World Journal of Environmental Biosciences

Available Online at: **www.environmentaljournals.org**

Volume 6, Supplementary: 18-25

ISSN 2277- 8047

An Analysis of Housing Planning with an Approach to Sustainable urban development (Case Study: New City of Ramshar)

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ABSTRACT

In this age, housing is one of the most significant issues that human beings constantly deal with. Mankind has always attempted to solve this problem and to find a proper and rational answer for it. By overviewing the housing conditions in various societies, it becomes clear that almost no country has been able to completely eliminate the housing problems in their society. The necessity of including housing and housing planning in the respect of sustainable urban development in national, regional and urban plans is now felt more than ever. Authorities shall use planning techniques and knowledge in order to solve the problems that citizens are facing and to ultimately provide a peaceful and green environment in which safety, ease and welfare of the citizens are guaranteed. The present study presents a brief overview of the theoretical and practical literature of sustainable urban development and an evaluation of the status of sustainability in the complex of residential regions and neighborhoods of the new city of Ramshar by reviewing its housing conditions. This study aims to analyze the housing planning of the new city of Ramshar with an approach to sustainable urban development. This research is an applied – development research and the research method is descriptive – analytical. By taking into account the available information, especially those obtained from field researches, it has been attempted to review and recognize the housing condition of the new city of Ramshar. The results obtained from this research indicate that for the housing planning and management to be successful in general, depends on observing preliminary planning principles more than anything. At the end, some recommendations have been presented regarding housing program of the new city of Ramshar.

Keywords: *Housing Planning, Sustainable Urban Development, New City of Ramshar*

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INTRODUCTION

Housing is one of the most principal and significant issues in a set of economic, demographic and social studies. Absence of a solution for this problem and lack of knowledge about this issue can have irreversible impacts on the entire society and system (Ahari, 1988: 89). The housing problem is an issue that nowadays many each and every country in the whole world is dealing with; although their struggle might differ from one another in proportion with their status. In developed countries, housing is a dimension of social welfare and housing development programs in these countries are focused on qualitative improvement; while in our country, housing is considered to be a basic need and meeting this need is in line with clothes and food supply (Ghazi, 1995: 93). The concept of housing includes the entire residential environment as well as physical space and it is formed of a board issue with a variety of dimensions that exceed a physical shelter (Knapp, 1982: 35). It is in one's house that the basic needs of human being are fulfilled in such a way that the quality of their lives are influenced and it can be associated with the accurate guarantee of human beings (Isilk, 2007; Maliene, 2008). Therefore, the necessity of including housing and housing planning in the respect of sustainable urban development in national, regional and urban plans is now felt more than ever. Authorities shall use planning techniques and knowledge in order to solve the problems that citizens are facing and to ultimately provide a peaceful and green environment in which safety, ease and welfare of the citizens are guaranteed.

For this purpose, the present study presents a brief overview of the theoretical and practical literature of sustainable urban development and an evaluation of the status of sustainability in the complex of residential regions and neighborhoods of the new city of Ramshar by reviewing its housing conditions and by using these indexes and chosen biosocial indexes. Then, by gaining knowledge about the socioeconomic, and also natural and cultural structures of this city and its potential, the basic need that is housing could be fulfilled until 2021 and finally, a proper strategy and program associated with obtaining the proper housing will be presented for reaching sustainable urban development.

1. Research method

Given the nature of this subject, this research has a descriptive – analytical approach. In this study, first the housing characteristics of the new city of Ramshar will be specified in the frame of a program and then, by evaluating the current status of housing, a proper strategy and a rational plan for housing of the new city of Ramshar will be expressed.

2. Introducing the studied area

Ramshar is a new city in Sistan va Baloochestan province which has been formed due to the suggestions presented by the studies focused on Sistan's regional plan (approved by Iran's Supreme Council of Architecture and Urban Planning in 1990). The inclusive plan of the new city of Ramshar approved in 2000 by Iran's Supreme Council of Architecture and Urban Planning. This new city is located 35 kilometers from Zabol city in the Zabol-Zahedan road. This city is located at the geographical coordinates of a latitude of 30º45´N and a longitude of 61º25´E and at a 495-meter average elevation above sea level. This city has an area of 1200 hectares and its northern neighbor is Lootak plain and its southern neighbor is Ghale Rostam plain, and from west, it is adjacent to the shores of Hamoon lake (Haji Hosseini, 2005: 1 and 5).

Figure 1 – a detailed design of the new city of Ramshar (City and House Consulting Engineers, 2000)

Figure 2 – a view of the new city of Ramshar (authors, 2016)

3. Theoretical principles

The word "housing" is in fact associated with becoming at peace after movement and the inner peace and ease of the self. "Maskan", in Persian language is the past participle of the word "Saken", meaning a place of peace and habitat. Therefore, the most significant advantage and use of housing is the comfort and peacefulness of people living in it which includes both the physical and the mental aspects of this ease (Inanloo, 2001: 11). In the first conference on human habitat, held in Vancouver, Canada in 1976, the first international habitat agenda rose for the first time. It was in this conference, the world's attention became focused on the human habitat issue and its significance. This issue was not seriously discussed up until 1976. It was even of less significance in national programs and most countries didn't have official organizations that would be responsible for such matter. However, the second international conference on human habitat held in Istanbul, Turkey, in 1996, aimed to discuss two issues: "providing proper accommodation for everyone" and "sustainable development of urban habitat" in a world moving towards urbanization. The final document of this conference, which is called the habitat agenda, suggested policies that could be made and actions that could be taken in the respect of directing national and international efforts that shall be made in the next two decades in order to meet these two ends (Hekmatnia, 2004: 35). Nowadays, the word "sustainability" is broadly used for describing a world in which human and natural systems could coexist for a long period of time. Sustainable development, with its complex principles, has been reviewed in world literature for years. In terms of background, "sustainable development" and "eco-development" were mentioned by "Sachs", UNDEP and World Conservation Union in early 1970s. Despite the fact that the concept of sustainable development was used in early 1970s about environment and development at the time of "Cocoyoc declaration", but the application of this term for the first time is traced back to the middle of the aforementioned decade when "Barbara Ward" used it (Faraji Sabokbar, 2010: 136). In the international conference on United Nation Development and Environment (1987), sustainable development was defined as a process that could meet the current needs without destroying the potentials and abilities of the future generation (Tosun, 2001: 289-303). In his discussion, "Adams" defines sustainable

development as green development and green policy and argues that it is essential to conserve natural resources in order for the continuation of the human generation and to conserve the future generations as the pillar and base of sustainable development (Adams, 1999: 25-50). According to the health and psychology theory, it is necessary for the citizens to take part to form the city, to provide proper access to urban sustainability and services (Ziari, 2009: 12). "Ray" believes that it is the responsibility of sustainable development to reduce unemployment, poverty and job shortage (Ray, 1993: 56). The sustainable development theory puts emphasis on during which energy flow in a city would have the maximum efficiency in the lowest performance conditions and the dangerous environmental impacts would be minimized (Haughton, 1997: 192). Accordingly, development and advancement has always been the principal goal of programmers. Therefore, in order to develop housing, not only the current needs of the society and the poorest classes must be fulfilled, but the future needs and challenges and upcoming roads must also be known. In the past few years, given the importance of this issue, in most university and local assemblies, the number of studies on sustainable urban development in various dimensions has been daily increased and the different aspects of sustainability have been considered more than ever and its necessity has been made clear.

3.1. Dimensions of sustainable urban development

According to Brant Land's report, there are three dimensions to development which are environmental conservation, equality and equity. That is why most researchers review three dimensions when it comes to sustainable development: the environmental, economic and social dimensions. Others such as Sachs add to separate dimensions to these three, which are spatial and cultural dimensions. Jaywar (1996), Jalrz (1995) and Kumar (1993), et al. argue that sustainable development has two other dimensions which are institutional or political dimensions. Inability to reach each of these dimensions weakens sustainability and takes us further and further from sustainable development (Sachs, 1996: 2-10). The dimensions of sustainable urban development are as follows:

1- Eco-development: eco-development means conserving basic resources (and related types of them) in a level that wouldn't eliminate future authorities and conserving or promoting the capacity, quality and flexibility of the ecosystem. This dimension is promoted by reducing resource and energy consumption, decreasing the amount of wastes, pollutions and recycling them and finding appropriate technologies (Edward and Jepson, 2001: 491-511).
2- Economic sustainability: this dimension emphasizes conservation and promotion of economic conditions. There is inextricable connection between economic criteria and the formation process of economic policies. Economic welfare is based on a combination of economic factors such as employment, unemployment, levels of rent, rent of resources, distribution of equity and levels of survival in local and global economy. A better allocation and a more efficient management of resources and the current of investments will guarantee this dimension (Sachs, 1995: 5-9).
3- Social sustainability: basic axes of this dimension of sustainable urban development are reduction of social tensions; a method of organization compatible with social conditions; equality with disabled people, women, racial, ethnic – religious groups, human rights, environmental awareness and education; adequate shelter and health care for everybody; expansion of the role of family and community, political rights and participation and advancement of social values (Popson, Ruble, 2001: 381-410).
4- Cultural sustainability: this dimension puts emphasis on finding the roots of innovative insourcing patterns and processes that would make some changes in the procedure of cultural continuity. In the cultural sustainability dimension, culture has been defined as human beings' relations with nature and environment, individual and social beliefs and approaches in association with conserving the environment and protecting values and institutions (Sachs, 1993: 4-17).
5- Spatial sustainability: in this dimension, the village – city formation is moderated and habitats and activities are improved by putting a great emphasis on reduction of the focus that is in metropolises, prevention of destruction of unsustainable environment, decentralized industrialization, conservation of biodiversity in natural habitats (Sachs, 1995: 5-9).
6- Institutional sustainability: the axis of institutional sustainability is the organization of the passage of laws and a logical coordination and connection between institutions and organizations. This dimension is a precondition for the dimensions of previous levels. What is meant by institutional sustainability is that over time, the quality of institutional organization will change for the better. This is associated with the ability of management and efficiency of rules and regulations (Sachs, 1996: 2-10).

4. Findings

4.1. Characteristics of housing (on the scale of a city)

Investigation of general characteristics of housing is a major part of plans and programs of the cities. The essence of such characteristics, in terms of specifications of housing units, and how they are being used by families are tools that show some of the qualitative and quantitative aspects of the residential texture. In the new city, about 226 hectares will be about 44%

of the total area of the city. The high percentage allocated to the residential texture of the city, in itself, is indicative of the significance of investigation of the characteristics of the residential system of the city. It is necessary to note that according to previous studies, the information presented in this section is included in the suggested comprehensive urban plan. According to the reports about the comprehensive plan of this city, qualitative and quantitative characteristics of housing in the new city of Ramshar have been adapted from qualitative and quantitative features of housing in a strategic domain, i.e. the city of Zabol. By taking into consideration the capacity of development and obtainable goals and features of the city, these characteristics have been moderated.

4.1.1. Housing density

According to the available information obtained from the suggested comprehensive urban plan, it is predicted that until the end of the plan, i.e. the year 2021, there will be 13333 ordinary families living this city and Ramshar will have a population of 60000 adults. Thus, by 2021, the same number of housing units (13333) need to be built in the city. Therefore:

- Net residential density in this city has been predicted to be different in various periods of the realization of this plan. However, it is predicted that by the year 2021, the net housing density of the city will probably be 225 people per hectare.
- In the approved comprehensive plan of the city, it has been predicted that this city will have 60 thousand citizens in the long run and given the 596-hectare area of the land, its gross housing density will be 100 people per hectare.
- According to the recommendations for the comprehensive urban plan, its residential density will be 100 to 150% and the type of its distribution varies depending on the function of the housing texture. The recommended maximum residential density is 100 percent of the area of the land in residential lands, 120% in mixed local commercial – residential areas and 150% in regional commercial – residential areas.
- The average of the density of families in the residential units of this city seems to be 1 family per residential unit. In other words, on average, this city will have 100 families living in each 100 of its residential unit. However, this index has not been mentioned in the studies focused on the comprehensive urban plan. By assuming a 4.5-person family dimension and given the recommendations regarding urban plan based on the need for 13333 residential units by the year 2021 and a population of 60000, the estimated density is one family per residential unit.
- In urban housing planning, the distribution of families in residential units have been based on how big the families are. Given the sociocultural features of the area, it has been predicted that distribution of families and residential units needed by them by the year 2021 are as shown in the following table.

Table 1 – mean of recommended infrastructure of residential unit based on the size of families and income groups

	A family of 1 to 3 people	A family of 4 to 6 people	A family of 7 plus people
Frequency percentage of family	27%	89%	14%
Low-income groups	70	90	100
Average-income groups	90	100	130
High-income groups	110	130	150

Source: City and House Consulting Engineers, 2000

Therefore, it can be shown that families don't have equal residential space and some households have a bigger area; while the residential space of some households is quite limited.

4.1.2. Distribution pattern of residential land areas based on their size

In the comprehensive urban plan of the new city of Ramshar, residential lands have been divided into three types of houses based on how big the households are the socioeconomic characteristics. Table (2) is indicative of the quantitative specifications of this classification.

Table 2 – average dimensions of residential units

	Average plaque area (m^2)	Number of residential units	Percentage of frequency
Small residential unit	160	4000	30
Average residential unit	200	6667	50
Big residential unit	260	2666	20
Total	200	13333	100

Source: City and House Consulting Engineers, 2000

Given the average residential plaque area of the city, which has been predicted to be $200m^2$, it can be said that being relatively microlithic is one of the features of the residential texture of this city.

4.1.3. Distribution of residential buildings based on the number of their floors

Distribution of the number of floors in urban texture is one of the most important factors which forms the face of the city and

has economic, physical and social impacts and it's one of the most prominent discussions in urban designing in any place which is always together with any scale, either the scale of an urban space to an entire city. Thus, given the purpose of the present study, in this section, how the number of floors are distributed and the allocation of residential density of the city Ramshar is investigated based on the studies focused on the comprehensive urban plan.

According to the previous investigations done by the consultant of the comprehensive urban plan, in the strategic urban domain, i.e. Zabol city, 99.5% of the houses have just one floor and only 0.5% of them had two floors. Although these tendencies have been moderated the past few years as the number of 2-floor units increased, but the dominant tendency of construction is 1-floor houses. Accordingly, in the comprehensive urban plan of the new city of Ramshar, the recommended distribution of floors and residential density are as follows:

- For residential use lands, a maximum of 50-percent occupation, and a maximum of 100-percent residential density for two-floor houses.
- A maximum of 50-percent occupation for lands with mixed local commercial – residential use located in local pathways, and a maximum of a 120-percent permitted residential density for three-floor houses.
- A maximum of 60-percent occupation for lands with mixed regional commercial – residential use located in regional pathways, and a maximum of a 150-percent permitted residential density for three-floor houses.
- As it is clear, the maximum permitted number of floors in the residential texture of the new city of Ramshar is three floor. In terms of elevation distribution of the texture, a maximum of 3 floors are permitted in the margins of residential neighborhoods and local and regional pathways; but the internal part of the texture of residential neighborhoods, the recommended number of floors is one which classifies it as low-elevation places. Accordingly, it can be argued that in the distribution pattern of the residential texture of the city, in terms of elevation, there is an elevation increase from center to margin.

Figure 3 – a view of Mehr housing (Hasa complexes) in the new city of Ramshar (authors, 2016)

Figure 4 – a view of one-floor houses in the new city of Ramshar (authors, 2016)

4.1.4. Distribution pattern of residential units based on the type of their skeleton and the main building materials

According to the previous investigations and statistics of the year 1996 about housing, 75% of the main materials used in residential units in Zabol city are bricks and iron or stone and iron and other units use ephemeral short-lived materials such as wood, adobe, etc. Therefore, the general tendency of construction in Zabol city is towards ephemeral materials. The approved plans have attempted to reform and control in the new city of Ramshar.

4.2. In the scale of areas 1 and 2 (according to the detailed plan)

As it was mentioned before, in the comprehensive urban plan of Ramshar city, residential lands have been divided into three groups of small, medium and large based on the size of the household. Thus, most of economic studies and studies on housing and its strategies have been influenced by it. In the detailed plan, given the urban spatial structure, this classification is as follows:

- Residential areas
- Mixed local commercial – residential areas

Housing characteristics of each of the aforementioned types can be summarized as follows:

4.2.1. Residential areas

- A maximum of 50-percent occupation in a 60% of the north of the house
- A maximum of 100-percent residential density in the land area in 2 floors
-

4.2.2. Mixed local commercial – residential areas

In order to bring welfare for the citizens living in the residential textures and their easy access to the daily necessities of life in proper seasons, some spaces have been considered in details given the required per capita. These lands have been determined in local pathways and they have been specified in the detailed plan maps of the lands with mixed local commercial – residential uses.

The most important characteristics mentioned about these lands are as follows:

- Local commercial services use is permitted in the ground floor and residential land use is permitted in other floors.
- A maximum of a 50-percent occupation level of land area in the 60-percent northern domain
- A maximum of a 20-percent residential density of the house area in three floors

4.2.3. Mixed regional commercial – residential areas

Regional commercial centers are neighborhoods that don't meet the daily purchases, they meet the so-called weekly needs and requirements of the residents. These neighborhoods have been located in the places predicted in the detailed plan based on the necessity and the required per capita for each area. The main characteristics of these lands are as follows:

- A maximum of a 60-percent occupation level of land area
- A maximum of a 150-percent residential density of the house area in three floors

4.3. In the scale of neighborhood one area one

Establishment of residential units in neighborhood one area one and in the first phase of the execution of the new city of Ramshar are indicative of the presence of two specific housing patters. There is a specific distinction in the physical structure and housing characteristics.

The first pattern, which is somehow an interpretation of the principles of the detailed plan has aggregation dimensions of 180 to 300 and it has been established with a 50-percent occupation level with one-floor houses and one household. In fact, according to the investigation of the aggregation of the residential units in the scale of neighborhood one area one, it becomes clear that the dimensions of the recommended section are in the spectrum of 180 to 320. Simultaneously, the main recommended residential identity of the preparation plan has been defined with average microlith dimensions of 180 to 250. Although the distribution pattern of these units is indicative of relative mixtures, but it confirms the governance of units with an area of less than 200 square meters in the southern half and the eastern part in particular, and it also shows that most of the units with an area in the range of 201 to 250 square meters are located in the northern half of the city. However, the second pattern established by the Ministry of Urban Development and Housing with the name of leased rentals follows a different structure. In fact, this pattern, which has been established by allocating more than 7000 square meters to residential lands, follows complex patterns and gives rise to residential microlith units (under 70 square meter) as suits and it attempts to fulfill the housing needs of the underserved social classes.

This complex, with a two-floor elevation and by using the central yard pattern, has attempted to show the climatic peace in the private half of the area (central yard) with the help of the dance of light and shadow.

4.4. Function of the new city of Ramshar

Since the most important role and function of Ramshar city is to attract an overflow of population and to provide housing, the residential construction index and resident population is as follows based on the newest available information (bureau of statistics, information and project control of the development company of the new city of Ramshar).

4.4.1. Status of residential constructions

Table 3 – activities done in the field of construction of residential units with the separation of constructors so far (2016)

Row	New city	Cooperative		Mass production		Individual		Total
		Under construction	Finished	Under construction	Finished	Under construction	Finished	
1	Ramshar	0	100	504	500	0	0	1104

Source: development company of the new city of Ramshar (2016)

4.4.2. Resident population

Table 4 – the predicted population in the plans of the new city and its capacity for population in 2016

The name of the new city	Predicted population in the plan	Area of the new city in hectare	Predicted population in the plan	Population in 2016
Ramshar	35	600	60000	300

Source: development company of the new city of Ramshar (2016)

4.5. Evaluation of the rate of housing realization in the new city

Rapid growth of urbanization in the recent times in itself is the result of population growth and it has led to creation of new cities. Therefore, by finding out about housing distribution and production in such cities and its function will be of great help to the organization of housing issues in the future. Since building a house is considered as the main essence of the cities, recognizing and analyzing such an essence could effectively help solve the problems of the new cities (Amiri, 2005: 88).

According to the comprehensive urban plan of Ramshar, the number of residential units needed in the city in 2021 has been predicted to be equal to 13333 (city and house consulting engineers, 2000) which indicates that only 9% of the predicted number in the plan has been realized.

Table 5 – evaluation of the rate of housing realization of the new city of Ramshar

Year	Predicted housing*	Realized	Percentage of realization
1395	13333	1200	9

Source: city and house consulting engineers (2000); development company of the new city of Ramshar (2016)

CONCLUSION AND RECOMMENDATIONS

In the present study, it was specified that the new city of Ramshar has not been successful when it comes to meeting its housing-related goals by the beginning of 2015. Investigation show that none of these goals has been completely realized. Ultimately, some strategies and solutions are suggested as follows in order to improve the housing status of the new city of Ramshar for planning to move towards sustainable urban development:

1. Providing investors with financial encouragements and bank loans and facilities regarding innovation and improvement;
2. Using the capability of barren lands for increasing the housing capacity of the urban area;
3. Increasing residential density in the destructed units in order to increase the housing capacity;
4. Increasing the number of collecting and distributing streets and logically widening problematic pathways;
5. Educating the unemployed population for them to go in the construction industry;
6. Creating regional plans in order to create new jobs in the new city;
7. Exploiting the created urban wastewater treatment;
8. Building the substrate for local educational, administrative, sport and commercial spaces in the neighborhoods and developing them;
9. Using modern methods of sustainable methods in order to improve the quality and life span of the buildings;
10. Encouraging housing associations to invest in the new city;
11. Reinforcing the services sector;
12. Attracting donations by affluent residents;
13. Blocking land speculation, especially in the suburban areas of the new city;
14. Monitoring and controlling the lands in the cities and blocking unauthorized construction;

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- Area of the comprehensive urban plan

Residential area with low-density