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Surveying and Analyzing of Rural Societies' Social and Economical Behaviors on Utilization Watershed Natural Resources in the North of Iran (Vazroud Watershed) - Case Study in Noor City

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Abstract: The spatial organization of the natural resources in the north of the country has been being changed due to nationalization of forests and ranches for over four decades, destruction rate is increasing everyday. Governmental efforts to stop destruction crisis and reconstruction of the organization have been made, but unfortunately none were prevailed. As a pilot of the same watersheds in the north of Iran, the stakeholders' social and economical structures in different humanitarian areas in Vazrood watershed were analyzed by this research in order to have an understanding of their dependence on the natural resources of the pilot area and consequently its impact on the formation of spatial behaviors on using such resources. The statistical society in this research includes 572 households residing in the plains, 133 in forests and 509 in grasslands. In each region 35, 30 and 30 household chief as research samples, through systematic random sampling were selected respectively and handing out questionnaires, required information was gathered using description and receptive statistics methods and SPSS software package research consumption were tested. Results for comparative T-test from recognition point of view showed that temporary residents in the watershed had a thorough understanding and relation with economical and social structures of the urban and rural society in which they lived. Permanent residents' dependence on natural resources of the pilot was much more than the temporary ones. This shows that the permanent residents have more various coalitions with the forest resources at the corners of the villages.

Key words: Spatial behavior · Economical and social structures · Behavioral Kingdom · Vazroud watershed

INTRODUCTION

Statistic figures show that 1.5 million hectares of the woods in the North of Iran have declined, since 1963. Experts believe that it is because of the existing over 3401 villages with the population of about 464500, which keep and raise local livestock in 5797000 livestock unit and 33107 husbandry units, therefore as the last push, to rehabilitate and restructure the spatial organization, the Islamic council parliament had ordered the government to buy the livestock inside the forests through a six-year plan called " protection of the Northern woods" and take them out of the woods budgeting from the national and provincial credits Referring to both permanent and temporary stakeholders as forest settlers causes them to be qualified to get facilitated so that natural resources could be kept away from the danger of exploitation [1].

Permanent residents are not benefited from it due to their dependence on the natural resources, but the condition is totally different for the temporary residents. The results of the study in Albania shows that communism fall destructive activities on natural resources did not stop and because of abuse trees wood as fuel, legal cutting of the trees, uncontrolled grazing and government poor supervision on utilizing natural resources, 15 percent of forests have been destroyed since1999. The same problem occurred in Southwestern Ethiopia since people rushed towards the woods,

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chopped down the trees and cultivated coffee, clay lands were bare and exposed to erosion [1-2].

After peoples' broad complaints in India called, Chipko movement, the government passed a law called " incorporate forest management" (IFM) on woods protection and management to stop uncontrolled tree cutting by companies of forest utilizing in 1990. in brazil the government taking national forest policy also reinforcement and organizing current industry dependency on private forests started to make the wood –producing companies interested in making required roads and contracts with the local inhabitants in the forests to make timbers [3] Studies show such destructive utilize of the forest resources, according to a research in Band-e-pay region in Babol rangelands with and without trees are utilized to feed the livestock during nine months of the year, in six elevation level called "Qeshlaq, Mahsar, Raj-e, Pertas, Perkouh, Sakouh and Sarkouh". Another range of researches in 14 Northern watersheds in Iran on 260 sample, show that in 48% of the villages husbandry is the prior activity and a total of 67% of the households keep livestock [1-4].

Another research in the same watershed a prevailing activity is introduced to be husbandry. Vazrood pilot is located at 51° 55' 15" to 52° 55' 15" eastern longitude and 3° 12' 15" to 36° 30' 00" Northern latitude and covers as much as 14102 hectares with 8676 hectares of woods and 5426 hectares (38.5%) upper rangelands and rural area which lies in Natel rural area-part of Chamestan in Noor city from the physiographical point of view this watershed looks like a cone with its base towards the South and the top towards the North. The least elevation of the watershed is 270 meter and maximum elevation is up to 3350 meter of the sea level, is stretched out to the North up to man-made woods and part of Jurband village to the South up to upland rangeland and Gaznasara, Roodbarak and Noojme, to the east up to the west of forestry project in western Haraz and to the west up to Lavij forestry project. The watershed is to some extent steep with a river called "Vaz" with permanent flow heading north originated from southern elevation snow melting. Eastern and western midways located on the two sides of the river are generally steep.

MATERIALS AND METHODS

Because of the nature and the aim of the research it can be considered as an applied research. Efforts have been made to use comparative view to analyze the definition of forest inhabitants and comparing economical, social and cultural structure of the utilizers of the resources based on the different elevation levels, in addition to identifying of specifications of each existing structure in spatial organization. efforts have been made to identify each group's dependency on the mentioned resources. Since questionnaires and interviews have been used to gather information, it is possible to consider the research as a surveying one. Because the whole research area was not vast, all the villages 8 were selected to be the pilot. There is a village in plain zone (Jurband), three ones in the forest zone (Vaztange, Vaz-e-Sofla, Vaz-e-Olya) and four ones in the rangeland zone (Nujme, Gaznasara, Laskouti and Roodbarak) in the pilot which covers 14000 hectares. The distance between the watershed entrance and its farthest point is only 37 kilometers. To identify the volume of the society in each village in the three mentioned areas, 6% of the whole society from the plain zone, 22% from the forest zone (due to the low volume of the society) and 6% from the rangeland were selected. Questionnaires and consumption tests were applied and using T-test and K2 test following results was concluded [5-7].

RESULTS AND DISCUSSION

First hypothesis

It seems temporary residents are more literate than the permanent ones: There were different results of T-test in different human kingdom, i.e. the hypothesis was rejected in rangeland & plain zones in H0 area, but in plain &forest zones and in forest & rangeland zones in H1 area was accepted with a probability of 99% (Table 1).

As we know availability of infrastructural issues, facilities, different economical & social & cultural services for society and the distance between this society and the one with these facilities, depends on the kind of spatial organization. That is the reason based on which the hypothesis can be rejected. Because the literacy mean for those who temporarily live in plain zone, (which is close to Chamestan (5KM)) was not so different from that of the ones who permanently live in urban areas. (2.78 vs. 3.11), but the literacy mean for those who live in forest zone is so different – due to being distant from urban areas – from that of the ones who live in plain & rangeland zones, so the hypothesis is acceptable in H1 area.

Second hypothesis: It seems that employment in offices and having non-governmental businesses is more common among temporary residents than the permanent ones.

Table 1: Outcomes of the comparative analysis between literacy level and human kingdom for the residents

	literacy level						
Area	N	Mean	Std.deviation	Std. error mean	F	Sig.	t	Df
1-plain	206	2.7816	1.44352	0.10057	27.376	0.000	4.432	376
2-forestzone	172	2.1919	1.07243	0.08177			4.549	371.168
3-Rangeland	168	3.1190	1.66618	0.12855	35.645	0.000	6.116	338
4-forest zone	172	2.1919	1.07243	0.08177			6.0862	248.071
1-plain	206	2.7816	1.44352	0.10057	2.490	0.115	-2.098	372
2-rangeland	168	3.1190	1.66618	0.12855			-2.068	332.525

Table 2: Outcomes of analyzing comparative T-test between the number of office jobs and non-governmental businesses for human kingdom in the pilot

	Employment type						
Area	N	Mean	Std.deviation	Std. error mean	F	Sig.	t	Df
1-plain	378	1.1005	0.30110	0.01549	8.033	0.005	-1.439	544
2-forest zone	168	1.1429	0.35097	0.02708			-1.357	280.815
3-rangeland	168	1.1429	0.35097	0.02708	114.253	0.000	-4.638	197.398
4-forest zone	172	1.0116	0.10752	0.00820			-4.684	338
1-plain	206	1.1748	0.38068	0.02652	2.829	0.093	0.835	372
2-rangeland	168	1.1429	0.35097	0.2708			0.842	366.412

Table 3: Outcomes for the comparative analyzing with T-test between the number of permanent immigration and residents of the watershed

	Permanent Immigration						
Area	N	Mean	Std.deviation	Std. error mean	F	Sig.	t	Df
1-plain	206	1.1650	0.37213	0.02593	1.891	0.170	0.684	376
2-forest zone	172	1.1395	0.34752	0.02650			0.688	371.289
3-plain	206	1.1650	0.37213	0.02593	106.551	0.000	-5.485	372
4-rangeland	168	1.4107	0.49343	0.03807			-5.334	304.486
1-forest	172	1.1395	0.34752	0.02650	142.080	0.000	-5.870	338
2-rangeland	168	1.4107	0.49343	0.03807			-5.846	299.385
1- plain forest zone	378	1.1534	0.36089	0.01856	127.875	0.000	-6.831	544
2-rangeland	168	1.4107	0.49343	0.03807			-6.074	249.595

If the index of the number of people who have non-governmental businesses and office jobs in each triple zones in the watershed is going to be considered as economical dependency degree on the economical structures out of the watershed, the calculation of T-test in each zones come up with different results so that the hypothesis in plain & forest zones and also rangeland zone was acceptable with a probability of 95 and 99% in H1 respectively, but it was rejected in plain & rangeland zones in H0 area (Table 2).

If the mentioned jobs are accepted as sustainable and high-income ones, it is understandable that temporary residents' economical benefits are independent from economical resources of the watershed (grass from the rangeland with & without trees) and are more related to the spatial structure of the plain cities and villages close to facilitated centers. In fact being close to these centers has caused the statistical relation between this factor and residential kingdom in the two zones in the watershed [plain & rangeland zones] to be meaningless. But from the spatial organization point of view, as there is a difference between these organizations in forest zone societies (Vaztange, Vaz-E-Sofla and Vaz-E-Olya) and plain & rangeland zones, the hypothesis is meaningful as far as statistical factors are concerned, because most of the inhabitants are now working in coal mines, close to Vaztange village, so the number of people with office jobs in forest zone, is less than that in the two others.

Third hypothesis

It seems that temporary residents are more intended to have longer-distance and permanent immigrations than the permanent residents themselves: If the social index of immigration is considered as a low-dependency sign on the destination, using this social factor to prove the hypothesis (saying that low social and economical dependency of temporary residents on economical resources of the watershed compared with permanent

Table 4: Outcomes of the comparative analyzing with T-test between the residency index of the migrants and human kingdom of the watershed

	Immigration band							
Area	N	Mean	Std.deviation	Std. error mean	F	Sig.	t	Df
1-plain+forest zone	373	1.1429	0.35039	0.01802	152.051	0.000	-7.532	544
2-rangeland	168	1.4226	0.49545	0.03823			-6.620	244.152

Table 5: Outcomes of the analyzing statistical significance level of the amount of the loan received between permanent and temporary residents in the pilot

analysis	value	df	Asymp.sig
Pearson chi-square			
Likelihood ratio	72.950	20	0.000
Linear-by-linear	74.793	20	0.000
Association	17.304	1	0.000
No of valid cases	95		

Table 6: Outcomes of frequency distribution loan reception based on different social level and among human kingdoms in the watershed

	Residential kingdoms			
Amount of loan	plain settlement	Forest settlement	Rangeland settlement	total
1= -50 $	-	-	1	1
2= 50-100 $	-	-	-	-
3=100-250 $	-	1	-	1
4=250-500 $	1	-	4	5
5=500-1000 $	3	1	3	7
6=1000-2000 $	3	1	12	16
7=2000-3000 $	-	1	2	3
8=3000-4000 $	-	-	1	1
9=4000-5000 $	-	-	1	1
10=+5000 $	3	1	1	5
11= no loan	24	10	5	39
12= no answer	1	15	-	16
13= total	35	30	30	95

ones) and using T-test, it is proved with a probability of 99% for plain & rangeland zones in H1 area. But in plain and forest zones it is rejected because low umber of permanent immigration. Also combining the information of the index in plain & forest zones as permanent-resident residency zones and rangeland zone as temporary-resident residency zone and applying the test, the hypothesis is accepted with a probability of 99% (Table 3).

Proving the hypothesis in plain &rangeland zones and forest & rangeland zones means that permanent immigration rate of temporary residents is high in their kingdom. This high rate is because of the dependency of economical and social structure of plain and forest zones on the existing resources in the zones. For instance those with an office job or students, who go to Chamestan and Noor to school, go back to the village because of their high dependency on the watershed and it lowers the percentage of permanent immigration among them.

Outcomes show that only 16.5% of the watershed migrants are from the plain zone and 14% of them are from the forest zone, while 14.1% of permanent migrants was temporary residents. Also using immigration index to learn the dependency of each zone on its social & economical organization, analyzing based on T-test shows that the hypothesis is 99% acceptable in H1 area. 39.2% of the migrants were those temporary residents in the watershed with their homes in urban and rural areas outside the city while only 23.9% of migrants were those permanent residents who live in the above areas. 54.1% of migrants were permanent residents who live inside the zone and it shows that they are strongly related and dependent on the resources in the zone so that they try not to move a long way as far as immigration is concerned (Table 4).

Fourth hypothesis

It seems that temporary residents of the watershed get more loans from the banks than permanent residents: Getting loans from banks could be an economical index to identify the degree upon which dependency on natural resources in the watershed could be statistically tested.Based on K2 there was magnificent difference between the amount of loan received by temporary residents (human rangeland kingdom) and that of permanent residents (human plain and forest kingdom) i.e. 68% of those who live temporarily in the rangeland zone in the watershed and use the natural resources received more than 10 million while the percentage for the plain and forest zones residents was 54.5 and 15%, respectively. So the hypothesis is acceptable in H1 area (Tables 5 and 6).

CONCLUSION

- Over 25.7% of the permanent residents in the watershed are absolutely illiterate (those who live in plain & forest zones) and if sum them up with those who have passed primary grades the percentage reaches to over 58.2% while only 19.6% of temporary residents (rangeland settlers) are absolutely illiterate and 21.4% have passed primary grades.
- Employment index for sustainable and high-income jobs (office jobs and non-governmental businesses) is more optimal among temporary residents than that of permanent residents, i.e. 67.6% of the active settlers are officers while for permanent settlers this is only 35.7%.
- Daily immigration rate for permanent residents is 38.4% while the rate for temporary residents is only 21.1%, but temporary residents have had longer-distance immigration than permanent ones i.e. 63.5% of the immigrants settle in the provincial boundaries but 54.1% of the immigrants are those permanent residents in the villages in the watershed.
- According to the studies 83.3% of the research samples in rangeland zone (temporary settlements) have received loans from financial centers in the cities, from which 48% have received loans ranging from 10 to 20 million Rials. 50.8% of the Permanent residents has received loans and only 6.1% of them has got the above amount [7].

RECOMMENDATIONS AND SUGGESTIONS

- It is suggested that the implementers of the protection of the Northern forests project in the country to identify the stakeholders included in the project so that they could stop giving lands to temporary forest settlers. Even if they intend to give lands for establishing livestock units they had better to give it to those real permanent residents in the area since only these people are well experienced and has the ability to rehabilitate such units.
- To be successful in the project in the same watersheds and this one, it is suggested that regarding the existing Vazrood River in the area, fish ponds can be established so that it could be one of job opportunities for the unemployed and can have an effective impact on the reduction of immigration rate.
- It is suggested that taking the dependency of permanent residents on keeping and raising local livestock in the area into consideration, the authorities and implementers of the spatial organization of the watershed coordinate with livestock branch in the Jehad agricultural organization to introduce those applicants to the correspondent banks to receive loans, so that the project could achieve its goals much sooner.
- It is suggested that all the watersheds with the same project implemented there, to be under watershed civilizing organizations' supervision with implementation and organizational authorities [6-9].

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