A Study to Investigate the Impacts of Aggregation Plan on Flooded Villages in Iran

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Abstract: The main purpose of this research was to investigate the impacts of aggregation project on the flooded villages. The research area was consisted of villages have been damaged from flood and were covered by the aggregate project. This research was descriptive and cause-comparative. The statistical population of this study was consisted of 1500 households have been resettled in Pishkamar district; out of which 348 households were selected as a sample using simple random sampling method. A questionnaire was compiled for collection of data. It 's validity and reliability were reviewed and confirmed. Findings showed that the villages' aggregation project in short term has been successful from the view of some indicators and had some challenges from the view of some another aspects. In addition, prior to implement the aggregation project, the risk management of floods is a major challenge that has been discussed in the former way of life in rural districts.

Key words: Aggregation Project · Consequences · Pishkamar

INTRODUCTION

In the research area, small farmers have struggled to natural disasters like floods for many years, because fundamental infrastructure and institutions were not adequate to them. Now the main question is whether there is a plan or idea to support rural people in face of the risky environment? At present, aggregation plan assumed to be a solution to manage flood risk based on the economic and social characteristics of rural societies.

The Pattern of rural settlements will change based on the scattered and integrated habitations. It depends on natural environment, culture and social organization, as well as political effects and economical activities [1, quoted by Norton, 2007: 444]. In this plan, a central rural is selected as mother village; in the next step, the central village is equipped as much as possible and a

number of small and scattered villages are aggregated around it. One of the main reasons is to improve the quality of services [2]; therefore, separate investment for one by one rural districts, is not economized nor logical and practical [3]. Some of the main objectives in order to organize scattered villages were: increased economic and productive potential of rural areas, improved quality of life and effective utilization of natural resources, proper distribution of the rural population, resolved problems and providing a proper model to settlement [4]. Consequently, the most important objectives of execution of the "Rural Districts Aggregation" Plans may be summarized as follows: Development of productive activities, provide welfare facilities and services for rural people and helping in preventing irregular migration [5]. In spite of the potential and apparent advantages of the aggregation plan, lack of attention to reasons of

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dispersion of rural districts, can lead to major challenging issues. Therefore feasibility assessment is a prerequisite for the implementation of the plan [2]. In the same way, aggregation plan must be done gradually [6]. Additionally, paying attention to culture and the needs of the rural people are very important in order to developing affective plan and projects [7].

Golestan province of Iran is located in the north of the country. In pishkamar district, there was only one case which is recorded. In that case four villages are aggregated with a population of 148 people and 22 families who settled in a land area of two hectares.

The main objective of this research was to investigate the consequences of aggregation project on the flooded villages and families who have been resettled in Pishkamar district.

MATERIALS AND METHODS

The main purpose of this research was to investigate research has studied the impacts of aggregation project on the flooded villages in the region of Pishkamar. This research was descriptive and cause-comparative. As well as, some of the important indexes have been investigated before and after the aggregation project. The research population was consisted of 1500 families, out of which 348 families were selected using simple random sampling method. Face and content validity of the research instrument was confirmed by the research committee.

RESULTS

A pilot test was conducted for the purpose of reliability, through which $\alpha=0.70$ was obtained. Table 1 shows descriptive profile of the population. The results indicated that nearly 90 percent of the households have resettled in Pishkamar for six month. The household size of the respondent showed that about 31 percent of households had six people, 45 percent had between three to five people and about 18 percent of the households had more than seven people. Before the aggregation project is implemented, 15 percent of the respondents were unemployed and the majority of employees were involved in agricultural activities. On the other hand, after the aggregation project was implemented, the number of unemployed increased more than twice, as well as agricultural activities declined and working in service jobs increased. One of the reasons of this significant reduction in agricultural activities was related partly to get away from the agricultural lands. This finding is in accordance with studies by Irri [8], Rezvani [9] and Afrakhteh [5] which showed there was a significant decrease in employment status from productive activities in agricultural sector to working in service jobs. Moreover decreased income and economic problems, increased sand storms, lack of satisfaction of settlement in new location, social and cultural problems and increased migration to big cities, were some of the inappropriate consequences resulted from implementing the aggregation project. A total of 129 households in Pishkamar district were involved in agriculture, out of which 48 percent had low level of control on their farm; about 36 percent had a moderate control on their activities and just 8.5 percent of them supervised the activities of farm at a high level. In addition, due to flooding a part of agricultural land was destroyed.

Findings showed that about 79 percent of households have been affected by floods two times and about 20 percent have been affected at least one time. Respondents were asked to assess their satisfaction from the new buildings in Pishkamr. About 58 percent had a high level of satisfaction and about 29 percent and 12 percent had an average and low level of satisfaction respectively. The majority of respondents (98.9%) stated that the farmlands have been destroyed due to floods and nothing has been done in order to improve this situation.

In order to investigate the level of effectiveness resulted from the aggregation project in Pishkamar, the viewpoint of residents was identified in the field of public services in two categorize as before implementing the project and after implementing the project (Table 2).

As can be seen in Table 2, only about one percent of the respondents stated that the level or quality of public services in the field of water and gas has declined after implementing the aggregation project. However about seventy seven percent of the respondents stated that the level or quality of public services has improved after implementing the aggregation project. From the perspective of nine percent of the respondents, there was no any difference in the field of public services before and after the project. In Table 3, the value of Z score and the significant level of the test are shown.

As a result it is stated that there was a significant difference in the viewpoint of the respondents about the public services. In the other words, the level or quality of public service had improved after the implementation of the aggregation project in Pishkamar.

The viewpoint of the residents was identified in the field of social security in two categorize of before the project and after the project (Table 4).

Table 1: Descriptive Profile of Respondents

Variable	Category	Frequency	Percent	Implications
Duration of settlement in Pishkamar district	6 month and less	32	9.22	Mode: 1-2 years
	6 month to 1 year	127	36.59	
	1-2 year	157	45.24	
	2 years and more	31	8.93	
Employment status in village (before implementing the aggregation project)	Farmer	238	68.78	
	Rancher	13	3.75	
	Work as Labor	26	7.51	
	Shopkeeper	8	2.31	
	Driver	7	2.02	
	Unemployed	54	15.60	Mode: Farmer
Employment status in Pishkamar district (after implementing the aggregation project)	Farmer	129	37.28	
	Rancher	9	2.60	
	Work as Labor	35	10.11	Mode:
	Shopkeeper	36	10.40	(1) Farmer
	Driver	6	1.73	(2) Unemployed
	Peddler	3	0.86	
	Unemployed	128	36.99	
Flood Records	One time	71	20.40	
	Two times	274	78.73	
	Three times	3	0.86	Mode: Two times

Table 2: Public Services (Gas and Water)

		N	Percent	Mean Rank	Sum of Ranks
After the project-Before the project	Negative Ranks	4[a]	1.15	194.38	777.52
	Positive Ranks	307[b]	76.75	155.50	47738.50
	Ties	37[c]	9.25		
	Total	348	100		

a. After < Before
b. After > Before
c. After=Before

Table 3: Test Statistics (Wilcoxon Signed Ranks Test)

	After-Before
Z	-17.043[a]
Asymp. Sig. (2-tailed)	0.0001

[a] based on negative ranks.

Table 4: Social Security

		N	Percent	Mean Rank	Sum of Ranks
After the project-Before the project	Negative Ranks	118[a]	33.90	112.40	13263.2
	Positive Ranks	84[b]	24.13	86.19	7239.96
	Ties	146[c]	41.95		
	Total	348	100		

a. After < Before
After > Before
After=Before

Table 5: Test Statistics (Wilcoxon Signed Ranks Test)

	After-Before
Z	-3.918[a]
Asymp. Sig. (2-tailed)	0.0001

[a] based on negative ranks.

Table 6: Respondents? view about the main problems in Pishkamar

Item	Frequency	Percent	Valid Percent
Economic	341	98	98
Cultural	1	0.28	98.28
Social	2	0.57	98.85
No response	4	1.15	100
Sum	348	100	-

As can be seen in Table 4, about thirty four percent of the respondents stated that the level or quality of social security has declined after implementing the aggregation project. However about twenty four percent of the respondents stated that the level or quality of social security has improved after implementing the aggregation project. From the perspective of about forty two percent of the respondents, there was no any difference in the field of social security before and after the project. In Table 5, the value of Z score and the significant level of the test are shown.

As a result it is stated that there was there was a significant difference in the viewpoint of the respondents about the social security. In the other words, the level or quality of social security had not improved after the implementation of the aggregation project in Pishkamar.

In order to finding the perception about the most important issues after the settlement in the new location (Pishkamar), respondents were asked to express their views. As can be seen from Table 6, the most important issue was economic problems with the highest frequency.

CONCLUSION

As the results of the study showed, after implementing the aggregation project, the unemployment rate rose from 15 percent to 37 percent. In line with this, it was related to agricultural sector. The main reasons for significant reduction of agricultural activities were related to get away from the agricultural lands, as well as destruction of agricultural land caused by flooding. The floods have removed significant amount of topsoil large area of farm land. Therefore flood risk management of flood-prone villages, will be an important challenge at present.

A key problem was economics issue after implementing the aggregation project and resettlement rural population in Pishkamar. In regard to responses of rural people to this topic, they indicated that obtain money and income has been the most important issue among other topics such as social security, welfare services and suitable job. In line with this, trying to create jobs would be a prerequisite in order to obtain adequate income. According to the results of this research, it will be a necessary and important task to monitor short, medium and long term impact and consequences of an aggregation project in the context of economic, social and ecological aspects.

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