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INVESTIGATING THE FACTORS OF COMMUNICATION AND INFORMATION RESOURCES AFFECTING THE TENDENCY OF LOCAL COMMUNITIES TO PARTICIPATE IN THE COMPREHENSIVE MANAGEMENT OF HABLEHROUD WATERSHED IN TEHRAN PROVINCE

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ABSTRACT

The aim of this study is applied research in terms of purpose and field study in terms of control and supervision and correlation method in terms of research method. The statistical population of this study is selected villagers living in the watershed of Hablehrud River in Tehran province. The sample of this study (88households) were randomly selected from the statistical population of the villagers who participated in the project and were asked to collect the survey data. The tools used in this method to collect data and information of independent variables of this research are communication factors and information sources that have been extracted from the questionnaire and question and answer have been done in person. The data in the questionnaire were measured quantitatively or qualitatively on a ranking scale and based on a five-choice Likert scale. Therefore, the level of watershed managers' willingness to participate in watershed management projects and the variables of communication factors and information resources (radio, television, training classes, informing experts, educational videos and local leaders) was considered in order to measure the validity of the questionnaire from experts and experts. Watershed management has been used and Cronbach's alpha has been used to measure the reliability of the questionnaire, the amount of which has been obtained for different variables between 85% and 93%. The results of the relationship between communication factors and information resources and its indicators with the desire to participate based on the results of Spearman correlation test showed that there was a positive and significant relationship between communication factors and information resources with the tendency of watersheds to participate. The results of each of the issues of communication factors and information resources with the tendency of watershed managers to participate showed that there is a positive and significant relationship between all indicators and the level of willingness to participate. Among them, the information of the experts had the most correlation with the desire to participate.

Keywords: Local communities, communication factors, partnership, watershed, Hablehrud and Tehran province

Introduction

Today, public participation plays a very important role in decision-making and natural resource management. This was highlighted by the 1987 World Conference on Global Society, in which governments recognized that rapid economic development had led to the destruction of natural resources. This was emphasized at the UN Conference on the Environment and Development in the Rio de Janeiro Brazil Conference in 1992, noting that one of the key prerequisites for achieving sustainable development is sustainable public participation in the decision-making process (FAO, 1992). The United Nations considers public participation to be one of the key elements of the development process, and the Council considers participation to be the first prerequisite for development (Shuman, 1994). World Bank also believes that public participation empowers them and enhances the organizational skills and management of the people in a society (World Bank, 1995). However, the increase in the exploitation of these areas compared to the past has caused

hundreds of thousands of hectares of watersheds to be destroyed annually, so maintaining the current state of watersheds and preventing further destruction, except in the light of active and comprehensive participation. People are the natural resources and participation of the three pillars of sustainable development, participation is considered to be the integrating role of the two variables because it is both the goal of development and the means to achieve it, so it is a key element in the sustainable development process (Khalighi and Ghasemi, 2001). In recent years, extensive and useful measures have been taken in Iran to attract public and governmental and non-governmental organizations to cooperate and assist in the protection and restoration of natural resources in Iran (Sarookhani, B. 2006). Therefore, an appropriate management system for the protection of these areas should be based on management based on the participation of local communities. In other words, the main strategy for implementing sustainable development in the renewable natural resources sector is to emphasize the factors

that are most cooperative with local communities (Jingling *et al.*, 2010). In general, social scientists believe that the participation of people in projects creates opportunities that lead to a kind of social satisfaction in society, so the level of people's participation in a project can determine the success or failure of that project.

Watershed management projects have had a significant impact on reducing soil erosion, increasing soil moisture and improving vegetation cover. Meanwhile, communication factors and information resources affecting the willingness of local communities to participate in comprehensive management can stabilize watersheds. Therefore, in the study, the tendency of watershed owners to participate in watershed management projects and variable communication and information resources (radio, television, training classes, informing experts, training videos and local leaders) in selected villages of Hablehroud watershed in Tehran province has been studied.

Brown, (1995) in his social and economic studies, believes that watershed management projects should be in line with natural features, culture and methods of exploitation, and take into account the economic and social situation. Irvin and Stansbury, (2004) also believe that public participation has led to better and more acceptable decisions on the issues under discussion. Hop (2007) in assessing the social effects of watershed management projects in India, showed that these projects had an increasing effect on the wages of the project workers (short-term and temporary) and a decrease in water collection time for the household. Prabhakar, (2010) in a study, showed that increasing literacy levels, reducing migration rates, strengthening the role of women in society, improving surface water levels, crop diversity, controlling soil erosion and improving agricultural technologies are the most important consequences and effects of watershed management plans. Prager and Posthumus, (2010) have considered education and employment to be effective in the participation of local communities. Bohnet *et al.* (2011) examined the factors influencing natural resource management programs from a social and economic perspective and concluded that social factors such as awareness, interest and economic factors such as financial support for projects were among the factors influencing participation in projects. Page and Bluetooti, (2015) saw farmers' lack of awareness of conservation programs, lack of sufficient information about farmers' programs as obstacles to farmers' participation in environmental protection programs. Mendoza (2006) in a study aimed at determining the factors influencing participation in environmental programs reported that there was a positive and significant relationship between age, income, social relations and participation. Lehsaeizadeh *et al.* (2004) In a study conducted on the effects of development projects on welfare in rural areas of Fars province have concluded that there is a significant difference between rural and human development in terms of welfare indicators.

Yazdani *et al.* (2009) in evaluating the Zanjanrood reorganization plan, said that it was very successful in controlling floods and increasing the area under cultivation, and as a result, farmers' production and income increased, and 92% of respondents believed that this plan had significant economic effects. For farmers. Salari *et al.* (2015) in a study entitled Analysis of the Local Stakeholders Network for Participatory Management of Water Resources

in the village of Bolan, Zarrin District, Kermanshah, concluded that social participation in this village is to increase the speed of communication and information resources. Salehi (2007) in examining the factors affecting the participation of aquifers in projects, concluded that there is a positive and significant relationship between the level of participation in projects and variables of literacy level, agricultural land ownership and the use of communication factors. Habibi *et al.* (1998) In a study conducted in Kurdistan Province concluded that these projects have created and strengthened public participation in the region Khobfekar, (1999) in his research in Sistan and Baluchestan province in his social discussion, considers people's satisfaction with watershed management activities as one of the important factors in this project. In this project, 100% of people are generally satisfied with these watershed management activities. Have announced. Mahdaviava (2012) in a study entitled Study of Economic, Socio-Economic Effects of Watershed Management Activities in Dam and Bar Damavand Basins, points out that 77% of rural farmers have been effective in increasing their income. Mousavi Haghighi, (2000) in a study entitled "Investigation of Influences of Infrastructure Development Structures of Jihad Sazandegi in Fars Province on Improving the Human Development Index". The overall purpose of this study is to investigate the communication and information factors affecting the participation of watershed dwellers in selected villages in the Hablehroud area of Tehran province in watershed management projects.

Materials and Methods

The Sustainable Management of Water and Soil Resources Management (SMLWR) project, based on a joint program between the Government of the Islamic Republic of Iran and the UNDP, started in 1997 in the watershed of Hablehroud River with an area of 1.2 million hectares. The main goal of this project is to achieve appropriate models of planning, management, implementation, operation and monitoring and evaluation of water and soil resources in several areas under the watershed of Hablehroud watershed and generalization and development of project results to the National Natural Resources Protection Program through rural people's participation. It is in the management of the country's watersheds. The goals of the project and all its activities should be organized and expanded in line with public participation and sustainable development. This project is one of the projects of the National Execution Guideline (NEX) of the United Nations Development Program in Iran, which was started with the cooperation and advice of the FAO (24).

Hablehroud watershed with an area of 1265977 hectares is located in the geographical area of 39 and 51 to 53 east longitude and 26 and 34 to 57 and 35 north latitude in Tehran and Semnan provinces. The area of Hablehroud watershed is affected by the characteristics of geostructure, topography, environment and sociological differences of residential communities and most importantly different development strategies can be divided into two different areas, including the northern and southern areas. The land located in the north of the above road is considered as Sarab Hablehroud and the land located in the southern part is considered as Payab Hablehroud (Figure-1).

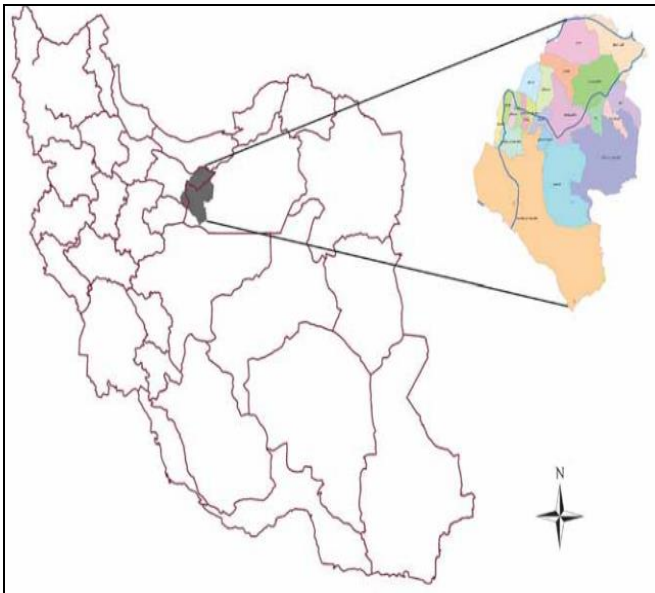


Fig. 1: The location of Hablehrud watershed in the country and Tehran province (23).

Research Methodology

The method used in this study is survey and descriptive-correlational. The statistical population of the study is the pilot villages of Hablehrud watershed in Firozkooh and Damavand counties of Tehran province, where the Hablehrud watershed management project has been carried out. Questionnaires completed by the head of rural households (Aro, Dehnar and Havir villages in Damavand county and Hesarbon, Lazur, Zarman, Vazna and Najafdar villages in Firozkeh Koh county, according to the number of households in each village, a total of 88 sample questionnaires were filled and based on data They have been studied and analyzed.

According to the field research method, the head of households of pilot villages was completed as a simple random sampling based on the equation under the relevant questionnaires. Thus, the head of households of pilot villages has been completed by sampling based on the following equation :

$$n = \frac{N_t^2 S^2}{Nd^2 + t^2 S^2}$$

If the ratio N is greater than 5%, the estimate for population constraint is corrected using the following familiar formula (25).

Therefore, based on the above equation, the number of samples was determined: $n = \frac{n'}{1 + \frac{n'}{N}}$

N = statistical community size $n \geq 30$

$d_2 O$ ptimal accuracy = 5%

(t 3.84 t 23) reliability coefficient $t = 1.96$

s^2 Estimates of employment variance in households = 0.9

The number of research samples has been used according to the desired questions by completing the questionnaire of rural operators. According to the field research method, the head of households of pilot villages was

completed as a simple random sampling based on the equation under the relevant questionnaires. Thus, the head of households of pilot villages has been completed by sampling based on the following equation :

$$n = \frac{N_t^2 S^2}{Nd^2 + t^2 S^2}$$

Therefore, based on the central limit, which if the number of samples is higher than 30, it is acceptable. The villages of Aro, Dehnar and Havir in Damavand city and the villages of Hesarbon, Lazur, Zarman, Vazna and Najafdar in Firozkeh Koh city, according to the number of households in each village, a total of 88 sample questionnaires were filled and analyzed based on their data.

In order to make the selection of samples scientific and acceptable, a simple random sampling method and random access with watershed dwellers who lived permanently in the area were used, and the number of samples was proportional to the population of each village. The tools used in this method to collect data and information of independent variables of this research are communication factors and information resources that have been extracted from the questionnaire and question and answer have been done in person. The data in the questionnaire were quantitatively or qualitatively scaled and based on the five-choice Likert scale (very low, low, medium, high, and very high) (measured and evaluated, each on the dependent variable). The tendency of watershed owners to participate in watershed management projects and variable communication and information resources (radio, television, training classes, informing experts, educational videos and local leaders) was done with 6 items. Cronbach's alpha statistical method was used to calculate the internal coherence of the research instrument. Cronbach's alpha for computational factors and information resources was calculated to be 0.56. The amount of alpha obtained showed that the items were in the same direction and had high internal coordination and coherence. The completed questionnaires were prepared after review and coding in SPSS software and analyzed according to the level of measurement of variables. Spearman's correlation test was used to analyze the degree of correlation between communication factors and information resources with the degree of desire of watershed owners to participate because these factors were ranked and qualitative.

Results and Discussion

The results of the relationship between communication factors and information resources and its indicators with the degree of willingness to participate based on the results of Spearman correlation test showed that there was a positive and significant relationship between communication factors and information resources with the tendency of watershed participants to participate (0.657 and $P < 0.000$ and 0.657). The results of the Kendall b test showed that each of the items in the communication and information resources problem with participants' willingness to participate showed a positive and significant relationship between all indicators and the desire to participate. In the meantime, the information of the experts had the highest correlation with the desire to participate (Table -1).

Table 1 : Correlation between indicators of communication factors and information resources and the tendency of watershed owners to participate

Priority	Communication factors and information resources affect the tendency of watershed owners to participate	Kendall correlation coefficient b	Sig
1	Expert information	0/495	0/000
2	Training classes	0/462	0/000
3	educational videos	0/389	0/000
5	Television	0/362	0/000
5	Radio	0/349	0/000
6	Local leaders	0/194	0/000

The findings of the study show that the intensity of correlation and positive and significant relationship between communication factors and information resources will increase with the degree of desire of watershed owners to participate in watershed management. In other words, the desire for the participation of watershed owners in the projects is due to the strengthening of the intelligence base among the people in the study area. According to the results in Table 1, it was found that there is a significant relationship between all indicators of communication factors and information resources and the rate of watershed owners' willingness to participate. Bohnet *et al.* (2011) and Mendoza, G.A. and R. Parabhau. 2006 considered social factors as influential factors on participation in projects. Prager K and H. Posthumus. 2010 also found that the relationship between educational classes and the level of positive participation in evaluating and presenting educational programs was effective in participation. Salari *et al.* (2015) and Salehi (2007) also concluded that there was a positive and significant relationship between participation and communication factors and information resources that were consistent with the results of this study. Therefore, paying attention to increasing the knowledge and awareness of watershed owners increases the desire to participate. Therefore, it is suggested that by holding training and extension classes, the field of increasing awareness and motivation of watershed participants to participate can be increased.

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