Planning for Housing of Ashkezar- Iran with Sustainable Urban Development Approach

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ABSTRACT

Housing is considered as one of the most essential needs of human life, the smallest fundamental element of habitats and the former of one of the Geographical phenomenon. Paying attention to the housing issue and scheduling it, along with the sustainable urban development is considered necessary in all national, regional and urban planning for solving the citizens problems and providing peaceful and green environment along with safety, comfort and welfare. The article glances at the theoretical and scientific literatures of housing and sustainable development by scrutinizing the quantitative and qualitative indices of the city of Meybod for figuring the housing condition of the city, using the elements and selective Bio-Social indices and also evaluating constancy condition in the complex of the city's residential regions and areas. The purpose of the article is to scrutinize the sustainable development of the Ashkezar and planning for its housing.   The existing statistics specially the survey research, the condition of the city's housing was scrutinized and evaluated according to the qualitative and quantitative indices during the period between 1986-2005. The results show that the condition of the sustainable urban development is on progress with the meaningful relation with the process of the sustainable urban development. In the next stage the existing condition of the housing in the two areas of the city: residential areas and the city's eight areas, was selected according to the three of Bio-Social consistency indices, standardized properly with the subject of the project and by scoring model and scrutinized and evaluated by means of the SPSS software. According to the selective indices, there is no meaningful difference between the two residential areas of the city.

The results show that there is need for 3382 new residential units. So, the existing potentials inside the city (arid fields and ruined units) and by considering economical, social and specially cultural conditions and also the nature of the city of Ashkezar and along with the sustainable urban development constructing the two stories buildings, all of the city needs in the current period and also in the future would be afforded. So, aggregate development and short level building could be a suitable pattern for the sustainable development of the city of Ashkezar.

KEY WORDS: quantitative and qualitative indices of housing, sustainable urban development, planning for housing, the city of Ashkezar.

INTRODUCTION

After the industrial revolution, the civilization process developed increasingly all around the world which caused lots of problems such as shortness of house (the construction office of the country ministry, 2002).The housing issue is wide and unintelligible, having varied dimensions and there is no unique definition for it. House is a physical place which is considered as one of the families' initial needs (Ahary, 1997).The main purpose of housing planning is securing special needs of human being activities in order to have better residency condition and by considering limitation of sources and facilities (Pur Afkari, 1995). It can be said that the housing problem exists all around the world but in the developing countries the fast population growth and urbanism, domestic migrations, shortage of needed financial sources, the problems in relation with the supplying field, securing building stuff, shortage of skilled human sources and the most important one, absence of suitable policies and plans in the field of housing, had increased the problem harshly (Pur Mohammadi, 2006).

Currently, the worldwide issue is the shortage of residential units and settlements nonetheless in most places there is no attention paid to quality of the houses. The shortage of house had affected many aspects of the human life dimensions in such a way that it has allocated more than 50% of the family's revenue, causing lots of psychological and social problems (Farhangi, 1995). Iran ,as one of the developing countries, has been also encountered the problem since 1950's the economical evolutions had made wide changes in the economical basis of the country, in such a way that with the increase of Oil revenues, irregular immigrations, change of consumption habits and also the tendency of merchants towards the construction for receiving more profit which had imbalanced the housing market (Rafie, 1998).

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So it is very important to consider the housing and its planning along with the sustainable urban development in the form of national, regional and urban plans. Schedules are needed to solve the citizens' problems and securing peaceful and green space for them by using knowledge and planning techniques. The article glances to the theoretical and scientific literatures of housing and sustainable development by scrutinizing the quantitative and qualitative indices of the city of Meybod for figuring the housing condition of the city, using the elements and selective Bio-Social indices and also evaluating constancy condition in the complex of the city's residential regions and areas. Then, the city's need for housing will be estimated up to the year 2026 by considering its economical, social and specially natural and cultural structures.Finally, a desirable method and plan for attaining suitable housing and sustainable urban development will be offered.

Statement of Problem

In the current condition of the world, in which the world is under the hegemony of the cities, paying attention to the sustainable development shows some hope. The term "sustainable development" had been exposed in the scientific articles since early 1980's to lead the societies towards a better economy by fulfilling not only the current needs of the human being but also the next generations' being in consideration (Dehghan Manshadi, 2006).

In the first conference of Human Housing in 1976, which was held in Vancouver, Canada, the first operation order of humans' settlement had been posed. In the conference the universal attention had been paid to the humans' settlement and its importance. Until then the issue hadn't been considered as an important subject, it had also a few importance in the national plans and in most of countries there had been no official organization to accept the responsibility of the issue. But, in the second universal conference of Human Housing, held in 1996 in Istanbul, Turkey, the two issues of "securing suitable shelter for everyone" and "sustainability of urban settlement" in the world moving towards urbanism had been posed and discussed .The final document of the conference, named the program of the habitat agenda, had been suggested policies and actions along with the national and international efforts, during the next two decades, in order to achieve the mentioned main goals (Kharrat Zebardast , 1976).

So, development and developing had been always the main goal of the planners, although its physical meaning and reflection had lots of alterations, and indeed, housing, which is the real reflection of development and human beings to the suitable house, is the real criterion of passing the boarder of development. But for being sustainable, the development should be continued, general and in relation with the nature. Thus, with having such a modern theory which is dominating the world, it can be said that the main subject of sustainable development is to figure out the way of achieving continues development without harming the nature and human, unfair inequalities and for the benefit all human generations. The modern theory has also an important issue in the development of housing it should not only secure the current needs of society and the most destitute but also the developing ones for their knowing the future needs, challenges and paths (the office of housing affairs assistant,1976). Regarding the importance of the issue, during the last years, there had been more researches in the field of sustainable urban development in the different dimensions which has been considered its sustainability dimension more than ever and had shown its importance.

Attaining sustainable cities is the way to have sustainable world. In the cities besides limitations and negative points there are also some capabilities. Cities are the location of human aptitudes and innovations. So, in spite of hidden opportunities, we could find ways for attaining the sustainable cities and world (Dehghan Manshadi,2006). Because carelessness to the cities' sustainability would cause the increase of problems and difficulties in the cities, inequality and poverty, unemployment, false employment, criminal acts and vice, decreasing of life quality, condition of houses and physical development of the cities. So, paying no attention to the sustainability of the cities' centralization development process not only would have negative effects on the cities but on the small settlements such as villages. The issue shows the importance of paying attention to the sustainability of the cities by developing the region and optimized regional plans and program (Hekmatnia and Musavi, 2006).

The urban development which means as a special concept includes the changes in the use of land and aggregation surfaces to remove the citizens' needs in housing, transformation, leisure time and food. The urban development is sustainable if during the time it could be livable from a bio-environmental point of view, everlasting from an economical point of view and constant and associated from a social point of view and the citizens could have fair revenue, suitable house and sound and convenient life (Shokohie and Musa Kazemi Mohammadi, 1999). So the planning and scrutinizing the indices of housing and the sustainability in the complex of the city of Ashkezar areas and residential regions and its schematization could be helpful in securing the citizens housing needs in the framework of skeletal, social, economical and specially cultural plans in order to attaining the sustainable urban development.

Significance of research

The position of housing and its planning for attaining sustainable development is very important in every society and having a suitable house is one of the indices of development the scrutinizing of qualitative and

quantitative indices of housing in the city of Ashkezar upholds the necessity of sustainable development and its contrast will lead to the reorganization of the city's housing condition. Scrutinizing the space of arid lands inside the city, the unoccupied ones and also the number of ruined houses located in the old areas of the city will leads to the reorganization of the insider areas' capacity for constructing houses and all these knowledge form the basis of the schematizations and plans. By fore sighting the population and the number of families and figuring out the needed units for settlement, the officials will concentrate on the city's capacities to use them prevent the irregular growth and expansion of the city and also the problems which the city is confronting in the field of services. Offering the suitable plans for the housing development will prevent the expansion of the city towards unsuitable areas and will also specify the city's plan of sustainable development. In other way, figuring out the future needs in the field of housing can direct us in securing the needs for developing the field, servicing, infrastructure facilities, credits and… and help the officials in decision makings and securing services.

The research objectives
The main objects of the research are following in the framework :
- Specifying the housing condition in the city of Ashkezaar by accessing to the qualitative and quantitative housing indices by regarding to the importance of sustainable development and its relation with the field in the period 1986 - 2006.
- Specifying the inside capacity of the city which could be done by recognizing the space of arid and unoccupied areas and also the capacity of old areas.
- Fore sighting the population of families and estimating the needed residential units until 2026.
- Protecting the garden-city characteristic of Ashkezar along with the sustainable urban development.
- Offering methods and plans for the housing development until 2026.

Research background
The surveys shows until now there had been no master and plentiful research in the shape of scientific article, research plan or thesis in the field of the Ashkezar housing and its quantitative and qualitative indices but, there had been some important and outstanding general researches about housing in recent few years as follows:
Hekmatnia (2005) in an article with the title of "Scrutinizing and Analyzing the Qualitative and Quantitative Indices of Housing in the City of Taft and Planning for its Future" which showed that the condition of the city has an increasing process during the years 1976 to 1996 and it has better quantitative condition in contrast with the other cities. But it has got lower qualitative condition.
Ataollah Zar Afshan (2004) in an article with the title of Fundamental Qualitative and Quantitative Scrutinizing of Marageh fore sighting the needed houses until 2023 and scrutinizes the housing condition during 1976-1996.
Rahim Lahuti (2003) in his MA thesis had scheduled housing in the cities with increasing development; he also had a case study about the city of Ardebil and analyzed the city housing condition before and after the time that the city had become the center of its province.
Mahdi Dehghan (2003) in his MA theses had scrutinized and scheduled the qualitative and quantitative indices of housing in the city of Yazd. He had concluded that it is available to consider the unoccupied fields inside the city for estimating the needed housing indices for the future.
Inalu (2002) in his MA thesis had planned and analyzed the housing offer and demand in the north of the city of Ghazvin. His study has concluded the positive and meaningful relation between unbalanced offer and demand, the studied territory and therapeutic, hygienic and educational uses.
Ahmadi (2009) in his MA thesis with the title of spacial analysis and scheduling the housing of Shahedeyeh had concluded that the city of Shahedeye has 3800 residential units which is much more than the city families so there is no lack of house in the city.
Safari (2011) in an article with the title of qualitative and quantitative housing characteristics of the old areas of Yazd had concluded that qualitative and quantitative housing characteristics of the old areas are different in contrast with the whole city. The number of families, aggregation and capitation of the old area is lower than the whole city.
Hekmatnia (2011) in an article with the title of scheduling for the housing in the city of Meybod had concluded that the aggregation indices for the residential units in 2006 is 3.81, the mean of room is 4.26, the mean of room for each family is 4.19, the aggregation of person in room is 0.89, the aggregation of family in room is 0.23 and the percent of residential unit lack is 1.5.

Research questions
1- Is the condition of housing in the city of Ashkezar having any meaningful relation with the process of sustainable development in 1986-2006 as a qualitative and quantitative indices point of view?

2- Is the old area of the city of Ashkezar having enough capacity for accepting new houses?

3- Are the arid and unoccupied fields of Ashkezar able to secure the housing needs of the city?

METHODOLOGY

According to the studied elements and the nature of the issue, the research method is "descriptive-analytical". The studied indices are the common qualititative and quantitative housing indices and the three selected bio-social sustainability indices in relation with the subject of the research. At the beginning the qualitative and quantitative indices of Ashkezar, which includes: population, the number of families, family's dimensions, the number of residential units, the aggregation of family in the residential units, the aggregation of family in the room, lack of residential unit, the relation of family growth to the house growth, the age of residential units and the relation of durable units are scrutinized (Hekmatnia and Musavi, 2006). The indices of bio-society sustainability, which includes: residential capitation, urban capitations, the percent of durable residential units and the condition of housing in the city, had been denoted and by evaluating the current condition of housing and with regarding to the selected bio-social sustainability indices and use of standardized mark model and the SPSS software their sustainability condition is being specified. Then by using raw and diagram growth models the plans would be scheduled for the future until the year 2026.Finally the method or suitable model will be offered in order to have a sustainable urban development in the city of Ashkezar in the field of housing.

General cognition of the city of Ashkezar

The city, named Ashkezar, which is shining like a precious stone in the center of Iran, is an old territory, one of the ancient cities of Yazd province. The city had been made from the expansion of a village with 2000 years precedence in the center of a deserted land. The city is an official center of the Sadugh County, located 12 kilometers far from Yazd in the marginal part of Yazd-Tehran path, in the western north of Yazd. The space of its urban district is about 18.5 square kilometers. According to the existing documents, when it is talked about the official history of Ashkezar, it can be said that the governor office of the district had been established around 1923 which included all the villages in the Darvazeh Goran up to the Meybod County. In 1964 the city had been known as an urban district and in the year the city hall of Ashkezar had been constructed and start working and in 1997 Ashkezar the district had been changed into the county (Ashkezar city hall, 2008).

According to the statistical data in 2006 the city with 13957 people was the seventh city of the province according to its space and the eleventh one according to its population. During the last decades, because of having suitable natural structure, the city has a fast movement due to industrialization. According to the researches, the city has 55% of the province employees. It can be said that one of the powerful points of the city of Ashkezar is its Garden-city structure which is the best quality of the city according to the most city designers such as Howards. The city has old structures with simple adobe houses, ancient ventilators and… like most of the desert cities it has an aggregated texture concentrated in the center of the city which is its oldest area with one story buildings. Of course, the attention should be paid to the city's skeleton sprawl which has been raised because of the city's special structure and knowing some of the adjacent villages as part of the city, the issue causes problems such as missing of the city's solidity, lack of city sign, inaccessibility to the city services, the increase of unused fields inside the city and etc... . So, the issue shows the importance sustainable urban development in its different dimensions especially in the field of housing.

Map1: The position of the city of Ashkezar in Yazd province of Iran
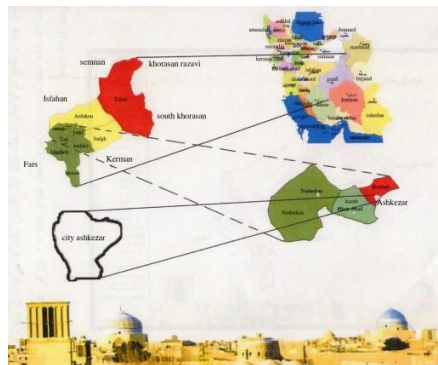
Source: Author

Indeed, the word "Maskan" (housing in Farsi) had been driven from the word "sakan" which means calming after movement, settlement, inside peace and temper. Maskan is the object noun of the word Saken, which means the place for settlement and peace, so the most common use of the word Maskan is the relief of the place's residents both mentally and physically (Inanlu, 2001).

In the first conference of Human Beings' Housing in 1976, which was held in Vancouver, Canada, the first operation order of humans' settlement had been posed. In the conference the universal attention had been paid to the humans' settlement and its importance. Until then the issue hadn't been considered as an important subject, it had also a few importance in the national plans and in most of countries there had been no official organization to accept the responsibility of the issue. But in the second universal conference held in 1996 in Istanbul, Turkey, the two issues of "securing suitable shelter for everyone" and "sustainability of urban settlement" in the world moving towards urbanism had been posed and discussed. The final act of the conference which was named the program of the habitat agenda, had suggested policies and actions along with the national and international efforts, during the next two decades, in order to achieve the mentioned main goals (Kharat Zebardast,1976).

Nowadays the word "sustainability" is used widely as a description of a world inside which the natural systems and human could last forever (D-Castry, 2002).

It has been for years that the sustainable development and its obscurant theories are scrutinized in the universal articles. The antecedent of "sustainable development", which is "Eco- development", had been posed by "Sachs", UNDEP and the environmental plan of UN in the early 1970. Although in the early 1970 the concept of the term sustainable development was used as the "cocoyoc deceleration" about the environment and development but its use for the first time goes back to "Barbara Ward" in the same decade (Faraji SabokBar, Hassan Ali, 2010).

In the universal conference of Ecosystem and UN Development (1987) the term sustainable development had been defined as a process that comply the current needs of human being without destroying the next generation's abilities for complying their own needs (Tosun, 2008).

"Adams" in his discussion about the sustainable development call it the green development and policy, he mentions the securing of natural resources as the necessary basis of sustainable development for stability of human generations (Adams, 1999).

The theory of health and mind knows the availability of the urban services and the city sustainability as the citizen's cooperation in forming the city (Zeyari, 2002).

"Ray" believes that reduction of unemployment, poverty and insufficient work is the duty of sustainable development (Ray,1993). Theoretically, the sustainable urban development is a process during which the energy circle of the city, in the minimum active conditions has the maximum efficiency, while the harmful environmental issues had been decreased (Haughton, 1997).

So, development and developing had been always the main goal of the plannerss. Thus, for developing the housing programs not only one should know the future needs,but also should consider the challenges and paths. Regarding the importance of the issue, during the last years, there had been more researches in the field of sustainable urban development in the different dimensions which has been considered its sustainability dimension more than ever and had showon its importance.

ANALYSIS

The qualitative and quantitative indices of housing in the city of Ashkezar

A)Quantitative indices of housing
B)The aggregation of family in the residential units
It shows the number of families in contrast with each residential unit which is calculated by h/H (the number of families/the number of units). The amount of the indices for the city of Ashkezar in 2006 had been 1.20 people which means there had been 120 families for 100 residential units (not all possessive).So, 20 families had joint house with the other families. The amount of indices in 1996 and 1986 also had been 1.05 and 1.08 which is not the sign of its improvement during the time. The amount of the indices in the urban regions of the country in 1986 had been 1.168 which means that there had been 1000 houses for 1168 families the indices for the year 1996 was 1.145 and in 2006 it has decreased to 1.08 which means that the city is catching the favorable level (one house for each family). Of course, the increase of the indices in 1996-2006 could be in relation with the elements such as: recent political evolutions in the province (making Sadugh county as the capital of Ashkezar), more population increase, industrial and political development of the city because of its suitable location, the availability of suitable fields for construction because of the high price of field in the city of Yazd, its nearness to the center of the city and also the

native culture of the city's residents (Negarandeh studies). Most important results of which, in contrast with the mentioned elements, according to the housing planning are the creation of new demwnd for the settlement.

B)The aggregation of person in the residential unit

The amount of person aggregation in the residential unit is one of the main indices in the life level (Ahmadi and Jahardoli, 1999). The indices which is the explanatory of each person's ratio in each residential unit (P/H) was 4.51 people in the city in 2006, which means 4.51 people for each unit. The indices was 4.83 and 4.78 in 1986 and 1996.The scrutinizing of the evolution process of the indices shows that during the years the condition of house had been improved gradually the issue is the explanatory of the quantitative increases in the number of house ,of course the amount of the indices in the urban regions of the country had been decreased to 4.20 in 2006.

The mean of room numbers in the residential unit

In the scrutinizing of the city's urban condition, the mentioned indices in 2006 had been 4.04. It means that in the 2006 the units have more than 4 rooms. The indices for the years 1986 and 1996 were 4.03 and 4.04 which shows the partly constant condition of the indices.

The aggregation of family in room

The index is calculated by h/R (room/family) and the more the number is nearer to zero the better condition the families have in occupying the room. The amount for the city of Ashkezar in 2006 was 0.29. Of course the amount of the indices in the urban regions of the country had been decreased to 0.39 in 2006.

The aggregation of people in room

The aggregation of people in room is one of the important elements in evaluating the quality of life. The indices had been regarded in the scrutinizing process of the UN population crisis committee about the quality of life (Asayesh, 1996). It could be said that the aggregation of people in room ratio is one of the important elements in scrutinizing the housing studies which indeed means the people's enjoyment of the least available space for living in mental and physical welfare and peace.

According to the information and the done researches in Ashkezar, the amount of the indices in 2006 was about 1.11 and it has become 1.19 and 1.18 in 1996 and 1986 which shows the improvement. By the way the amount for the urban ragions of Yazd in 1996 had been 1.08 (equal to the city) and in the urban regions of the country it was 1.37.

The lack of residential unit

This is calculated by: $the\ percent\ of\ residential\ units = \frac{the\ number\ of\ families - residential\ unit}{the\ number\ of\ families} \times 100$

In other words with comparing the number of families with the number of existing houses, according to the specific standard (mostly one house for one family) the lack of house could be calculated. For better estimation the percent of residential unit lack could be used, which is calculated with the equation bellow (Hekmat neya, 2006).

The percent of the mentioned lack in the city of Ashkezar in 2006, 1996 and 1986 was 4.91, 8.06 and 16.87 percent. According to the statistics the increasing process of the indices, specially during (1996-2006) was good. Its main reason can be the increase of families. So, there had been no better condition for the indices of housing. Of course, according to the 1996 and 2006 statistics of the urban regions of the country the indices were 12.65 and 7.28 percent.

The relation between the growth of family and the growth of house

By use of the done studies and calculations, the amount of indices in 1986-96 had been about 1.26 which had been decreased to 1.59 in 1996-2006. It shows the growth of family and in contrast the decrease of offering suitable house especially in 1996-2006. Of course the 1996 and 2006 statistics of the urban regions of the country shows that the index was 0.903 percent which is the sign of favorable condition. It must also be said that the lack of house is in the all cities of the country while the amount of family growth had been more than the growth of existing residential units (Dehghan, 2002). The evolutions of the indices in Ashkezar in 1986-2006 are in the table below:

row	year quantitative indices	1986	1996	2006
1	Population	9637	11413	13957
2	The number of families	2095	2593	3722
3	Family's dimension	4.6	4.4	3.75
4	The number of residential unit	1992	2384	3094
5	The aggregation of family in residential unit	1.05	1.08	1.20
6	The aggregation of person in residential unit	4.83	4.78	4.51
7	The mean of room's number in residential unit	4.03	4.03	4.04
8	The aggregation of family in room	0.26	0.27	0.29
9	The aggregation of person in room	1.19	1.18	1.11
10	Lack of residential unit	103	209	628
	Lack of residential unit percent	4.91	8.06	16.87
11	The relation of family's growth with the house growth (1996-2006)	---	1.26	1.59

Source: the statistics data in the (1996-2006) period of Ashkezar, Yazd province and the country, results and writer's calculations

Qualititative indices of housing
The way of occupying residential unit
The index of possessive occupation of arena and superstructure in the urban regions of the country in 1996 was 62.22 which increases to 66.73 by possessive adding of superstructures. In contrast the rental occupation in the same year had become 20.89 percent which has less percent to the possessive occupation (Hekmatnia and others, 2005). It means that Iran is one of the countries in which the percent of private possessive occupation of residential units is high. 96% of the city of Ashkezar residents, according to its instructor plans, are also the owner of the residential unit while others live in rental or free units. According to the studies and the resulted economical and social changes, during the recent years, the possessive occupation had been high and therefore the amount of the index in contrast with the other cities is favorable.

The age of residential units
According to the studies on the Ashkezar buildings, about 23 percent of the units had the age of 1-10 years longevity and about 42.5 percent of them also had been constructed in 1976-1996 which includes most of the houses. A great amount of the houses had been also built before 1976 in a way that about includes 34.5 percent of the city houses. So, according to the offered cases, it could be figured out that most of the city houses are old which is related to the way of the city construction.

The relation of durable units (the buildings and construction stuff's durability)
The scrutinizing of the units as a durability point of view in the city of Ashkezar is the sign of increase in the number of durable units and decrease of the brittle ones during the last two decades which has experienced important changes. In a way that, in 1986 the percent of durable units of the city was 53%. The amount was 59/5 in 1996 and 75.5 in 2006 which means that, the amount had been increased during 1986-96 and also the quality of the houses too because of using better construction stuffs. The amount of units, build by use of durable stuffs, in the urban regions of the country in 1996 was 76.6 and in the province the mentioned amount was 72 percent and 86/8 in 2006(the assistant office of housing and construction, 2007) and it shows the favorable condition of housing in the city. By contrasting the statistics with the percents related to the city of Ashkezar it could be considered that the building's durability in city had been increased.

Evaluating the housing condition in the city of Ashkezar
Evaluating is the process, used to determine the priorities so, in scrutinizing and evaluating the projects the probability of catching the determined objects could be specified and some cases where the elements that prevent us to catch them also could be recognized (Hekmatnia and Musavi, 2006). The evaluating is also a method or tool for recognizing the effects and the actions' results and even probable results of the existing plan's works (Shariat, 1996).
The scrutinizing and evaluating processes of housing condition and sustainability condition in the selective indices along with study's subject and aims had been accomplished by means of standard grade model and their statistical analysis (RSS software) in the complex of the city residential regions (Askezar and related areas, Rezvan Shahr and Firozabad) and the results shows that Ashkezar and its related areas are in the semi-sustainability

condition and the complex of Rezvan Shahr and Firozabad in semi- impermanent condition. Of course the existing condition is mostly related to the amount of old residential units of the city and its village-city structure and generally there is no meaningful difference between them to be interpreted. The quality of the conditions is shown in the tables (2, 3,4,5,6 and7).

Table (2):Skeleton characteristics of residential regions and areas of Ashkezar

Residential units		areas	population	space (hectare)	Gross aggregation	Residential space (hectare)	Pure aggregation (hectare)
	Askezar and the related areas	Imam Khomeini street, Ashkezar	2665	201.9	13.20	28.4	93.84
		Hakim Abad	1445	68.4	21.12	18.1	79.83
		Am mar Yasser	982	16.7	58.80	10.9	90.09
		Hamzeh	580	8.7	66.6	6.1	95.08
		Poshte Baghe Kaj	1319	15.7	84.01	12.2	108.1
		Tu deh	1005	20.1	50	11	91.36
	the complex of Rezvan Shahr and Firozabad	Rezvan Shahr	4564	137.4	33.22	48.8	93.52
		Firuz Abad	1397	51.8	26.97	15.78	88.53

Source: author, supplied according to the raw statistics of Iran- statistics center

Table (3): the condition of housing in residential regions and areas of Ashkezar

Residential regions		areas	population	The number of families	Family's dymension	The number ofresidential unit	Lack of residential unit	The coefficient of family in residential unit	Residential space (cubic meter)	Residential capitation(cubic meter)	the number of durable buildings
	Askezar and the related areas	Imam Khomeini street, Ashkezar	2665	700	3.81	527	173	1.32	284000	106.57	453
		Hakim Abad	1445	376	3.85	307	69	1.22	181000	125.26	255
		Am mar Yasser	982	298174	3/30	247	51	1.20	109000	110.99	226
		Hamzeh	580	337	3.34	161	13	1.08	61000	105.17	150
		Poshte Baghe Kaj	1319	252	3.92	298	39	1.13	122000	92.5	168
		Tu deh	1005	1227	4	242	10	1.04	110000	109.45	108
	the complex of Rezvan Shahr and Firozabad	Rezvan Shahr	4564	358	3.72	1007	220	1.22	488000	106.92	799
		Firuz Abad	1397		3.91	305	53	1.17	157800	112.95	180

Source: author, supplied according to the raw statistics of Iran statistics center

Table (4):Bio-social elements and indices used in the study

Index	Kind of index	nature	Explanation of the index
Residential capitation	Cubic meter	Positive	Sign of general welfare
Urban capitation	Cubic meter	Positive	Sign of general comfort increase
The percent of durable and qualified units	percent	Positive	Sign of filling safety in the living place

Source: writer

Table (5): the condition of sustainability in the complex of urban regions of Ashkezar according to the selective indices of 2006

Sustainability condition	$ssij = \frac{1}{n}\sum_{i=1}^{n} ssij$	Residential regions
Semi sustainable	0.74	Ashkezar and related areas
Semi impermanent	-0.6	Rezavan Shahr and Firuz Abad

Source: writer

Table (6): The condition of areas located in the residential regions of Ashkezar according to the selective indices of 2006

Residential regions	Area	$ssij = \frac{1}{n}\sum_{i=1}^{n} ssij$	Sustainability condition
Ashkezar and related areas	Imam Khomeini street, Ashkezar	0.7	Semi sustainable
	Hakim Abad	0.8	Semi sustainable
	Am mar Yasser	0.15	Median
	Hamzeh	-0.02	median
	Poshte Baghe Kaj	-1.06	impermanent
	Tu deh	-1.15	impermanent
Rezavan Shahr and Firuz Abad	Rezvan Shahr	-0.23	Median
	Firuz Abad	-0.23	Median

Source: writer

Table (7): The results of SPSS statistical analysis in residential regions of Ashkezar according to the selective indices of 2006

Indices	Residential regions	Meaningfulness level
Residential capitation	Ashkezar and related areas	0.8
	Rezavan Shahr and Firuz Abad	
Urban capitation	Ashkezar and related areas	0.9
	Rezavan Shahr and Firuz Abad	
Percent of residential durable and qualified units	Ashkezar and related areas	0.6
	Rezavan Shahr and Firuz Abad	

Source: author

Fore sighting
Population for sighting

Population for sighting calculates the population of studied territory by means of great group of calculations. In the study by considering the population data get from the 1996 and 2006 statistics the population growth until 2026 will be for sighted.

In the symbolic model of growth the amount of population growth exists proportionally to the population amount. In a way that the relation of population increase and the whole population is firm but the increasing rises in the mathematics' language (Hekmatnia and Musavi, 2006):

$$p_{t+n} = p_{(t)}(1+r)^n$$

$p_{(t+1)}$: the population in the year t + n (last of period); $p_{(t)}$: the population in the year t (the beginning of the period); n: time period (to month, year, half year and …); r: the rate of year population in a way that r, the rate of population yearly growth could be get by the formula below:

$$R = \sqrt[n]{\frac{P(t)}{p_\circ}} - 1 \times 100$$

It was predicted that, according to the 2/03 percent growth rate of 1996-2006, the population of Ashkezar during the years 2011, 2016, 2021 and 2026 would be: 15432, 17063, 18867 and 20862 people which is shown in the table (8).

Table (8) :The prediction of population and the number of Ashkezar families until 2026

Year / title	2011	2016	2021	2026
Population	15432	17063	18867	20862
Family dimension	3.6	3.5	¾	3.3
The number of family	4287	4875	5549	6322
The added families	565	588	674	773

Source: author

The prediction of needs to housing

For estimating the needed residential units for the considered period, the raw method of estimating is used according to the needs, its formula is in below (Zeyari, 2007):

E(t)=H-U=H(t)+rU(t)

E(t): the needed residential units until the time (t); H: the number of families; U: the existing residential units; H(t): the need due to the population increasing until the time t; $r^{U(t)}$: the percent of residential units until the time t will need demolishing and building renewal.

It must be said that the method had been used by the UN experts for planning the housing in some of the developing countries while having favorable results (Kharate Zebar dast and Nasiri, 1994).

So, by considering a number as the family coefficient in the residential unit (K), the number of needed units will be acquired. The index could be calculated for the years 2011, 2016, 2021 and 2026 as 1.1, 1.07, 1.04 and 1.01. For the purpose the percent of demolishing in the city of Ashkezar would be calculated according to its natural geography. The percent of demolishing for the city is low because, according to its natural geography it confronts natural and continental terrors such as earth quake, so it won't be calculated. In one hand, according to the statistics of housing and constructuion organization of Yazd and received data the coefficient of yearly demolishing in the province urban regions is 0.12 which could be also distributed for Ashkezar.

And in the other hand, some of the city's residential units demolishes for different reasons such as; havoc or oldness, the government needs for providing urban infrastructures, demolishing low aggregated house for building high aggregated one and even unfashionably, the amount of which should be calculated (Hekmatnia and others, 2005). The calculations are completely shown in the table (9):

Table (9)The prediction of needed residential units of Ashkezar until 2026

period	Title						
	Lack of residential unit at the beginning of the period	Percent	Demolished units	Percent	Due to the family's growth	Percent	Totality
2006-2011	628	54.1	19	1.7	514	44.2	1161
2011-2016	51	8.1	25	4	549	87.9	625
2016-2021	39	5.1	29	3.8	701	91.1	769
2021-2020	27	3.3	34	4.1	766	92.6	827
2006-2021	745	22	107	3.2	2530	74.8	3382

Source: author

a) **The prediction of the city's capacity for housing**

The main goal of housing planning is securing the special needs for human activities in order to having more favorable condition according to the source and facility limitations (PurMohammadi,2006) and using the existing capabilities of the cities in order to securing the citizen's need for house will leads to the utilized use of existing facilities and capacities. In the other hand, as one of the aims of the research is to determining the capacity of the interior areas of Ashkezar in accepting the population, so for determining the capacity the two groups of the data are scrutinizing: the space and capacity of the arid fields inside the city of Ashkezar; the number and capacity of ruined residential units in the old areas (central area) of the city.

According to the data got from the studies and calculations of the city hall and Ashkezar plans, the space of arid fields and enclosed arid fields in the city of Ashkezar was 780000 cubic meters, which should be used according to the usage rules of urban fields specially in the residential unit. So according to the mentioned standard 50% of arid fields inside the city could be considered for other usages and the other 50% for constructing residential units. It could be said that the inside fields of Ashkezar for securing settlement is 390000 cubic meters.

If by use of the arid fields inside the city, the single family units (on story) being built, about 58% of the total residential needs of the period between 2006 to 2026 will be fulfilled but by constructing two story buildings, 3900 new residential units will be added to the existing ones which is more than the need until 2026 (until the year 2026, 3382 units will be needed).

The use for units which would be in 2006- 2026, could fulfill 3.16 and 6.32 percent of housing need if their usage don't be changed or become the two story buildings. It is also available to fulfill 14.8 percent of the housing need in the city by using the maximum capacity of the existing ruined buildings during the next 5 years (2006-2011) which is in the table (10):

Table (10): the potentiality of existing and future ruined residential units for securing the Ashkezar housing need

Title		Demolishing residential units
Renewal in the two story shape	Renewal in the one story shape69	
138	17	Existing old area (2006)
34	86	Sprawled in the different area of the city(2006)
172	19	Demolishing residential units(2006)
38	25	2006-2011
50	29	2011-2016
58	34	2016-2021
68	107	2021-2020
214		2006-2021

Source: author, supplied according to the raw statistics of Iran statistics center

Conclusion and strategies

In the existing study, the condition of housing in the city of Ashkezar in 1986, 1996 and 2006 was scrutinized according to the qualitative and quantitative indices. The founding shows that the city had been confronting with the expansion of residential space especially in 1986-96 and after the approval and executing the master and formal plans in the decade the city had a suitable progress according to the qualitative and quantitative indices. The housing condition (2006) in the complex of residential regions of Ashkezar was also scrutinized according to the related bio-social sustainability indices (residential capitation, urban capitation, the percent of durable residential units) and their amount of sustainability was determined and it was found that there is no meaningful difference between the two residential areas of the city.

Generally According to the for sightings 3382 residential units would be needed until the year 2026 74/8 percent of which is related to the families' growth and 3/2 percent is the second need for the demolishing ones.

Strategy
- Preventing the constructions without having the justification out of the plan.
- Saving the farms and preventing the demolishing of gardens according to the sustainable development principals.
- Upgrading the citizens' bio-social knowledge.
- Ending the regional dissensions which slows the urban development.
- Executing the strategies of sustainable development which conforms the weakness and power points, facilities and capabilities of areas in selecting the indices of sustainable development.

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