

The Impact of Economic Change on Livelihood Spaces (Agriculture and Animal Husbandry); Qazvin Rural Housing

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Abstract

Rural housing is the most primitive and original form of housing for people with fixed habitation. It has developed and expanded due to the changes in the forms of nomadism, especially those that occurred based on agriculture and animal husbandry. of the society— are influential in encouraging economic changes. This study seeks to understand Rural housing reflects the concept that the spaces of livelihood and living are mostly interrelated and that there are no definite time boundaries between activities in rural life. The Iranian Land Reform, a prominent landmark in the 1960s, has been the starting point of major changes in the economy, social relations, migration, occupation, and urban development and marked a major shift in the physical form of rural housing. Three fundamental sources of noneconomic affairs —changes in the knowledge and science of societies, changes in technology, and changes in the public institutions and explain the process of economic change and how it affects rural housing.

In this descriptive-analytical study, with the help of field and desk studies and investigation of the ideas of theorists, it was concluded that the process of economic change has only improved living spaces and increased facilities and local amenities for villagers, but livelihood production spaces in rural housing, as a link in the production system, has been neglected during these years. Moreover, in the spatial organization of rural housing, the only spaces that receive attention in the area of livelihood are warehouses and stalls. However, in rural housing, a site also includes gardens, orchards and farms that are the most important parts of a rural house. This has changed the living patterns of residents and caused rural settlements to become semi-urban. Furthermore, the productive economy of rural life has turned into a consumer economy. Therefore, the need to use agricultural elements (gardens, farms, pastures and livestock) becomes an inevitable necessity in the architecture of rural housing.

Keywords: Rural Housing, economy, agriculture, livelihood-production approach.

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This article is taken from the doctoral dissertation of Zahra Beigom Taghavi entitled "Explaining the Effect of Economic Changes in Rural Communities on Rural Housing" which is being completed under the supervision of Dr. Kamal Rahbari Manesh and Dr. Maryam Armaghan in the Faculty of Architecture and Urban Planning of Islamic Azad University, Qazvin branch in 2019.

Introduction

Rural housing architecture reflects the lifestyle, livelihood and social and economic conditions of its inhabitants. Therefore, job creation as a necessary condition for rural growth and development is the most important criteria of economic change. The results of sampling the characteristics of rural housing in 2013 by the Housing Foundation of the Islamic Revolution regarding the livelihood of rural communities show that the predominant activity of villages (93.5%) is agriculture and animal husbandry that requires adequate physical space, but of all rural houses, only 33% have livelihood spaces. Nevertheless, there is no doubt that cities, with all their wealth, are merely secondary producers, and urban life depends on the survival of the countryside, because the most important vital and biological needs of the inhabitants of the cities, which are food, are provided in the villages and by nomadic people.

Therefore, our goal is to understand what has happened in the formation of spaces related to the livelihood of rural people during these years in the modern world and what effect economic developments have had on the architectural elements of rural housing.

The present study raises the question that why and how the physical-spatial transformation that has occurred in rural housing is affected by economic changes in rural communities.

It further tries to review the constituent elements of rural housing (site and standing property) with a glance at the past and to revive the traditional patterns of the livelihood spaces of rural housing in line with modern relations and technology by explaining the impact of economic developments during the last five decades.

Literature Review

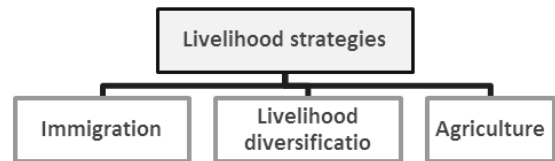
Theoretical Principles

Livelihood

Livelihood means life and being alive, and it comprises the capabilities, assets and activities required for a means of living (Chambers, 2006: 5). Livelihood is more than a job and includes all the things that people do to make a living, and the basis of human

development and economic development is based on livelihood (Helmore and Singh, 2001). Thus, livelihood causes different behaviors in the daily life of villagers and consequently the formation of a variety of bio-productive spaces.

Livelihood strategies comprise the range and combination of activities and choices that people make in order to achieve their livelihood goals (Shubhadeep Roy et al., 2012: 391-396). They include: how people combine their income generating activities; the way in which they use their assets; and how they manage to preserve existing assets and income (DFID, 2001).



Site and standing property in rural housing

Rural architecture begins with housing and ends with housing. The issues related to the environment, type of livelihood and form of production are interwoven in this type of architecture and housing, and the survival of rural people depends on the progress of rural economy and production. In this regard, the predominant type of livelihood in these biological centers is an important and influential factor on the texture, body and shape of residential houses (Akrami, 1389: 25-48). Therefore, "every rural house is firstly a self-sufficient unit and secondly has a direct and close relationship with the type of livelihood" (Zargar, 2007: 104).

In the encyclopedia of architecture and urban planning, the term 'standing property' is used against 'site', which is the area or plot of land on which the standing property is built. The standing property of farmlands include residential areas, warehouses, stables, and trees. Thus, rural housing provides a wide range of functions and spaces for living, working, warehousing, animal husbandry and the like, which are divided into three categories: biological functions, economic functions (livelihood-production) and service functions, each requiring a specific type of site and space (Mohammadi Yeganeh, 1396:

62). These functions can put housing as one of the levers of economic development in the service of production (Sartipipour, 2009: 67).

Rural Housing and Economy

Economics is about balancing the livelihood standards of the family with those of the society. Agriculture and animal husbandry are the pillars of rural economy. Rural economy includes all activities that are carried out in the rural environment, whether agricultural or non-agricultural, in order to provide livelihood to the villagers (Pourtaheri, 2018: 435) and generate income for them. The economic change that is the subject of this research includes the transformation in the material and physical well-being of human beings. Understanding the process of economic change enables us to express the material reasons for the current situation of rural housing.

Basically, the economic approaches that are chosen by managers, including those in Iran, for the economic and social growth and development of the society are "neoclassical economics", which are based on fixed and static rules of productivity and profitability in production and pay less attention to social and cultural issues (Douglas C. North, 2018: 46).

The new institutional economics, however, is dynamic and is based on knowledge, technology and social institutions that see economic productivity and profitability in the provision of public livelihood and thus shape economic change. In this sense, economic change is a function of three fundamental sets of non-economic affairs:

- Change in the ability of communities¹, which means the skills, abilities or the workforce of a society
- Change in technology², which means the scientific use of knowledge and experience in the field of production; institutions that provide farmers and ranchers with tools, machineries and technics for producing, processing and distributing agricultural and animal products
- Change in the public institutions of the society³ that defines the legal, political and social structures of a society and compromise the norms, traditions and the culture of that society.

Research Background

The previous studies that are conducted in the field of this article can be followed from two perspectives: first, the history of rural architecture at the global level; and second, the history of domestic efforts in the field of rural housing architecture. What follows is a brief description of these two perspectives.

Research background abroad

What we know in Iran as rural livelihood housing with a focus on agriculture and animal husbandry, is considered in other countries with different titles such as self-sufficient housing, residential farms, and agricultural architecture. The book "Architecture and Agriculture", a guide to rural design, in addition to emphasizing the relationship between rural housing and performance, culture, climate and location, deals with the design and architecture of rural housing and the architecture of agricultural spaces in villages. It informs the reader about the potentials, opportunities and values of rural architecture and how we can keep pace with rapid changes in the future of the village (Dewey Thorbeck, 2017). In "Architecture for Agriculture", Krista Halushef also presents a design model for agricultural spaces, which can be built next to residential spaces according to their function. The design of a sustainable family farm is in line. The purpose of agricultural architecture is to use architectural creativity in the design of rural housing, to solve issues and livelihood problems on the farm, and to answer the needs of the new generation (Halushef, 2012).

Research background in Iran

Examining the "Impact of Rural Housing Renovation on Rural Livelihood Economy", Shams-al-Dini et al. (2011) believe that in the field of livelihood economics, due to the incompatibility of the "plan" of some houses with the type of productive activity common in rural areas, more than 75% of villagers have indirectly left such activities. The results of "A Research on the Trend of Functional Changes in Rural Houses" by Seidaei et al. (2012) show that there is a direct relationship between the type of job and the development of rural houses and also between gaining and increasing knowledge of

technology, which causes the most changes in rural performance. Saeedi et al. (2013), in the article "Housing Renovation and Structural-Functional Transformation of Rural Housing" have concluded that the implementation of plans for improvement and renovation has led to a change in the livelihood activities of rural households and this reduces their activity in agriculture and increases their desire to work in the service sector.

With "An Analysis of the Effects of Retrofitting Rural Houses on their Productive Function", Mohammadi Yeganeh et al., state that the economic dimension has changed the direction of the villagers' life from a self-sufficient economy to a consumerist economy and also changed the native livelihood of the villagers. Mahdi Nejad et al. (2016), in "Effects of Economic Factors on the Physical Structure of Sustainable Rural Housing", believe that the architecture of villages is formed according to the functional nature and response to human needs and activities. By "Analysis of Economic Factors Affecting the Development of Livelihood-Based Housing in Rural Areas", Mohammadi Yeganeh et al. (2019), show that the function of housing in rural settlements is evolving towards "dormitory" and the continuation of this trend is affected by the weak position of rural economy.

Research Method

The purpose of this article is to understand how economic developments affect the housing structure of mountainous and plain villages in Qazvin province. In this article, in order to understand the process of economic changes in the case studies, the effect of the mentioned factors on the physical system of rural housing in different sub-climatic parts of Qazvin is discussed. Since the study of economic characteristics cannot be limited to closed areas, and it is irreversible due to macroeconomic developments, it would be unscientific to study this issue as a case study without having a holistic view. However, deep studies in this regard are mostly in the form of monographs. Therefore, in this study, the aim is to gain a deep understanding of the subject in order to extract the meanings of rural architecture and housing phenomena

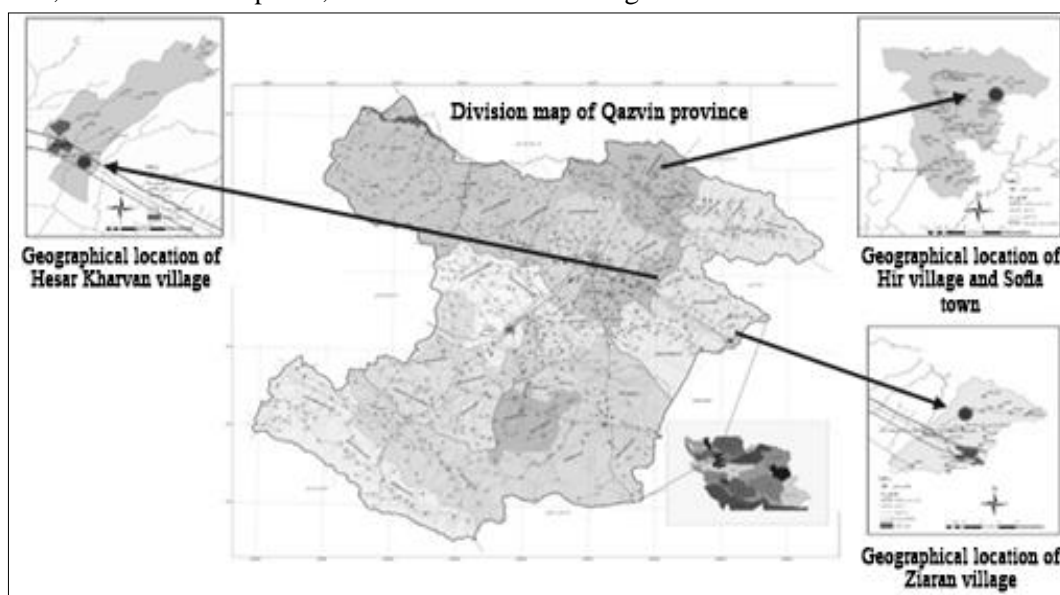
from the context in which the events took place and explain them through inference tools and observable phenomena, and the focus of this study is limited to the economic characteristics of Qazvin province. In this province, Abiek has the most mountainous villages and Alborz the most plain villages. In this study we selected the villages that have seen the greatest impact on economic changes over the years. Although the impact of economic changes has not been limited to this region, a case study in this region makes the aspects of this research more tangible.

After a geographical and economic investigation of the studies conducted by consulting companies in 1960s, six projects were proposed for the irrigation network of this area. Among these projects, we selected the project of Zone F. This zone has 37 villages with first grade soil irrigated by digging deep wells in the aquifer of Qazvin plain and by transferring water from Taleghan River. According to this project, only some plain and mountainous villages that were included in the irrigation network, benefited from government economic investment. Moreover, unlike the villages of the plain area of the province, the villages of the mountainous region, which are home to more than half of the rural population of the province, were deprived of the fruits of development and investment on this project with an excuse that the process of conveyance and distribution of water in the scattered lands of this region is not economically justifiable. Therefore, we decided to compare 37 villages that are deprived of this privilege in both the plain and mountainous regions of Zone F.

This article, which is an applied-developmental research with a descriptive and causal research strategy, focuses on a case study in the geographical area of Qazvin. Based on documentary evidence and written sources, this article looks at economic conditions of the village and tries to understand the body of the village from a holistic viewpoint. The data has been collected based on library documents and field studies by observation method. The theoretical foundations of this qualitative research, in most parts, are based on the

paradigm of structuralism and independent of numerical documentation. The theoretical approach of this article is not an approving one, but is a medium-range norm. Field study data of this article have been collected from 37 mountainous villages and 37 rural and plain villages of Qazvin province, out of about 842 inhabited villages, during consecutive years (more than four decades). We also purposefully compared and explained the obvious examples of these two groups of villages. We selected the most populous village in the mountainous region "Hir" from among the 37 villages in the mountainous region, and on the contrary, we selected the most populous villages in the foothills and plains, "Ziaran" and "Hesar Kharvan", where the most changes are evident. These villages, which are in the mountains, foothills and plains, have been

selected as a sample of all parts of the province. In the section on studies on the generalization of rural information to the general economic characteristics of Qazvin, the inductive method has been used and in the analysis of more information, the analogical method has been used. Obviously, in this study, which is dedicated to the effect of economic developments on the structure of livelihood, features such as the natural characteristics of the independent variable, livelihood characteristics and economic properties of mediating variables and physical characteristics are considered as dependent variables. However, some political, cultural and social characteristics are also considered as independent variables in some situations. Figure 1 shows the geographical location of each of these villages.



F1. The location of Hir (mountainous village), Ziaran (foothills village) and Hesar Kharvan (plain village) in the division map of Qazvin Province (Source: Qazvin Governor's Office, Planning and Budget Office, Alborz Development Planning Consulting Engineers).

Discussion and Analysis Results

Introduction of Case Studies

The mountain village of Hir is in the Alamut region at an altitude of 1,600 to 2,000 meters. The agricultural water of this village is mainly supplied by the Nineh River. In this village, agriculture is the main source of livelihood with 80%, and the rest is allocated to animal husbandry. Agricultural lands cover

an area of 500 hectares (cherries, hazelnuts and blueberries). According to the latest population and housing census in 2016, Hir village, with a population of 726 people, is the most populous village in the mountainous region.

Foothills village of Ziaran is one of the subdivisions of the central part of Abik city in Qazvin province. It is one of the most

populous villages of Ziaran county. Ziaran village, one of the rainfed villages of the area, is located in the foothills, at an altitude of 1500 to 2000 meters. This village has a cold semi-arid Mediterranean climate. Since the village is across the Abyek-Taleghan road, it has a special geographical position and a high level of infrastructure services. Industrial development (Abyek Cement Factory) has transformed its livelihood and living areas.

Plain village of Hesar Kharvan is a subdivision of Alborz city. It is located at an altitude of 1200 to 1500 meters and has a cold semi-arid Mediterranean climate. This village has a special geographical position in the Qazvin-Tehran highway. Several factors, such as the location of Hesar village on plain lands, the ability to irrigate these lands, the existence of multiple water sources, proximity to urban centers and access to communication roads, have made the village special. According to the latest population and housing census in 2016, it has a population of 3949 people.

Comparison of Case Studies

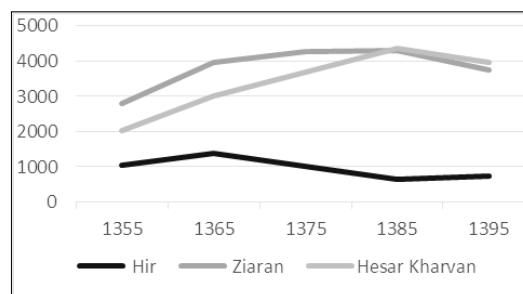
Demographic changes

The descriptive findings of the study show that among the reasons that make the housing styles of these three villages different are the distance they have with the economic hubs of Qazvin and the manner of government investment in these villages –an investment that, for the first time, made it possible to irrigate an area of more than sixty thousand hectares. However, the village of Hir, like hundreds of other mountainous villages, faced major difficulties due to its remoteness from agricultural and industrial centers and the lack of access roads. Therefore, often due to lack of living facilities and declining productivity, which is still ongoing, the flow of migration to agricultural, industrial and service sectors began. Today, the most populous village in the mountainous region (Hir) has a smaller population than the least populated village in the economic hubs (Figure 2).

Spatial and functional pattern

In the past, rural housing had gardens, farms, meadows, livestock, handicraft workshops and a place to process livestock and agricultural products, but today there are no

livelihood spaces in rural houses, and the only thing remained is a small yard next to the residential space. In the village of Hir, production in old orchards has remained traditional, but with the housing changes to the semi-urban during the past decade and the lack of a new method of creating livelihood spaces, these orchards will soon be destroyed.



F2. Demographic changes in the villages of Hir, Ziaran and Hesar Kharvan during 1961 to 2016. Source: Statistics Center of Iran.

In Ziaran village, traditional gardens have been greatly developed along the seasonal Ziaran River and turned into very beautiful villa gardens. However, as it is obvious, the garden of a villa is very different from the commercial gardens, because it lacks a production area and is mostly used as a resort.

In Hesar Kharvan village, before the economic changes, traditional gardens were considered as one of the productive elements in the livelihood of the villagers, but with the village being located within the agricultural and industrial hubs that took over the production, work and production in traditional gardens are no longer cost-effective. Moreover, these gardens have remained abandoned and have gradually come under the influence of industrial workshops.

Descriptive findings from the comparison of population and households using agriculture and animal husbandry show that 33% of households in Hir village are engaged in agriculture, while in Ziaran village this rate has reached about 15% of the population and in Hesar Kharavan has reached 25%. This shows that most of the villagers work in industrial and service centers and only those who were entitled by the Iranian Land Reform with the right of farming are engaged

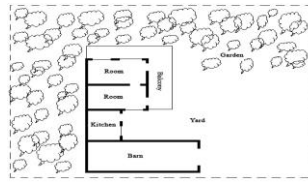
in agriculture.

A comparison between the number of residential and agricultural lands in each village per capita shows that in Hir village, traditional farmlands are more than industrial lands, but in Ziari and Hesar Kharvan, despite the increase in the per capita residential lands, traditional farmlands have reached almost zero. Finally, a comparative study between the three types of rural

housing formed in these years –traditional, transient and modern– shows that the village of Hir with 71% of traditional housing, has received the least impact compared to the villages of Ziari with 9% and Hesar with 21%. A reason of this intactness is the distance of this village with the economic poles, which makes it the only village to have the two elements of residential spaces and farmlands together (Figure 7).



F3. Traditional housing in the mountainous village of Hir.



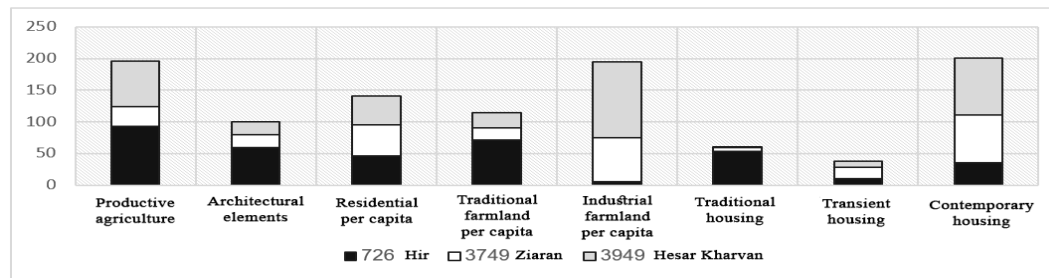
F4. Plan of a rural house with traditional horticulture.



F5. Modern rural housing in Ziari village (Villa).



F6. Modern rural housing in Hesar Kharvan village.



F7. A comparative study of demographics, per capita residential lands, traditional and industrial farmland, traditional housing, transient, modern (semi-urban) and the percentage of productive farmers in Hir, Ziari and Hesar Kharvan (Source: Statistics Center of Iran).

Architectural quality of housing in selected villages

As argued, we have seen that the economic role of the villagers in the Iranian society has been very strong and stable. However, the economic changes resulting from the industrial revolution of the West spread to the cities of Iran in the 1960s and its economic and social waves have loosened the economic ties between city and village. The economic approach with a positive return on investment for agricultural production caused livelihood spaces to be neglected in rural housing architecture. Thus, the architectural elements of rural housing, which are dependent on agricultural, industrial and service poles, underwent changes that were not expected by the planners of rural economic development.

The extent of impact is summarized in Table 1.

The impact of economic changes on the body of rural housing

As explained above, economic changes, which are the subject of this research, include changes in the material and physical well-being of human beings that is determined by knowledge and technology. However, we have seen that it is the interaction of skills and knowledge, technology, institutions and demographic factors that shapes the process of economic changes. The key conundrum in the process of economic change is the interdependent and complex institutional structure that characterizes the modern human environment. In a brief analysis of Table 2 (the process of effective economic changes) the following can be concluded.

Village	Geography	Status	Housing status	Quality and age of residential units (Rural Guide Plan)		Usage	Agricultural spaces	Housing quality
Hir	Mountain	Far from industrial, agricultural and service poles	Traditional	Ready for demolition (old)	54%	Livelihood centered	Residential field, agricultural field (barn, forage storage, processing livestock and garden products, garden and pasture), service field	One
			Transient	In need of refurbishment	10%		Resilient residential filed, traditional agricultural and service field	Two
			Modern	Recently constructed	36%	Residential	Residential field (semi-urban housing)	Three
Ziaran	Foothills	Near agricultural pole	Traditional	Ready for demolition (old)	5.3%	-	Residential field, agricultural field (barn, forage storage, processing livestock and garden products, garden and pasture), service field	One
			Transient	In need of refurbishment	18.9%	Residential	Resilient residential filed, traditional agricultural and service field	Two
			Modern	Recently constructed	75%	Villa, Garden villa	Residential field (Villas)	Five
Hesar Kharvan	Plain	Next to industrial pole	Traditional	Ready for demolition (old)	0.9%	-	Residential field, agricultural field (barn, forage storage, processing livestock and garden products, garden and pasture), service field	One
			Transient	In need of refurbishment	9.4%	Residential	Resilient residential filed	Two
			Modern	Recently constructed	89.7%	Residential	Residential field (laborers and outskirt houses)	Four

T1. Geographical location of case studies and the status of agricultural spaces and land usage in terms of quality.

Title	Impact	Type/Details	Impact on rural housing
Three non-economic sources effective on economic changes	Change in the ability of societies	Quality means the level of ability and skills of a community, the rate of population aging or the amount of population able to do work Quantity means the rate of population growth: - Permanent migration - Daily comings and goings between residence and work	Hir village: age and gender imbalance of rural families: migrating, changing the family structure, leaving the family from old age and not transferring the activity-living experience to the youth (reducing the productivity of the village) Ziaran village: Located in the mirage of agricultural poles of Qazvin plain, suitable communication network and easy access, activity in large agricultural centers Hesar Kharvan village: Located in agricultural and industrial centers near the city, cheap land and housing rates in the village, immigrants from remote villages, activity in industrial centers
		Use of new knowledge and technology in production in agricultural and industrial centers and poles Lack of support for traditional agriculture	Hir village: Lack of government support for traditional agriculture, lack of change and updating in livelihood areas (agriculture and livestock) Rural housing Ziaran village: removal of livelihood spaces (agriculture and livestock) from traditional housing and change of spaces according to new needs Hesar Kharvan village: abandoned traditional gardens, removal of livelihood spaces (agriculture) from traditional housing
		Abolition of the lord-servant institution and formation of the Ministry of Jihad Agriculture, Agricultural Bank, Islamic Revolution Housing Foundation as rural social institutions	Hir village: it only retrofits rural housing in the residential field (durability of new structures and materials) Ziaran Village: Strengthens and improves residential units, contemporary urban housing, villas and villa gardens Hesar Kharvan village: strengthens and improves housing, the influence of industrial workshops and small industrial livestock in the residential context of the village and the change of rural housing to suburban housing with dormitory function
	Changes in technology		
	Changes in social institutes		
Result	Urban-oriented economic policies, with the aim of producing food for urban dwellers in the concentrated agricultural and livestock sectors, have led to non-economic production in decentralized rural production centers, which has resulted in the elimination of livelihood spaces from rural housing. As in the villages that are under the influence of these centers and have enjoyed economic prosperity, livelihood spaces have been removed from their new housing.		

T2. The impact of economic developments on the body of rural housing in the villages of Hir, Ziaran and Hesar Kharvan.

Change in public institutions of society

In the past, the dominant social institution in the village was the lord-servant and tribal institution. Gradually, from 1929, new government-affiliated institutions were formed with the aim of centralization (incentive – science and knowledge - technology). Until 1962, with the occurrence of land reforms that announced the end of the lord-servant and tribal system and the

acceptance of modern developments, these three institutions operated under different titles for socio-economic management of the village with a tendency to integrate scattered exploitation units in villages and establish large agro-industrial units that are a manifestation of this approach in that time.

Lack of targeted planning for rural housing

Forty years of institutional performance

show that the lack of coordination between the three institutions (motivation, capability and technology), specialized demarcation between activities, and finally, following the goals of the neoclassical economy (mass production, higher profits and efficiency), have all reduced financial aids for agriculture and home livestock. The effects of these changes are felt in the architecture of rural housing by removing livelihood spaces from rural houses and the fact that villagers are not familiar with modern housing in rural areas. The most important sign of this failure is evident in the reduction of population in rural areas.

Therefore, the economic changes of the contemporary period, due to the inconsistency and non-synergy of institutions, have led them to distancing from local patterns and emerged new patterns in rural housing. In some cases, these changes have led to physical disorder and the inconsistency of housing with living and livelihood needs. As a result, many villagers did not benefit enough from the economic changes that were apparently planned to improve the lives of the villagers. In summary, economic change (E.c.) is a function of the interaction between the three social institutions and the approach of the incentive institution (i), in interaction with the institutions of science (s) and technology (t). These changes may have positive or negative effects on rural architecture and housing.

$$E.c.=f(i.s.t)$$

Thus, two approaches are proposed:

A) In the first approach (which is based on neoclassical economics or conventional economics, aimed at centralization and urban development), the creation of agricultural and industrial centers and poles has led to the creation of unproductive rural, suburban and semi-urban housing with dormitory function. In this study, we examined and analyzed the changes that occurred in the villages affected by this approach.

B) In the second approach (which is based on institutional economics, aimed at decentralization and rural and urban development), to achieve a type of rural housing that is livelihood-centered, this

research proposes the attraction of investors to improve livelihood spaces in rural housing, encouragement of villagers to learn more about agriculture, and provision of equipment and facilities for production and productivity with low water and low land.

Therefore, the only result of neoclassical approach is the poverty of villagers and rural housing. In the institutional economics, in addition to the necessary condition of forming three institutions to change the rural economy, the sufficient condition of applying the approach of incentive institution is also needed. This approach can activate the technological and scientific institutes, make the city and the village connected, and improve the rural economy and the architecture of livelihood-centered housing (Figure 8).

	Connection of rural and urban areas	Obviation of a large part of productive force in the country
Results of economic changes	Updating rural housing with regard to livelihood, production and resilience	Sub-rural housing, dormitory houses, semi-urban and non-productive houses
Institute of technology	Provision of equipment and facilities for production and efficiency with low water and land	Provision of equipment and facilities for large agro-industrial centers
Institute of science and knowledge	Training villagers about agriculture	Training villagers about agriculture without a purpose
Institute of motivation	Investment and improvement of productive projects in villages	Establishment of industrial and agricultural poles and centers
Aims of institutional framework	Decentralization and development of village and city	Decentralization and urban development
Economic system	Institutional economics	Neoclassic economics
Economy		

F8. The impact of economic changes on the resilience of traditional livelihood spaces in rural housing.

Conclusion

The findings of this research show that in recent years, on the one hand, the inadequacy of traditional agricultural and livestock activities and incomes, and on the other hand, the lack of living and livelihood facilities in rural areas, have led to rural migration to cities. In villages that are far from agricultural and industrial centers, the

quantity and quality of rural society has been deteriorated, and the type of livelihood and centers, cheap land prices and housing rates and also cheap transportation and easy accessibility have led the householders to change their job from agriculture to industrial and service jobs. Moreover, the reciprocal effects and functional relationships of cities with their surroundings and neighboring villages, which are under their influence, have led to different changes in various fields. As a result of these changes, villagers have become more aware of the interactions between the city and the village, and the cultural and social structure of villages have also undergone many changes. In this

housing has changed. However, in villages that are near the industrial and agricultural situation, the type of housing, which was once based on the sources of livelihood, is adapted for the new needs and changed to semi-urban dormitories. Therefore, economic changes have been able to cause different livelihood behaviors in the daily lives of villagers and consequently change the body of rural housing during the last five decades (Table 3). These changes affect the demographics (urban-rural immigration, rural population evacuation etc.), functional structures (such as technology) and institutions (which makes the foundation of agriculture unstable and expand unproductive activities).

Essential elements of human communities		The architectural structure of rural housing		
Economic changes	Changes in knowledge and science	Physical elements	Spatial arrangement	Functions
		Reduce the level of infrastructure Establishment of extended families Construction of residential houses with different materials, that are cheap and sometimes unsuitable	Changes in the dimensions and size of spaces Dominance of residential spaces Reduce or eliminate livelihood spaces	Destruction of old spaces Changing the function of spaces (old kitchen to modern kitchen, basement to refrigerator, bathroom inside the building) Lack of livelihood function
	Changes in technology	Lack of attention to aesthetics Use of new materials and new technologies in the construction of residential houses and rural housing services (dominance of urban materials) Failure to select architectural patterns based on cultural characteristics and background (elimination of indigenous materials) Lack of attention to climatic, cultural and social characteristics	Semi-urban housing Variety in spaces Change in spatial hierarchy Reduce the mass ratio of space by removing some spaces Predicting and allocating space for small agricultural implements and machines inside the residential area to the parking lot	Changing production livelihoods to services Elimination of oven, firewood, catchment, storage and workshop (consumer orientation) Remove stables from the housing space, add parking, moonlight and basement Lack of new technologies in the field of livelihood (traditional agriculture) Convert rural housing to a resort
	Changes in social intuitions	Public and government participation in rural housing resilience Construction and improvement of livelihood spaces The uniformity of the shape of the new housing	Separation of residential spaces and livelihood spaces in rural housing Dominance of urban housing pattern Creating a spatial gap between the old and new housing of the village	Change of rural livelihood to dormitory housing (lack of support for traditional agriculture) Reduction of area (reduction of traditional agricultural land per capita) Lack of native functional spaces

T3. Economic change and the architectural structure of rural housing.

Therefore, urban-oriented economic policies, aimed at producing food for urban dwellers in centralized agriculture and animal husbandry, have led to non-economic production in decentralized rural production centers, which has resulted in the elimination of livelihood spaces from rural housing. Moreover, "in order to be able to continue their life and growth, rural settlements need to keep pace with developments in other areas of society and improve their living conditions and environment with technology, socio-economic conditions and changed

environment around them" (Nolan and Lansky, 2017). Thus, to keep the remaining population in the village and to revitalize traditional livelihood-oriented housing architecture, the government and its affiliated social and economic institutions need to change their attitude. In addition to crop production, agricultural policy must address other goals, including creating sustainable employment, improving rural incomes, providing environmental services, and providing healthy food. The basis of having a resilient development in rural areas and

providing the means of livelihood for their people depends on the exclusion of villages from the monopoly of historical fabric and building heritage and consider them as dynamic and live areas.

Endnotes

1. Science and knowledge: In the quantity and quality of human beings
2. Technology: In the stock of human knowledge, particularly as it applies to the human command over nature.
3. Incentive: In the institutional matrix that defines the incentive structure of society

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