

Study of Economic Effects of Land Use Changes in Rural Areas Due to the Rural Development (Case Study: Surrounding Rural Areas of Rasht Metropolis)

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Abstract: Applied planning of land is a process in which the method of using land and the local – spatial diffraction pattern of land uses will be determined in order to provide welfare in the social life. The land use includes investigating the method of land use proportional to different activities such as health care, residential, administrative and commercial activities. The rural economy surrounds physical aspects of rural residents and includes all economic activities which meet their physical needs. In this article, we study the effect of land use changes due to the rural development on the rural economy. In the current research, we used a descriptive analytical method and the method of data collection was a combination of documentary and case studies. The research results indicate that land use changes have both positive and negative effects on rural residents' lives. Land use changes in rural areas under study have mainly occurred in agricultural areas of the rural context and passages and main roads; so, they will destroy potential agricultural lands and consequently negative economic effects will appear. However, land owners' satisfaction of the land change due to obtaining an economic interest more than the economic interest resulted from agriculture is considerable. Therefore, some solutions are proposed for maintaining rural residents' satisfaction of the land use change in order to partly reduce its negative economic effects.

[Mohammad Bagher Ebrahimi and Hossein Rahimi. **Study of Economic Effects of Land Use Changes in Rural Areas Due to the Rural Development(Case Study: Surrounding Rural Areas of Rasht Metropolis)**. *J Am Sci* 2013;9(6s):122-127]. (ISSN: 1545-1003). <http://www.jofamericanscience.org>. 18

Keywords: village, rural development, land use change, economy.

1. Introduction

Studies and researches on villages and issues relating to them are important: first, due to a village's role in production and supplying raw materials for agricultural and livestock sector and second, due to the idea of Todarou that "an ultimate solution for the urban unemployment and the population diversity is rural development." By creating an appropriate balance between urban and rural economic facilities, as well as creating a proper condition for comprehensive participation of the public in attempts for the national development, and enjoying its benefits, developing countries take a huge step for the realization of the true meaning of development. Therefore, some believe that "the Third World will develop through rural planning and rural development" [1]. How to develop lies in applying numerous policies in economic, social – cultural and political – security areas which contain natural resources and human resource management to infrastructure and agricultural affairs, and other activities which are considered in the rural development [2]. Since development is a concept of value and a multidimensional flow, it requires fundamental changes in the social construction, national institutions and public attitudes, accelerating the economic grows, decreasing the inequality and eradicating the absolute poverty [1].

Rural planning includes providing required facilities in order to develop a village comprehensively to remove differences between urban and rural areas in different contexts [3]. The land use refers to the present condition which is appeared in terms of one of the usages such as agriculture, garden, forest, grassland, meadow, mining and industry, and residential (urban and rural) usages. The rural economy includes physical aspects of rural residents and all economic activities which meet their physical needs. Land use changes in rural areas have a direct effect on the village and therefore they are important.

2. Land Use Change

The land use change includes a change in the method of usage and a change in the method of distribution and spatial patterns of activities and usages [4]. In other words, the land use change means a change in the method of utilizing a land which is not necessarily a change in the land surface, rather a change in the density and management of the land [5]. Nowadays, there is a universal attention to the control of land use development and the land surface coverage which is mainly due to the political regulations regarding the land use and needs enough new information about the land use development's process. In order to answer connected questions such as why, when, how a land use change occurs, many

theories and patterns were proposed and implemented for a period of 200 years [6]. The reason of the land use change is different between developed and developing countries. In developed countries, the land use change results from economic reasons such as the large-scale agriculture, urban development and an increase in the need for maintaining the environment's quality for present and future generations, but in developing countries, the fast growth of population, poverty and economic situation are fundamental issues [7]. Study of Iran's official census in the past 50 years shows that the rural and urban population's share from the total population in the country has changed and the ratio of urban and rural population changed from 68.5% and 31.5% in 1956 to 71.5% and 28.5% in 2011, respectively. These relative changes in the population of Iran indicate a rapid growth in the urbanization, city-like villages, village escape, the process of more unbalanced spatial distribution of the population, etc. So, the immigrant acceptance of villages which is a modern criterion for 50 years happens in most villages [8].

3. The Effect of Land Use Change on the rural economy

The rural economy includes physical aspects of rural residents and includes all economic activities which meet their physical needs. The rural economy is based on agriculture and livestock, and industrial activities and services expanded narrowly in villages over the last few decades. Rural industries have an important role in the helpful and effective employment of the rural development due to their undeniable role and position from one hand, and they have an important role in the rural development due to their close link with the agriculture and service sector from the other hand [9]. One of the consequences of a change in the method of land use in a village can be a change in the economic activity of that village. In other words, in villages with changes in the use of agricultural areas which appear as residential, commercial – service and industrial functions, considerable changes have occurred in the economic condition of rural residents. This special situation most probably happens in villages in the domain of big cities [10]. An increase in villages' immigrant acceptance cause an increase in the land and housing demands, and consequently an increase in the cost of agricultural lands in villages and they turn to residential, service and industrial lands. Accordingly, farmers will remove their agricultural and garden lands from the agricultural economy by maintaining and protecting them more carefully for the stabilization of ownership or possession. Gradually, changes occur in the method of land use from agricultural use to residential, commercial,

industrial, and so on by selling the whole or part of rural lands, [11]. Uncontrolled and non-normative growth of metropolises by destroying agricultural lands, destroying green spaces and even the increase of marginalization leads to considerable changes in the use of suburban lands and even provides the land use of villages under its domain. It is obvious that changes in usages without relying on scientific evaluations can result in numerous problems, especially environmental ones. In addition, a negative consequence of these changes is prevalence of land trade with a higher cost. Generally, nowadays, physical engineering of villages and in other words, improvement of villages not only has an economic social investigation of villages, but also provides a guidance pattern for physical development of villages by different guidelines while preparing the guiding plan for villages [12]. But, in villages under the domain of metropolises, this issue was partly influenced by reciprocal relationships (between metropolises and villages) and the guidance pattern of physical development of villages, especially the land use of these villages is influenced by metropolises.

This article indicates that since the rapid process of urbanization and its different consequences, especially physical expansion of cities and swallowing agricultural lands around by considering the criterion of rural immigration at a macro national level is very important, this issue in rural areas should not be ignored. However, the objective appearance of villages' physical expansion may be slow and insignificant due to their low population and distribution, but due to the frequency (more than 60,000) of these settlements in our country (Iran), they are inevitably very important.

4. Purposes

The main purpose of this article is to study differences of the land use resulted from the development of villages under the domain of Rasht metropolis and the development of rural economy in these changes.

5. Problem Definition

Nowadays, discussions and concerns about environmental changes and land use changes are considered seriously. In this situation, the land use turns to an important issue. The land use is an instance of human influence on the environment [13]. The land use has certain economic features. For example human activities such as production, consumption, investment, recreation, etc. require using the geographical space [14]. Economic activities appear in different forms such as housing, providing facilities, infrastructure construction, agricultural lands and green spaces in geographical spaces. In the northern provinces of Iran, especially

in coastal areas, changes in the land use have become a significant serious issue during the last two decades. The rapid growth of Rasht metropolis and consequently, the overflow of a part of population to the villages under its domain with the purpose of work and activity, and or land and housing preparation, it causes main changes in the type of economic activities of rural residents as well as the land use of these villages. It is clear that negative consequences of such changes which mainly occur without planning and thinking, include the prevalence of land trade and agricultural lands' leave from the production cycle in order to sell the land with a higher cost. Therefore, farmers who owned lands will trade lands, prevent from investing in their own lands, and prepare lands just for sale [15]. On the other hand, because of immigrant acceptance of some villages under the domain of a city and lack of certain references and institutions to control constructions in rural settlements as well as lack of a successful guiding plan, these villages cause agricultural lands to change their use due to the lack of rural management at the national level.

6. Hypotheses

Hypothesis: "land use changes resulted from the rural development of Rasht metropolis had an effect on rural residents' economic situation."

It seems that a change in the land use of villages under study has a relationship with factors such as new job opportunities, farmers' income, lands' cost and housing quality.

7. Research Method

In this research, data analysis was done by a quantitative method in terms of descriptive – analytical (inferential) data, so that the descriptive

method was used to study land use changes in villages around Rasht metropolis and the analytical (inferential) method was used to explain economic effects of land use changes on rural residents' lives. Also, in a discussion through analytical method, Pearson correlation was used because of the large number of sequential study data as well as the number of samples. In the analysis of information in this research, the Spss software was used to analyze economic effects of land use changes on rural residents' lives and also geographical information system (GIS) software was used to explain land use changes in different periods. In the library studies section, study experiences of this subject were investigated and thereby some indices related to economic effects and indices related to land use changes were selected from which we can refer to indices such as new job opportunities, farmers' income, lands' cost and housing quality. The statistical population of the study was villages under the domain of Rasht metropolis. The statistical population of the research includes 21085 families who reside at 10 villages around the city. According to Morgan's table, the sample size is 175 which are selected by random sampling from the above rural residents.

7.1. Relative Situation of Villages under Study

The area under study is in Guilan province and Rasht city (Figure 1). This city which is about 1427 square kilometers wide is located at central areas of the province. This city has the longitude of 49,36 and latitude of 37,18 with the average of 8 meters height above the sea level. The situations of villages under study are shown in the figure 2.

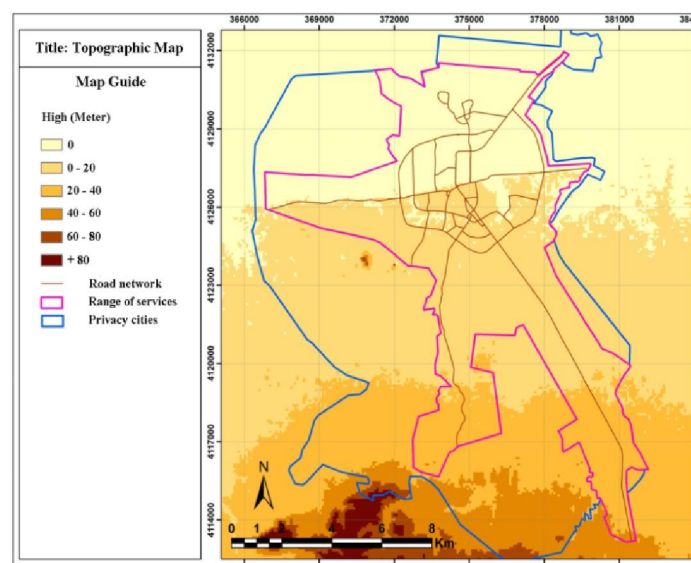


Figure 1. Topography of Rasht city and its suburb

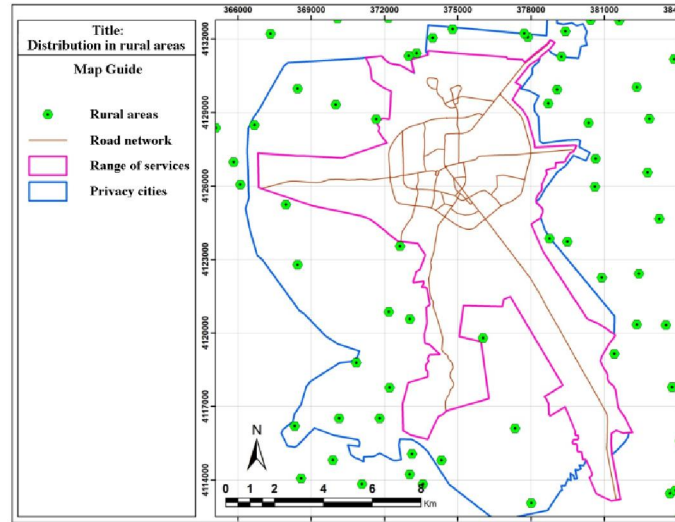


Figure 2. Situations of villages located at Rasht suburbs

8. Research Findings

8.1. The role of land use changes due to the rural development in creating job opportunities

The questionnaires’ results indicate that 24 persons (13.7%) in the sample said that changes in their land use had a very low effect on their job opportunities. 41 persons (23.4%) said that these changes had an average effect, while 110 persons (62.9%) mentioned that these changes had a large and very large effect.

Spectrum	Number	Percent
Very Low	8	4.6
Low	16	9.1
Medium	41	23.4
High	59	33.8
Very High	51	29.1
Sum	175	100

Table 1. The amount of the effect of land use changes on creating new job opportunities.

8.2. The role of land use changes due to the rural development in the increase of farmers’ income who reside at suburbs

7 persons (4%) of rural residents said that the role of land use changes in the increase of their income was very low, and 22, 41, 58 and 47 persons mentioned this role low, average, large and very large, respectively. These persons comprised 12.6%, 23.4%, 33.1% and 26.9% of total respondents, respectively.

Spectrum	Number	Percent
Very Low	7	4
Low	22	12.6
Medium	41	23.4
High	58	33.1
Very High	47	26.9
Sum	175	100

Table 2. The amount of the effect of land use changes on the increase of rural residents’ income.

8.3. The role of land use changes due to the rural development in the increase of lands’ cost located around the city

According to findings of the questionnaires, 40 persons (22.9%) in samples mentioned that the role of land use changes due to Rasht urban development in the increase of lands’ cost around the city was low and very low and 27 persons (15.4%) mentioned that this effect was average. Also, 108 persons (61.7%) expressed this effect large and very large.

Spectrum	Number	Percent
Very Low	9	5.2
Low	31	17.7
Medium	27	15.4
High	50	28.6
Very High	58	33.1
Sum	175	100

Table 3. The amount of the effect of land use changes on the increase of lands’ cost around the city.

8.4. The role of land use changes due to the rural development in the increase of housing quality

Results of samples' survey showed that 40 persons (22.8%) mentioned that changes in their land use did not cause any increase in their housing quality. 29 persons (16.6%) expressed this effect as an average effect while 106 persons (66%) mentioned it as a large and very large one.

Spectrum	Number	Percent
Very Low	10	5.7
Low	30	17.1
Medium	29	16.6
High	71	40.6
Very High	35	20
Sum	175	100

Table 4 – The amount of the effect of land use changes on an increase in the housing quality

In order to study the relationship between land use changes and the economic situation of rural residents, Pearson correlation coefficient test was used. The results of this test indicate that according to Pearson correlation coefficient (0.52) with the reliability of 0.99 and error level of <0.01, there is a significant relationship between two variables of land use changes due to the rural development of Rasht suburbs and economic situation of rural residents. It means that the economic situation of rural residents has changed in proportion to changes in the land use. Therefore, the first research hypothesis will be supported (table 5).

Correlations			
		User changes	Rural economy
User changes	Pearson Correlation	1	-.527**
	Sig. (2-tailed)		.000
	N	175	175
Rural economy	Pearson Correlation	-.527**	1
	Sig. (2-tailed)	.000	
	N	175	175

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5 - Results of Pearson correlation coefficient test in order to determine the relationship between land use changes and rural residents' economic situation.

Of course, in the interpretation of this test it should be mentioned that although according to the above said test, land use changes due to the rural development affect the economic situation of rural residents, this effect is much in terms of components such as an increase in earnings due to selling or commercially utilizing lands, etc. which rural residents benefit from and is temporary. But,

generally, it has some negative points, including destruction of high quality agricultural lands and consequently, the decrease of agricultural production in the city and the province, as well as ecological instabilities and their effects on the aesthetics of the area, and also the increase of marginalization, fine-grained building components, and the increase of uncontrollable nonstandard constructions around the city.

as items	Very Low	Low	Medium	High	Very High
new job opportunities	8	16	41	59	51
farmers' income	7	22	41	58	47
lands' cost	9	31	27	50	58
housing quality	10	30	29	71	35

Table 6 – The amount of economic effects on land use changes due to the rural development around Rasht metropolis.

9. Conclusion and suggestions

The rural development and consequently the development of villages' economy in Iran are clear according to the position, importance and role of the rural society, problems which the society faces, and the country's situation. Villages have a considerable share in the national economy, but because of their low benefit from the national economy, they deserve more attention and consideration. The rural economy is influenced by many factors of which the most important one is land use changes due to the rural development. Land use changes have both positive and negative effects on rural residents' lives. Positive economic effects include changes in the use of lands inside the rural context and around villages under study, and an increase in the income level and employment, especially for youth. Land use changes have also negative effects, including a false increase in the cost of lands and housings, and finally an increase in life expenses. In addition, changes in agricultural lands' and gardens' use and starting to construct inside them, and consequently an increase in the structural context of rural settlements are also negative consequences of land use changes, and they can create problems in future, such as the destruction of more lands inside the rural context and around it. According to the researches carried out, land use changes in villages under study mainly happened in agricultural areas around the rural context and near passages and main roads.

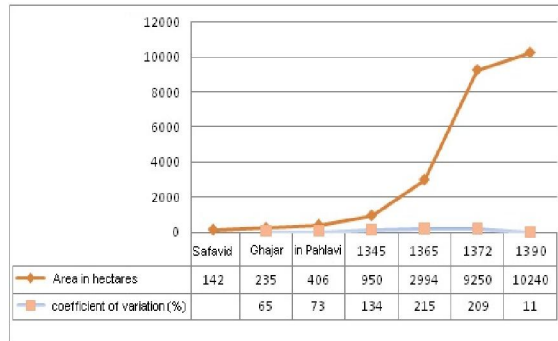


Diagram 1. Diagram of the process of structural expansion of Rasht city and its suburbs.

However according to land owners' satisfaction of land use changes due to obtaining economic benefits more than economic benefits resulted from agriculture, land use changes cause the destruction of potential agricultural lands and consequently, the appearance of negative economic effects. For this reason, the following solutions are provided:

- The decrease of the pressure on villages under the domain of Rasht metropolis from population point of view using the decentralization policy, creating a spatial balance and developing small satellite towns around the aforementioned city.
- The governments' involvement in the management of lands, especially the informed control and guidance of proper usages.
- Using improper lands for new constructions.
- Necessary preparations for preventing intermediation and the increase of hidden economic activities in trades as well as a false increase in the cost of lands.
- Paying attention to rural areas' capacities and preventing the destruction of agricultural areas.
- Preparation and implementation of the guiding and comparative plan of villages.

We hope that in the path of rural economy's development and improvement, much attempts are directed toward recognition of challenges relating to land use changes and preventing them from happening in order to use rural economy's opportunities.

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