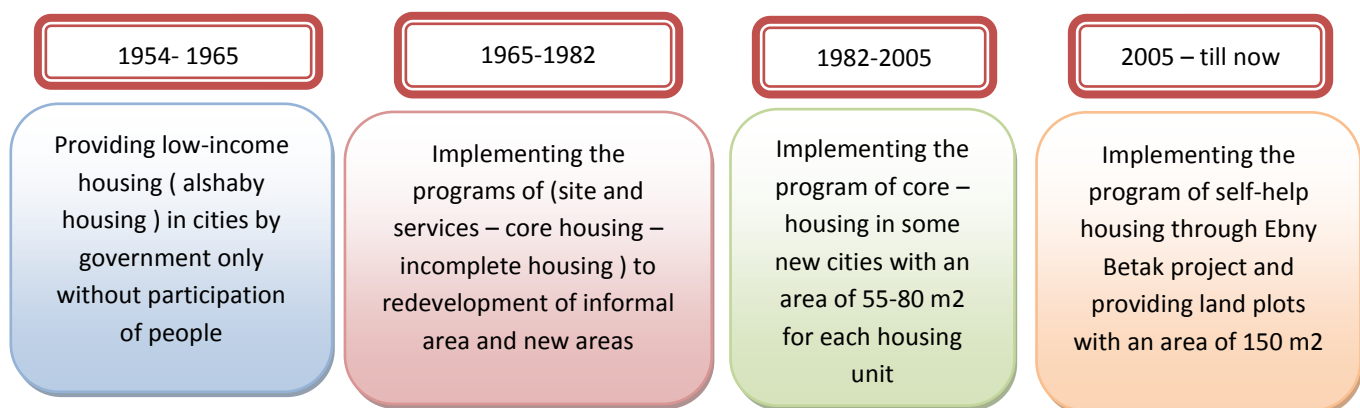
housing program which began with offering incomplete low -income housing units ( 55- 80 m<sup>2</sup>) ( core housing concept) without an internal division except the kitchen and bathroom and the residents complete the rest of the housing unit with the help of available loans and according to the planning and building requirements and their future needs. (Samy and Norelisiin, 2004)

Despite the success of core housing concept in the field of low income housing development whether in existing or new areas , it faced some challenges such as ( the differences in designs according to the method of building for each resident – lack of sufficient experience of population in the field of building houses ) (Ghada, 2009)

Therefore this idea was developed by Mubarak National Housing Project in 2005 which targeted providing 500.000 housing units in new cities over a period of six years at a rate of 85.000 units annually through seven types of projects (Provision of titling system for housing units with an area 63 m<sup>2</sup>- land granting for low-income people to build their houses themselves which called Ebny Betak project with an area of land 150 m<sup>2</sup>- sale land for investors to build housing units with an area of 63m<sup>2</sup> - Bet al aleala project and provision of titling system for housing units with an area 63 m<sup>2</sup>- Awla bel-re'aya” project with an area 42 m<sup>2</sup> for housing unit - providing rental system for housing units with an area 63 m<sup>2</sup>- providing titling system in desert with an area 63 m<sup>2</sup> for rural housing unit )

Ebny Betak project is the second type of projects submitted by the National Housing Project which refers to organized self- help housing between people and government where the government provides the land with basic facilities only and the residents (whose ages between 20-40 years) are responsible for (building , financing , management ) within the framework of some mechanisms during the stages of planning, design and implementation such as (selection suitable location – putting specific designs for each residential area – providing available support from state and funding destinations) to complete their houses in specified period.( Ministry of Housing, 2008).

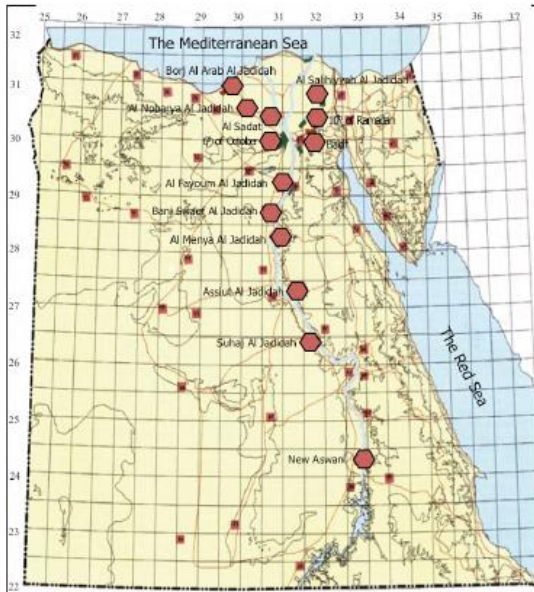
The project still applied in new cities, but it has not achieved its goals towards covering housing demand of low – income groups due to their inability to bear the high cost of building process. Figure 3 shows the development of self-help housing concept from 1940s till now.



**Figure 3.** Development of self- help housing concept for providing low-cost housing (Source: Author)

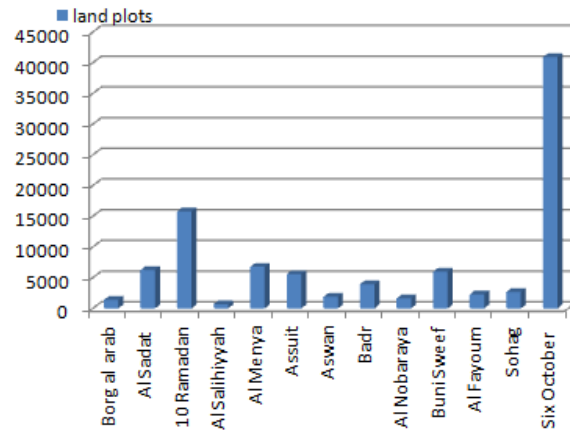
### 6.2. Ebny Betak project in new Egyptian cities

The government distributed about 90.000 land plots (34 location) in 13 new cities such as (six October , 10th of Ramadan, New Salhiya, Nubaria, Sadat, Badr, New Burj Al Arab, New Fayoum, New Beni Suef, New Minia, New Assiut, Sohag and New Aswan) as shown in Figures 4 and 5 (Ministry of Housing, 2008).



**Figure 4.** the location of Ebny Betak project in new cities

(Source: Ministry of Housing, Utilities, and Urban Development, 2008)



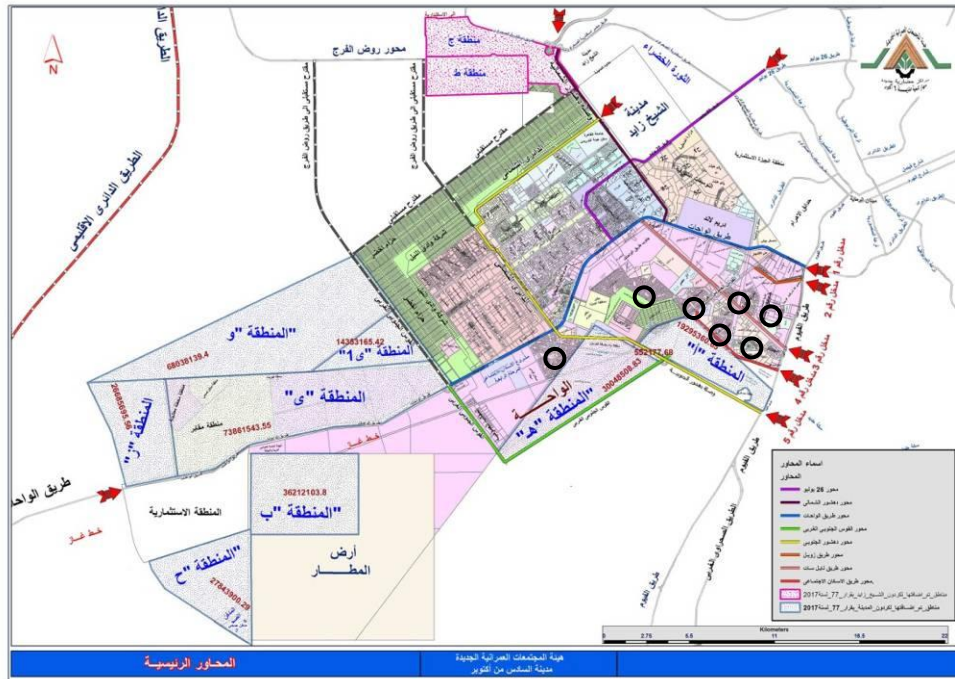
**Figure 5.** the Proposed number of land plots in new cities for Ebny Betak project

The total area of each land plot is 150m<sup>2</sup> and permitted for population to build three housing units (one in ground floor and addition to the first and second floors) on the ratio of 50% of land plot area. Therefore, the total proposed number of housing units in the project is about 270 .000 housing units for about one million people.

Six October city is the first city that The project has been implemented in it, and the largest number of housing units concentrated in it (almost 43% of total housing units).Consequently its study will help in reaching the pros and cons of applicable mechanisms to develop it in the future projects and achieve successful organized selp-help program for low cost housing.

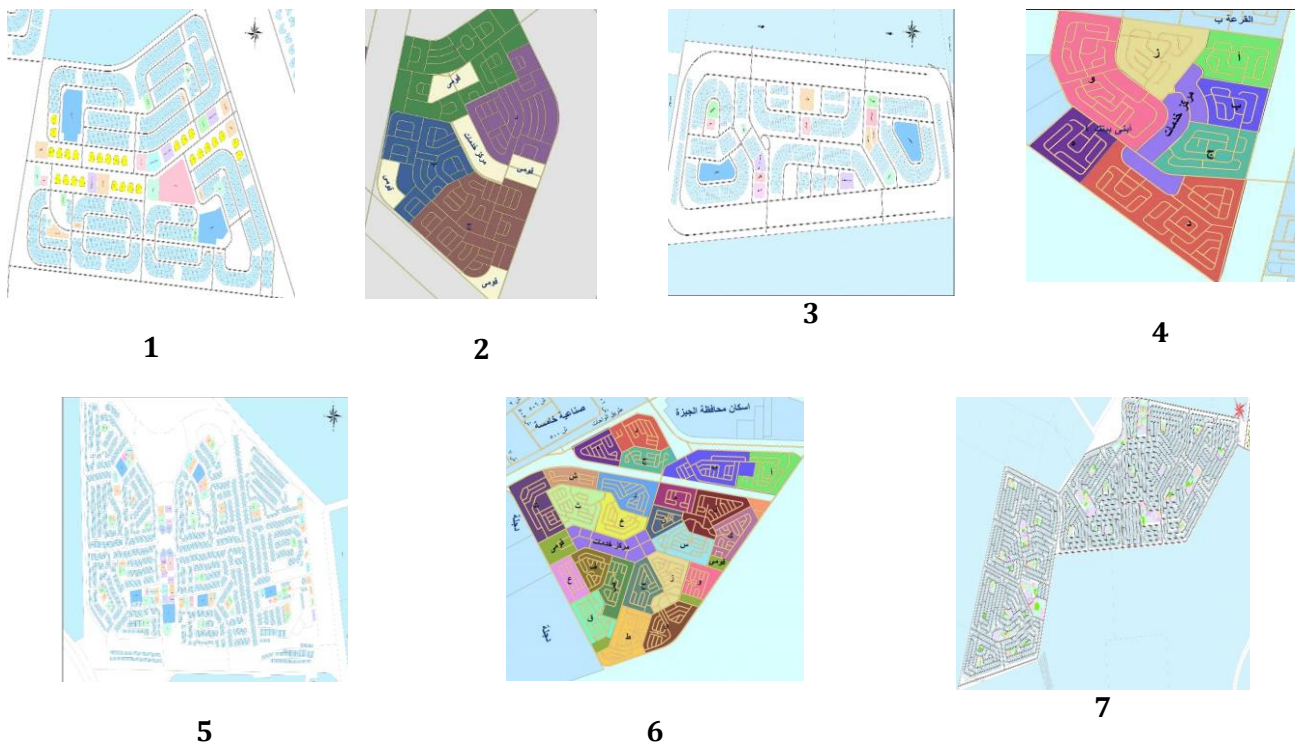
### 6.3. The main mechanisms for application Ebny Betak project in six October city

Ebny Betak project is located in the southern part of Six October city. The total area of the project is about 4517 acre and includes about 40900 land plot with an area of 150 m<sup>2</sup> for each one. Theses plots were distributed in seven separate sites south the oasis road from the entrance of Fayoum road in the east side to the fourth stage of social housing project in the west side as shown in Figures 5 and 7 (Ministry of Housing, 2012).



○ Location of seven Ebny Betak project areas

**Figure 6.** Location of Ebny Betak project in Six October city  
(Source: Ministry of Housing, Utilities, and Urban Development, 2012)



**Figure 7.** The seven separate sites of Ebny Betak project in Six October city (in order) (Source: Ministry of Housing, Utilities, and Urban Development, 2012)



The project was initially carried out in the first and second location which the percentage of completed building has reached to 100 % in them. These locations were used in this paper to monitor the mechanisms which were applied during all stages of project and identify their advantages and disadvantages through the results of the questions which were directed to the population beside the reports of the Ministry of Housing in 2008 as shown in the following points (Ministry of Housing, 2008), (World Bank and USAID 2007):

### 6.3.1. *The main mechanisms in the stage of (pre-design and planning)*

The pre -planning stage is the preparatory stage which focuses on selection suitable sites for project and identifying the characteristics of project beneficiaries in order to ensure the success of the project, the government use a set of mechanisms in this stage such as (Ministry of Housing, 2008):

- Selection low-price land to be sold for low-income groups with the price of 70 pound per meter.
- Identification of target groups and selection of eligible citizens to participate in the project who meet the following conditions:

(The age is not less than 20 years and not more than 40 years at the time of land plot reservation – do not own or lease any other housing unit and do not receive any housing unit from government agency before – the maximum limit of the average monthly income is 1000 LE per person and 1500 LE for the family- the citizen has never taken any cooperative loan before – The citizen must be a resident of the governorate where he / she is applying for the land plot).

### 6.3.2. *The main mechanisms in the stage of planning and design*

This stage includes everything related to the preparation of plans and designs that show the distribution of land plots and the models of housing units which people use it as a guide, the following points show the main mechanisms in this stage (Amcham.2003):

- The ministry of housing has contracted with the Egyptian universities and Housing & Building National research center to prepare the physical planning that show the locations of (land plots - services - infrastructure networks – open spaces - method of assembling buildings and spaces – percentage of building – building heights ...), As well as prepare the architectural drawings that illustrate architectural models of residential units.
- There are three housing design models area applied in different new cities , the government select two of them for the project in Six October ( for internal and corner buildings in the block and as shown in Figure 8.
  - Providing land plots with an area 150 m<sup>2</sup> and its dimensions (8.5 m \* 17.5 m).
  - The permitted percentage of building is 50% of the total land plot area.
  - The government putted some general rules such as (Allocation only one piece of land for each citizen and his family - The annexation of land plots is not permitted).



Housing design model of ground and first floor in internal building

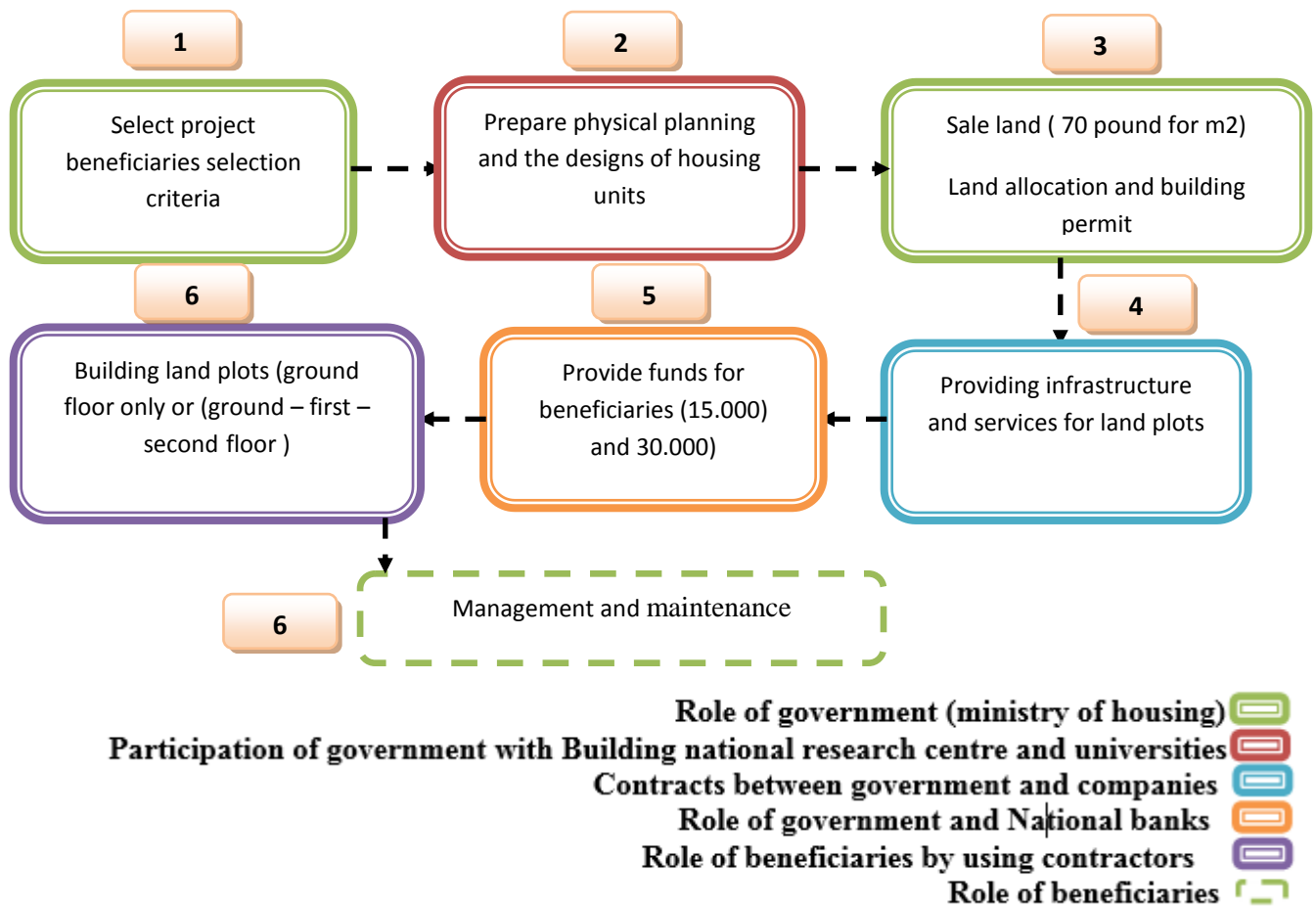
Housing design model of ground and first floor in corner buildings

**Figure 8.** Housing design models in internal and corner building (Source: Ministry of Housing, Utilities, and Urban Development, 2008)

### 6.3.3. The main mechanisms in the stage of funding and implementation

- The land plots were sold at the price of 70 pound per meter (10.500 pounds for the total area of land plot). The beneficiary of land plot pays 10% of the total price and the rest on seven equal annual instalments without interest. The first instalment after year from receiving the land (after they finish the building of the ground floor).
- The construction process starts after three months from receiving the land plot.
- The architectural and structural drawings are provided free for citizens.
- The building permit for the ground floor is extracted within four months from the land plot allocation for beneficiary and the permit fees are about 300 LE.
- The citizen gets the financial support (15,000 EGP) from the Ministry of Housing to build the ground floor only. This support is disbursed in three phases, The first financial support (5000 pounds) after completion of drilling ,foundations and casting of columns for the ground floor (after six months from the construction process began), the second support (5000 pounds) after completion of pouring the roof of the ground floor (after three months from the end of previous phase) ,the final support (5000 pounds) after completion the external work for the ground floor ( after three months from the end of second phase) . The first and second floors are built on the private expense of the population.
- In the case of delay in implementation for any of previous phases for three months, the residents have no right to get any support for the late phase.
- The land will be withdrawn from the beneficiary if the construction is not completed within the specified period.
- Some companies such as Ezz Steel Company has provided support (ton of iron) for the first 30 thousand beneficiaries of Ebny Betak project.

- The government puts additional incentives for beneficiaries to reduce their suffering and give them sufficient time to complete the construction with the highest efficiency. These incentives include : (give the time to pay the first instalment of land plot price after (year and a half to two year ) from the time of receiving the land instead of one year and the citizen will be exempted from payment the other instalments as long as he / she complete the building of the ground, first and second floors before the specified period – The citizen receives a support ( 15,000 pounds) for each floor ( first and second) in the case of selling house and giving it to another low-income citizen that meets the requirements of National Housing Project - Increase the deadline of implementation the three phases of project to be ( 7 months for first phase instead of 6 months – 11 months for second phase instead of 9 months- 15 months for third phase instead of 12 months ) from the time of receiving the land plot - The beneficiary has the right to sell his / her house or lease it in the case of completion the building of the ground, first and second floors within the specified period. The sale is done after five years from the time of completion the construction and after paying all the specified costs.



**Figure 9.** Mechanisms of implementation Ebny Betak project and the roles of different members (Source: Author)



- The National banks provide a loan of 30.000 thousand pounds which will be paid over 20 years. This loan reaches to more than 50.000 pounds with the interest in the time of payment.
- The government undertakes to supply basic infrastructure in project site before the beneficiaries start building their houses.
- The government uses contractors and private companies to build services and commercial areas inside the residential area.

Figure 9 shows the main mechanisms of implementation Ebny Betak project and the roles of different members such as (government – banks – universities and research centres - contractors and construction companies – beneficiaries...).

#### 6.4. The main Challenges during the stages of Ebny Betak project in Six October

The project of Ebny Betak faced some challenges from the stage of pre-planning and design to the stage of implementation as shown in Table 3 which the beneficiaries referred to them through the questionnaire (Appendix) which included the questions about ( identification the appropriateness of land plots and designs for their needs - their evaluation of the provided support and whether it is sufficient to complete the construction on time or not -the most important obstacles they encountered during the construction process as well as their suggestions for the development of the project to achieve its goals in provision of affordable low cost housing units for low-income.

**Table 3.** The main challenges of Ebny Betak project in Six October

The stages of project	Challenges
<b>the stage of ( pre-design and planning )</b>	<ul style="list-style-type: none"> <li>▪ Selecting the location of the Ebny Betk project far from the areas of works and services, Furthermore it is not supported by the public transport network.</li> <li>▪ Lack of compatibility between the beneficiaries selection criteria and the high financial requirements for building housing units.</li> <li>▪ There is no determination of low-income group needs before the stage of planning and design the project.</li> </ul>
<b>the stage of (planning and design)</b>	<ul style="list-style-type: none"> <li>▪ The residents' views were not taken in consider during the stage of planning and design.</li> <li>▪ The residents don't choose their land plots or the models of residential units but the selection process is done randomly.</li> <li>▪ Lack of the flexibility in design to meet the future needs of the population.</li> <li>▪ The percentage of building on land plot (50%) is very low and does not provide adequate space for housing unit.</li> <li>▪ Housing units models are almost constant in most locations of projects and their differences don't reflect the needs of the population.</li> </ul>
<b>The stage of (Funding and implementation)</b>	<ul style="list-style-type: none"> <li>▪ The project did not achieve its goal of enabling the residents to build their own houses because the lack of their experience in construction process. Therefore the project implementation depended on the contractors and the</li> </ul>

	<p>role of residents is supervision, management and maintenance only.</p> <ul style="list-style-type: none"> <li>▪ The government did not provide the construction facilities at suitable price for beneficiaries such as (water – materials of building); therefore the construction cost was raised to inappropriate limits.</li> <li>▪ The interest on the loan which provided by National bank (20.000 over 20 years) isn't commensurate with low-income of beneficiaries.</li> <li>▪ High cost of building the ground floor, which UP to 45 thousand pounds and exceeds the provided support from the government.</li> <li>▪ There are no specific contractors for the project, but each resident select his own contractor which led to implement the project with different perspectives.</li> <li>▪ EGYCO Company did not complete the works of services and infrastructure in some areas of Ebny Betak project, although the construction process has been completed. This led to implement the infrastructure networks above the ground level.</li> <li>▪ Lack of coordination between population and construction companies to implement the infrastructure before the housing units.</li> <li>▪ Absence of security in project location which led to steal the building materials and tools from the beneficiaries.</li> <li>▪ Implementation of infrastructure networks in some areas far from houses.</li> <li>▪ Some incentives are directed to support non-target groups (middle income group) through the exemption from payment the rest instalments for beneficiaries who can build first and second floors during one year.</li> <li>▪ Financing systems are not appropriate with the financial possibilities of low-income groups and available time for construction houses.</li> <li>▪ Some beneficiaries didn't live in their houses after building it due to the lack of services and facilities in the residential area.</li> </ul>
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(Source: Author according to the results of questionnaire questions)

## 7. Conclusion and recommendations

This paper discussed the necessary mechanisms for implementation the self-help housing program in new cities according to the successful countries experiences in this field. These mechanisms appear during the stages of planning, design and implementation in which the low- income groups can obtain low-cost houses and meet their living needs in these housing units. The following points show the main mechanisms in each stage of project:

### 7.1. Conclusion

- The *mechanisms in the stage of pre -planning and design*: (selection suitable site for the project near the location of work and services - Providing affordable land with infrastructure and the main road network - determining the criterias for selecting beneficiaries to ensure that all support reach to low income group only - Identifying the main needs of low-income groups before planning the residential area and design the housing units).

- The *mechanisms in the stage of planning and design*: (putting the simple requirements for the project to make the implementation easily – determining the suitable area for land plots and housing units to cover the population needs - involvement the population in the planning and design process –complete the planning and design in the shortest possible time).
- The *mechanisms in the stage of implementation*: ( Providing financial support from the government - Partnership with financial institutions to support the population during the construction stages – Involvement the private sector to implement the projects of services and infrastructure - Training the population on how to build their houses - Providing technical support during the project stages – using specific contractors to complete the construction efficiently – providing the materials of construction at low price).

## 7.2. Recommendations

The self-help housing experiment in Egypt has achieved some of the previous mechanisms and has failed to implement the others.

Therefore, the paper puts some mechanisms to solve the problem of Ebny Betak project and development it for providing low-cost housing. These mechanisms are ( choice the location of the project near the road network and public transportation to facilitate the movement of the population to and from the work areas - Involve the population in the planning and design stage to meet their requirements from residential area and housing unit - Provision of infrastructure and services before the population build their housing- Providing the contractors by the government to implement unified homes without any differences - Increase the time limit for construction.- Increase the percentage of construction on the land plots to be more than 50% - Providing different models for housing units to satisfy the different needs of the population. Providing special loans for low income groups with the lowest interest rate - Provide the materials and requirements of construction at the lowest possible price in addition to achieve the security in residential area to prevent building materials from stealing – application non-ownership systems like rent system for who can't afford the construction cost – coordination between the roles of different parties (government - population - construction companies - private sector) to make the implementation according to the priorities. Activate the State's oversight role to ensure that the project achieves its objectives).

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### Appendix: The questionnaire for beneficiaries of Ebny Betak project

The aim of the questionnaire

The questionnaire is addressed to the beneficiaries of Ebny Betak project in the first and second area to know their views about the evaluation of mechanisms which used for implementation the project in Six October.

Personal information	
Name:..... Age:..... Social status:..... Place of birth:.....	Job:..... Education:..... Family size:..... Income:.....
Land plot information	
Zone number:..... Plot number:..... Total area of plot:.....	Land plot price:..... Date of receipt the land:..... Date of building completion:.....
Mechanisms of pre- planning stage	
Why you choose the project of Ebny to buy land plot in it? ..... .....	
Is the location of land plot appropriate with the sites of works and services? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Has your opinion been taken in the choosing the land plot location or housing unit design? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Does the total land price fit with your income level? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Mechanisms of planning and design stage	
Are the infrastructure and services available in the project location? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Do the area and the design of housing unit meet your living needs? Yes <input type="checkbox"/> No <input type="checkbox"/> If NO (why) ..... .....	
Mechanisms of Funding and implementation	
Is the time limit for construction suitable for your financial potential? Yes <input type="checkbox"/> No <input type="checkbox"/> If NO (why) ..... .....	

Are there cheap building materials available in the site? Yes <input type="checkbox"/> No <input type="checkbox"/>
Have you received technical support from the state to oversee on the construction process? Yes <input type="checkbox"/> No <input type="checkbox"/>
Does the provided financial support from the State and the banks contribute in completion the construction within the specified period? Yes <input type="checkbox"/> No <input type="checkbox"/> If NO (why) .....
Is the percentage of interest on the provided loans appropriate with the level of income? Yes <input type="checkbox"/> No <input type="checkbox"/> If NO (why) .....
Has the construction been completed within the specified period of time? Yes <input type="checkbox"/> No <input type="checkbox"/> If NO (why) .....
Have you received any exemptions or incentives from the state during the construction period? Yes <input type="checkbox"/> No <input type="checkbox"/> If yes (what) .....
Is there control from the state during the construction period? Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Problems and most important suggestions</b>
What are the most important obstacles which you faced in the project? ..... ..... .....
What are your suggestions to develop the project of Ebny Betak? ..... ..... .....