Spatial Organization of Rural Residences in Northern Villages of Caspian Sea
(Case Study on Masal County-Guilan)

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Abstract: In this paper, we have considered programming for organizing rural residences in northern villages of Caspian Sea (in the west of Masal County-Guilan) and in direction to access to the answer of the main question of this research, effective factors in organizing and programming for arrangement of rural residence environments and optimization pattern for proper accessibility, have been assessed and recognized. There are disturbance and irregularity in rural residence environments, specifically in western villages of the county and the followed rural districts, suggestive pattern which is considered is to offer a proper model for settlement of the residences on the basis of geographical and spatial hierarchies, so that the village as the smallest geographical unit can have a special regularity in establishment of the residences and the resident people can benefit from different kinds of rural services with adequate accessibility. One of the inappropriate consequences of the state developmental policies in recent decades is interruption in spatial structure and disharmony in residence systems that the unpleasant results of it in addition to showing off in national level, it is observed in lower levels (region); so that in the studied region, there is interruption in spatial structure in form of improper spatial distribution of population, activities and possibilities, lack of mediator and complementary assemblies and existence of illegal relations of smaller residences with greater centers and cities. Although the main object of this paper is to offer a proper pattern for organizing the residences in direction to appropriate accessibility for the residents and an ideal arrangement for rural space, but the most important action is to improve the residence situation of the villagers and benefit from a proper residence environment, and there should be a specific arrangement and space until the villages are as the living environments and residences for human beings.

Key words: Rural Residences – Spatial Organization – Accessibility – Masal County – Guilan.

INTRODUCTION

Tendency toward villages and ruralism is a phenomenon that in addition to economical and production dimensions, residence role of it has been considered as well. Rural residences as the smallest geographical unit has been formed under influence of different factors such as natural, social, cultural-historical and economical factors in geographical bed and in form of relationships between human and the environment. Considering variety of geographical rural environment, different forms of rural residences and villages have been established and differences existed between them is arguable for rural development.

Demageon in year 1339 (1960): To classify different types of rural settlements, morphological criterion is used. This criterion can be used to classify group residences and linear villages, massive villages and star-shaped villages can be distinguished, but explanation of such a categorizing is weak.

Shulter in year 1906: Settlement geography is focused on residence relationship of the human with land and house groups in rural districts and cities are important not the individual houses and also general network of the residences have a greater importance in compare to form and situation of individual cities or villages.

Smith 1965: The geographilogists increasingly attempt to interpret and define different forms of rural residences as a function of land, social and economical relationships in a specific environment in a determined era.

Franken Burg 1966: In the past rural residents were members of distinguished local communities. In other words, residents of rural places have comprehensive interests and economical profits which are the same for all of them or complete each other.

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Paridokht Fesharaki 1373 (1994): Forms of houses and their sequence on the land are the main components of rural perspective and are essential for full and appropriate comprehension of morphology of rural environment and knowledge about creation of villages, small villages and farmsteads. Guide key for distribution of residence pattern is single and this aspect is a different cultural perspective between different nations and regions.

Khalil Kalantari 1380 (2001): A single region is not a scattered and irrelevant residential system, but a connected network of social, economical and physical relationships. This connective process is formed through relationships between rural spots and urban network.

Masoud Mahdavi 1384 (2005): Clanship and exploitation methods have had an effective role in creation of residences in Iran. Rural community is convergent because of special geographical and social conditions. Therefore, tendency toward mutual exploitation from land has been among the villagers and caused the gathered villages.

Lack of an efficient and regulated sequence in direction to proper distribution of services between population centers (urban and rural) on the basis of capabilities, strengths and requirements leads to the lack of balance and occurrence of severe opposition between rural domains in Iran. So, reorganization and giving balance to the environments seems a necessary task. Coordinated with public process governed on rural residences in the country, in the limited studies range, lack of system regulated by spatial organization of rural residences is considered as an important issue. Therefore, to solve or modify the existing problems, decrease of location-spatial inequality and organization of spatial system for settlement within the framework of optimization pattern and resulting from regional capacities and realities, is considered the strategic goal and message of this research.

In this paper, the author is paid to offer an optimized pattern to organize rural residences in Masal County by benefiting from the theories, experiences and resources, subjects such as project –specifications of the studied region, recognition, analysis and explanation of the rural residences and finally while offering an optimized pattern to organize the residences, came into conclusions.

MATERIALS AND METHODS

The Studied Region:
The studied region, Masal County, is one of the northern counties of Caspian Sea in North of Iran and is located in northwest of Guilan Province. Masal County is located in coordinates of 37 degrees, 15 minutes up to 37 degrees and 35 minutes, northern latitude from the equator and 48 degrees and 43 minutes up to 49 degrees and 14 minutes eastern longitude from meridian of longitude. Breadth of this county is currently 486 km², maximum length of Masal from east to west is 38 km and its width from north to south is 10-13 km, which in average in plain regions has an altitude of 20 m from high sea (geoids) level.

From unevenness point of view, it has been formed from three areas of plain, mountainside and mountainous. Population of this county is 48091, 35.6% of the population is including city dwellers and 64.4% is including the villagers. This county has 98 villages and hence, about 70,000 hectares are forest and pasture and 7,250 hectares is under cultivation of rice and 3,983 hectares is garden lands. Annual rainfall in this region is 1000-1400 ml.

Method of Study:
Considering subject of the research, the required information have been used through library work – study on deeds and documents available in departments – field studies (direct observation-interview) completion of questionnaire in subjects related to the research and SPSS statistical software for analysis of the questionnaires and statistical method and index model of weight centrality. For exact recognition and programming in rural districts, the theories offered in this field have been used.

Recognition, Analysis and Explanation of Rural Residences:
One of the roles of rural residences in the studied region is providing life facilities and supplying essential needs of the villagers. Organizing rural residences can cause rural development; because rural development is a strategy for improvement of social and economical life of the villagers and is a comprehensive attempt to decrease the poverty and organizing of the residences should be a change in direction to improve conditions for majority of people, and should be coordinated with requirements of villagers and accordant to life conditions and natural environment of the village. Spatial distribution of residences existing in the studied region has a special irregularity that is the main obstacle for accessibility of the villagers to foundational and exterior services and also benefiting from accessibility to the communicative ways, that with arrangement of the residences, a proper process can be established in direction to accessibility so that offering the services would be facile and also a step in direction to development should be taken.
Factors Effective in Formation of Rural Residences:
1- Population Factors:
On the basis of information gained from the questionnaires rural families of Masal County, only 10% of residents of this county are immigrant and the rest are the primary residents of this county, and average duration of family residences reaches more than 100 years. Now, because of appropriate geographical conditions and agreeable living factors, many immigrants have entered this region and reason of forming villages of this county has been natural growth of population and therefore several constructions. Now there construction in some regions has a proper process and is formed out of the programmed pattern, but in most regions, scattered pattern of these residences shows special irregularity which hardens both accessibility and offering services.

2- Economical Factors:
Among economical factors effective on formation and development of villages, low price of land and house in this region can be pointed out. On the basis of gained information, because of reasonable price of land, ethnical and tribal connections and proper income out of agriculture and other economical activities has quickened formation of the rural residences so that many immigrants have entered this region now and the studied region is considered as one of the populous regions.

3- Ethnical and Tribal Cultural Factors:
On the basis of information gained from the questionnaires, many people from population resident in this region have immigrated to this region according to cultural and tribal factors and take actions toward construction of different residences that this situation may face crisis due to lack of proper programming and no special regularity of residences. According to the gained statistics, a few numbers of people have attended to construct of residential places according to program and this process may make disorders in regularity of the residences that in the future will face disturbance in dispersion of the residences and should be organized.

RESULTS AND DISCUSSION

Index Model of Weight Centrality:
One of the techniques for determination of centrality of the residences is Index Method of Weight Centrality, but this index specifies variety of applications in each region, and by using variety of the indexes, can consider an application for the residence. In this method on the basis of contrary number of variety, weight is given and then proceeds to ranking of the residences. The more rates of these indexes, the more application share, the more developed residences. Consider that the indexes should be unidirectional.

On the basis of results of application of this model which has been proceed by using 40 indexes in 4 groups, rural districts which have more villages and therefore more population, have more centrality index and as the first rank village district and thereupon we reach the following ranks. In this method, we find central residence spots and specify spatial scattering of central spots and their influence district.

Table 1: Classification of rural residences, city of Masal by using the Weight Centrality Index

<table>
<thead>
<tr>
<th>No. of Villages</th>
<th>Performances</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Village of Shanderman 40</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>37</td>
</tr>
<tr>
<td>Village of Sheikh Neshin 16</td>
<td>1 11 3 4 2 1 1</td>
<td>24</td>
</tr>
<tr>
<td>Village of Houmeh 16</td>
<td>0 6 2 3 2 1 0 9 5 5</td>
<td>21</td>
</tr>
<tr>
<td>Village of Masal 26</td>
<td>0 7 0 3 0 1 4 3 16</td>
<td>16</td>
</tr>
<tr>
<td>Total Performances T</td>
<td>0 12 2 3 1 0 5 2 1</td>
<td>23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weights c</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 100 100 100 100 100 100 100 100 100 100 100</td>
</tr>
<tr>
<td>3 4.44 14.28 8.33 12.5 50 50 4.34 100 7.69</td>
</tr>
</tbody>
</table>

Table 2: Calculation of the Weight Centrality Index

<table>
<thead>
<tr>
<th>No. of Performances</th>
<th>Centralized Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8 9 10</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td>Village of Shanderman 40</td>
<td>3.44 4.34 7.69 8.33 12.5 14.28 50 50 100 100 100 100 100 300.58</td>
</tr>
<tr>
<td>Village of Sheikh Neshin 16</td>
<td>3.44 4.34 7.69 8.33 12.5 14.28 50 100 100 100 100 100 100 100 100</td>
</tr>
<tr>
<td>Village of Houmeh 16</td>
<td>3.44 4.34 7.69 8.33 12.5 50 50 90 86.3</td>
</tr>
<tr>
<td>Village of Masal 26</td>
<td>3.44 4.34 7.69 8.33 12.5 36.3</td>
</tr>
<tr>
<td>Total Performances T</td>
<td>100 100 100 100 100 100 100 100 100 100 100 100 100 523.76</td>
</tr>
</tbody>
</table>
Table 3: Classification of the Residences based on the Centralized Index

<table>
<thead>
<tr>
<th>Classification of the Residences</th>
<th>Index of the Weight Centralization</th>
<th>No. of Villages</th>
<th>No. of the Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade One</td>
<td>300.58</td>
<td>40</td>
<td>11227</td>
</tr>
<tr>
<td>Grade Two</td>
<td>100.58</td>
<td>16</td>
<td>6545</td>
</tr>
<tr>
<td>Grade Three</td>
<td>86.3</td>
<td>16</td>
<td>9780</td>
</tr>
<tr>
<td>Grade Four</td>
<td>36.3</td>
<td>26</td>
<td>5544</td>
</tr>
</tbody>
</table>

Table 4: Classification of the Residences based on the Centralized Index

<table>
<thead>
<tr>
<th>Amount of Grade Index of the Residences</th>
<th>No. of the Population</th>
<th>District</th>
<th>No. of Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade One, 300.58</td>
<td>300.58</td>
<td>40</td>
<td>11227</td>
</tr>
<tr>
<td>Grade Two, 100.58</td>
<td>100.58</td>
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<td>Grade Three, 86.3</td>
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<td>16</td>
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</tr>
<tr>
<td>Grade Four, 36.3</td>
<td>36.3</td>
<td>26</td>
<td>5544</td>
</tr>
</tbody>
</table>

Fig. 1: A sample of accessibility sequence in the County (Masal)

Based on this model the villages which have more population require more services to be offered and with a complied planning we should execute the development policy of villages which are placed in the center. There are obvious differences between villages with grade three and four in the manner of rate of weighted index and this case shows the irregular scattering of residences in these counties.

Investigation on every village in this county indicates that whatever we are becoming far away from the center of the district or are approaching to the mountainous villages, the distribution of the facilities are deducted and we are obliged to determine the influence district for these villages. A focal village should give serve to other parts which this, by itself, requires a special organizing. With respect to the requirement of each village, we can offer special advantages in this model and organize the residential parts based on those services.

Optimal Model for Organizing the Rural Residences:

In fact, the plan of rural residences and environments organizing is a planning schedule for the under-studied limit which can be mentioned as a comparative and comprehensive plan of the Counties. The objective of this plan is to partially assess or more contemplation on village comparative suggestions in various dimensions, in limit of District up to the village area in order to get to the stable rural development.

As an example which has been considered in this plan, we can mention these cases: deliberating and proportionate the system of stability location and the activities of welfare services distribution and logistic of production based on the hierarchy of the structural divisions, offering the schedule and economical plan.

Nowadays, fair accessibilities to land and optimized usage of it and organizing of location are one of the essential factors of permanent development. Main content of it is to make balance between economical dimensions of development, physical and living environmental dimensions and is based on responsibility upon needs and requirements of the future generation. Organization scheme for rural residences is prepared in order to coordinated and harmonious develop of agricultural, industrial and service activities via appropriate distribution of population, activities and optimized settlement of services in rural environments coordinated to urban distribution network system and is a proper bed for permanent development of rural environment and organization of rural services and installations and laying the foundation of appropriate settlement system for rural residences with population dispersion. In addition, the villages exposed to natural events dangers such as earthquake, flood and earth drift are specified and techniques for preventing them are offered.
Constructional Problems of Villages:
Generally, rural construction has some problems that the most important of them are including:

1- Scattering of villages
2- Inaccessibility to high qualified constructional materials
3- Budget and credits limitation
4- Unceremoniously observation on rural constructional projects by some executives and organizations.
5- No strict law
6- Low permanent stay of people in villages

Way Priority in Preparation of Organization Scheme of Rural Residence Spaces:

1- Susceptible to develop regions in different dimensions that these talents have not been performed for different reasons.
2- Regions that have specific scattering and deprivation and investigation and organization of them are necessary.
3- Regions which are exposed to natural accidents.
4- Populated regions in which, immigration processes are current, because of constructional, economical and... programs.
5- Susceptible regions with economical potentials that because of inappropriate population, their economical potential and capacities cannot be exploited.

There are needs for comparative studies on the basis of comprehensive plan in districts that have a comprehensive plan for the county.

Generally, existence of the following challenges, rural development programs made troubles for achievement of permanent development programming considering the available social-economical, constitutional-management and location-spatial structures:

Economical-Social Challenges:
Severe dispersion of rural population spots, number of population centers, being small and their instability.
Lack of existence of able and motive participative structures (non-governmental organizations) for the rural communities
Inappropriate situation of land ownership and agricultural exploitation system
Lack of social cohesiveness between rural micro producers
Unbalanced relationships of city and village and consequently undevelopment of rural society
Shortage of organizations and humanity organs for partnership in rural development
Difficulty of keeping the population in rural environments because of economical and social difficulties
Tendency of the villagers toward cities which is the threatening factor for rural development

Constitutional and Structural Obstacles:
Domination of district-orientation structure (with an emphasis on comprehensiveness and spatiality of the programs) over totality of the programs.
Lack of cohesive and efficient relationship between executive organizations in direction to achievement of goals of the program.
Existence of concentrated management structure (from high to low) while regional admission and make the project provincial.
Existence of concentrated spatial structure in location-spatial system of the country and importance of urban centers in compare to rural residences.
Unbelief of some decision makers in programming structure of the country in rural development and lack of comprehensive program for rural development.
Lack of coordination between organizations and centers responsible for rural development and interference of their duties.
Disorganization in land management and efficiency of the lands.
Lack of long-term and applied programs for measured organizing of rural centers and spaces of the country.
Lack of existence of a clear legal place in the field of rural programming in the country.
Lack of a specified pattern and model for rural development.

Defective programming levels in the country in form of lack of programming in local level with no accurate separation of programming responsibilities in national, regional and local levels.

Programming in direction to recognition of central villages for offering appropriate and required services, establishment of nonagricultural occupations and development of rural industries, integration of farm lands, decrease of immigration of villagers, development of human resources and … can solve the challenges existing in rural development to some extent.

Conclusion:

In all developing countries, rural technology or skills are really retarded that the main reason can be isolation of rural regions from urban centers and industrial agriculture. Technical improvement and advancement are among rural activities that can make occupation in nonagricultural lands. Therefore, increasing need for regional programming in direction to union of urban and rural regions, technical renewing and general reforms is perceived. Programming in direction to identification of central villages for offering appropriate and required services, making nonagricultural occupations and development of rural industries, consolidating of agricultural lands, decrease of immigration of the villagers, development of human resources and … can somehow solve challenges existing in rural development. For not practicing of assembly scheme in Iran, the villages should be identified for offering services. Proper balance in spatial system of regions for fair distribution, minimum possibilities and services necessary for rural individuals should be established.

Regarding very small villages, human development and services should not be seen merely from economical point of view.

Attempts should be done in direction to combination of rural industries within framework of overall national programming and in direction to encourage of new and small-scaled industries in the village.

Mutual partnership of villagers in plan, programming, execution and assessment of the programs is necessary for getting practiced and being successful.

Assessment on needs of people in the studied region before programming should be an unavoidable task. The current pattern, for having mountainous and plain conditions of residential spots, is extendable to other spots as well.

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