Factors Influencing Local People’s Participation in Watershed Management Programs in Iran

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Abstract: The degree of popular participation in development programs is a major determinant of success or failure, but the factors which make participation efforts successful still remained a mystery. This study was designed to discover this mystery and determine the factors that influence local people’s participation in Watershed Management Programs by using the social exchange framework. The data for this study were gathered from 200 respondents through personal interview during August and September 2008. The findings of this study showed that level of participation in WMP was moderate; however people preferred more involvement in social rather than economical and environmental activities. Correlation analysis indicated that six factors: 1) satisfaction of prior programs, 2) attitude toward WMP, 3) knowledge of WMP, 4) alternative monthly income, 5) total monthly income and 6) Met expectations of WMP have positive and significant relationship with level of people’s participation in WMP. However, regression analysis discovered that among these factors, five factors provided the best prediction for the level of people’s participation in WMP and explained 45 % of the variation. These five factors were: level of people’s satisfaction of prior programs, people’s attitude toward WMP, people’s knowledge of WMP, their monthly income from alternative occupation and their expectations of WMP. The result of this study also provided a number of theoretical and practical implications and recommendations to increase the level of participation in WMP

Keyword: Social exchange • Participation • Watershed Management • Hable-Rud • Iran

INTRODUCTION

The term participation has gained a lot of popularity during the last few years, particularly in reference to sustainable agricultural and rural development projects. At the World Conference on Agrarian Reform and Rural Development (WCARRD) in 1979, the international community had linked the reason for the failure of rural development initiatives to the lack of active participation of the people in the development programs which were designed to assist them [1]. The public participation today is demanding a greater role in decision making processes about the management of natural resource [2].

There are several studies which highlighted the importance of participation [3-4-5-6-7]. In point view of Platt [3], lack of participation in the society is one aspect of poverty. Irvin and Stansbury [4] believed that citizen participation will produce more public preference decision making. In point view of Wainwright and Wehrmeyer [7], participation by citizens and users presents an important concept and strategy for planners, designers, community organizers and government officials.

After land reform in Iran, in early 1960s, the natural resources came to control and property of state and from that time government is owner of all the natural resources. But in fact, the users of the natural resources are people of the regions in which resources located and government has not been able to control and posses the natural resources in practice. This issue is one of the chronic problems in natural resources management in Iran that exacerbated natural resources degradation and non-sustainability [8].
During the last years, land and water resources in Iran have suffered severe degradation. According to United Nation Development Program (UNDP); Iran is facing serious environmental challenges; environmental and natural resources have been substantially degraded [9]. In this regard governments of Iran have established several policies to sustainable management of natural resources during the last years. Most of these efforts have taken top down strategy and often unsustainable. In recent year’s government has developed participatory approach in natural resources management in several rural areas. Hable-Rud Watershed Management program is one of these participatory programs to sustainable management of land and water resources in Iran which is initiated as a joint program of UNDP and Islamic Republic of Iran in 1997.

The degree of popular participation in such programs is a major determinant of success or failure, but many opportunities for participation are met with little cooperation by citizens and the factors which make participation efforts successful still remain a mystery especially in Iran participation is quite a challenge for country with a long tradition of top-down management.

Many studies have developed numerous and sometimes different views concerning to the dimensions of participation. Many studies on participation have been descriptive in nature and focused on distal factors; such as demographic and socio economic variables; on who joins and participate in development programs [10]. Internationally there are several researches that have utilized theoretical models to predict the determinants of participation [11-12-13-14-15] but there is a limited research that has been conducted on the context of participation with using theoretical model in Iran.

In this study researcher attempts to analyze people participation in WMP based on the previous literature and social exchange theory, to examine the relationship of several factors with the level of participation to provide a better understanding of the role of each variable in the level of people participation in WMP.

**Theoretical framework of study:** The framework of this study is based on social exchange theory. Central idea of social exchange theory is that the exchange of social and material resources is a fundamental form of human interaction [16]. This theory basically asserts that people develop attitudes toward other people and things in the context of anticipated personal benefits and costs to be derived from contact with them. Activities that generate net benefits will tend to be perceived positively, while those activities that generate net losses will tend to be perceived negatively [17]. Social exchange theory poses that all human relations are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives. For social exchange theorists, when the costs and benefits are equal in a relationship, then that relationship is defined as equitable. The notion of equity is a core part of social exchange theory.

In point view of Homans [18] the initiator of theory, social behavior is an exchange of goods, material goods but also non-material ones, such as the symbols of approval or prestige. It also noted that individuals will enter into and maintain a relationship as long as they can satisfy their self-interests and at the same time ensure that the benefits outweigh the costs [19]. According to Blau [19] in satisfactions human beings, experience in their social associations, depend on the expectations they bring to them as well as on the actual benefits they receive in them. The man who expects much from his associates is more easily disappointed in them than the one who expects little and the same degree of friendliness might attract the first man to other people and discourage the second from associating with them.

Social exchange theory also is tied to rational choice theory and on the other hand to structuralism and features many of their main assumptions. Blau [19] outlined three types of expectations of social rewards: general expectation, particular expectation and comparative expectation. Spencer and Steers [20] have mentioned, met expectations in organizations are the extent to which once expectations concerning to organizational life have been met on the job. By meeting or exceeding the expectations of employees, organizations can decrease an individual’s level of intent to quit [21]. Organ [22] proposed that supervisor fairness leads to employee citizenship because a social exchange relationship develops between employees and their supervisors. When supervisors treat employees fairly, social exchange and the norm of reciprocity [23] dictate that employees reciprocate. Organ suggested that organizational citizenship behavior is one likely avenue for employee reciprocation. Expectations contribute to a “norm of reciprocity” because individuals have certain beliefs about what a program should provide to them as a participant in exchange for their efforts. To a certain degree, expectations are formed from societal norms. By meeting or exceeding these expectations,
program managers can establish a baseline of perceived support which could serve as a buffer keeping a participant from leaving the program.

Satisfaction depends on expectation, which is shaped by prior experience, especially memorizing events of the recent past. Indeed this factor closely related to exchange theory to understanding people behavior in relation to a subject. In terms of continuing relationships, Blau believed that individuals will try to maintain those exchanges which have proven to be rewarding in the past, to break off those which proved to be more costly than rewarding and to establish new relations which have a good chance of being more rewarding than costly. Indeed fulfillment of a motivational desire, after need satisfaction has occurred, there is no further motivation for gratifying that need. Many studies have shown that prior experience affect on decision of people to participation in the current projects [24, 25].

Participation in WMP may differ among people according to their socio demographic characterizes. Thus, participation in watershed management involves a combination of individual characteristics and as well as subjective evaluations. This individual characteristics influence decision-making regarding household behavior whether or not participate in watershed management programs. Several studies have shown that participation may depend on individual characteristic such as age, gender, marital status, education, household size, income, etc. [26-27-28-29]. The differences in emphasis on watershed perceptions, allow men and women to maximize their individual well being. Knowledge, awareness, attitudes and behavior are four interrelated components of an individual’s action [30].

Education and knowledge are also important determinants of how benefits from watershed management programs are perceived. People cannot be expected to exhibit positive attitudes toward watersheds if they are unaware of the benefits and costs associated with their participation. Education and knowledge about watershed management issues make people more positive in their views [32-33-34-35]. Better informed and educated people should be more aware of potential benefits to be derived from the forest than individuals who are ignorant and illiterate [17].

An attitude is a hypothetical construct that represents an individual's degree of like or dislike for an item. Attitudes are generally positive or negative views of a person, place, thing, or event- this is often referred to as the attitude object. Attitudes are generally viewed as one’s relatively enduring affective, cognitive and behavioral dispositions toward various aspects of the world including persons, events and subjects. It has been generally believed that attitude change is necessary before other behavioral modifications can be effected [26].

Abu Samah [29] found that “there is positive relationship between farmer’s attitude toward program and intensity of farmer’s participation in agricultural development program. Kraft et al. [36] found that farmers with a negative attitude toward governmental involvement with wetland regulations were less likely to want to participate in the water quality incentives program. Rishi, [37] outlined that understanding of attitudes is one of the central concerns in social life and is vital for bringing desired change in the behavior. Social actions of people or program personnel are directed by their attitudes. By knowing the attitudes, it may be possible to do something about the prediction and control of their behavior, which may be ultimately useful for the more successful implementation of programmes. Shahroudian and Chizari [38] in their study in Iran found that there is significant and positive relationship between farmer’s attitude and their participation in irrigation networks management. Vicente and Reis [39] expressed, positive attitudes toward recycling and information are important factors in explaining recycling participation.

**MATERIAL AND METHODS**

Hable-Rud basin located in north part of Iran, between altitudes 51.39’ and 53.08’ north and longitudes 34 26’ and 35 57’ east. This area has 57000 household distributed in 704 villages and includes the region that is characterized by high population density, land and water resource degradation and declines in agricultural productivity; posing significant challenges to rural
peoples to provide for the growing population, while maintaining the productivity of natural resources. Based on literature review, a set of factors were adopted as independent variables to examine their relationship with level of people to participate in WMP.

Data in this study mainly drawn from the survey questionnaire. Development of the survey instruments was formed based on literature review and interviews with program staffs and also with participants in three WMPs in study is prior to actual data collection. Based on above procedure, specific questions addressing some of the measurements of the independent and dependent variables were extracted to test their relationship with level of participation.

Socio demographic characteristics were measured depending on its appropriateness. Knowledge instrument were employed two point scales for measurement, attitude instrument were employed five point likert scales for measurement and satisfaction of prior programs instruments were employed three point scales and level of people participation were measured with five point scales. Once the instruments were developed, it was reviewed by a panel of experts in UPM and FRWMO, in Iran to ensure the content validity of the instruments. A pilot test was carried out among thirty respondents during the August 2008. The Cronbach Alpha that is greater than 0.70 was used to measure the reliability of the instruments. Results of the computed reliability coefficients were; .812, .806, .937, .816 and .903 for knowledge, attitude toward WMP, satisfaction, expectations and participation in WMP, respectively.

The selection of a sample for this study was multi stage random sampling procedures. In the first level, the name of villages and number of their population was obtained from project office and Statistics Center of Iran (SCI) and based on Israel G. D [40] adequate sample size determined for gathering data for this study. Based on the sample size formula and with regard to population of study area, a total of 200 respondents were determined as sample size of this study. In the second level three villages selected randomly to get determined sample size. In the last level, name of all participants’ households in each selected villages were listed. Finally respondents randomly were selected from each selected villages. Data for this study were collected through personal interviews by using a questionnaire during the August and September 2008. Descriptive analysis, Parsons Product moment correlation and regression analysis was used to analyze the data in this study.

### RESULTS AND DISCUSSION

Findings of study showed that educational level in study area was relatively high (18 % diploma and high) and mean of respondents age was 46 years. Study also showed that main occupation of the majority was farming (55 %) and average of their total monthly income was 3.5 Million Rial per month. Findings of study also showed that average land ownership of the respondents was 3.12 hectares and 8.5 % of the respondents were landless. Study also showed that 58% of respondents were member at least in one local group and 47.5 % of respondents were joined to program with their self interest. Descriptive analysis of data showed that level of respondent’s knowledge of WMP was low, however they were indicated positive and relatively high level attitude toward WMP.

Findings of study also showed that respondent’s expectations of WMP and their satisfaction of prior programs were moderate to high. Study showed that level of overall participation in WMP was moderate, however respondent’s were preferred more involvement in social activities rather than economical and environmental. Pearson’s product moment correlation analysis showed that, income, satisfaction of prior programs, attitude toward WMP, expectation of WMP and knowledge of WMP all have significant and positive relationship with level of participation. Table 1 shows the summary of the correlation analysis between independent variables and level of people participation in WMP. Based on this table satisfaction of prior WMP have highest relationship (r = .518) with level of participation in WMP and followed by attitude toward WMP (r = .489), Knowledge of WMP (r = .435), met expectations of WMP (r = .411), total monthly income(r = .177) and alternative monthly income (r = .158).

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>(r)</th>
<th>(p) (2- tailed)</th>
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<tbody>
<tr>
<td>Age</td>
<td>-0.065</td>
<td>0.358</td>
</tr>
<tr>
<td>Household size</td>
<td>-0.050</td>
<td>0.480</td>
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<tr>
<td>Main income</td>
<td>0.013</td>
<td>0.589</td>
</tr>
<tr>
<td>Alternative income</td>
<td>0.158</td>
<td>0.025</td>
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<tr>
<td>Total monthly income</td>
<td>0.177</td>
<td>0.012</td>
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<tr>
<td>Land ownership</td>
<td>0.073</td>
<td>0.307</td>
</tr>
<tr>
<td>Knowledge of WMP</td>
<td>0.435</td>
<td>0.000</td>
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<tr>
<td>Attitude toward WMP</td>
<td>0.489</td>
<td>0.000</td>
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<tr>
<td>Expectation of WMP</td>
<td>0.411</td>
<td>0.000</td>
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<tr>
<td>Satisfaction of prior programs</td>
<td>0.518</td>
<td>0.000</td>
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The stepwise method of regression was employed to determine the significant contributions among the predictor variables in explaining participation. A summary of the stepwise multiple regression procedure was presented in Table 2. Findings of this study showed that five independent variables provide the best prediction for level of participation and explained about 45% of variation in the level of participation. These five variables were; satisfaction of prior programs, attitude toward WMP, knowledge of WMP, expectation of WMP and alternative income.

Based on the findings of this study it can be concluded that, a person who was more satisfied with previous programs, more likely to participate in watershed management programs activities, this is consistent with social exchange theory and with findings of Effati [24] and Hosseini et al. [25] which found positive correlation between participation and satisfaction of prior programs. Study also showed that those who were more knowledgeable about program, they were more likely to participate in WMP, this also congruent with findings of Strauss [31], Infield, [32], Abu Samah [29], Heinen, [33], Mkanda, [34], Fiallo and Jacobson, [35], which found positive relationship between knowledge and level of participation.

In addition study indicated that those people who had positive attitude toward program more likely to participate in program. These findings also are consistent with results of Abu Samah [29], Kraft et al. [36], Rishi [37], Shahroudi and Chizari [38], Vicente [39] and Asadi et al. [41] in their research that found significant relationship between attitude and level of participation. Findings of study showed that those who are met more his or her expectations of program; more likely participate in program, this finding also consistent with social exchange theory and with findings of Turnley and Feldman [21] and Organ [22].

Finally study showed that a person who have high income more likely to participate in program activities, this finding also congruent with findings of Zainuddin [26] and Illery [27], McDowell and Sparks [28] and Abu Samah [29], that found significant relationship between levels of respondent participation in developing programs with their level of income.

**CONCLUSION AND RECOMMENDATIONS**

In conclusion, participatory watershed management in Iran can be effective strategy for sustainable management of land and water resources for developing agriculture. For the strategy to succeed, a partnership between local participants and the watershed management department is required with regards to watershed management programs. For this partnership participants must have sufficient knowledge about program, in terms of objectives, components, function and general knowledge of program. This is why social scientist and researchers believe that knowledge, awareness and behavior are interrelated components of an individual’s action and prior to an individual’s behavior, or problem under consideration.

This study discovered that respondent’s knowledge of WMP have a positive relationship with level of participation, yet the overall people’s knowledge of WMP in study area was relatively low. Thus, more effort is needed for WMP management to deliver information on WMP to promote people’s participation in WMP. Study also recommends that similar research should be conducted in other WMPs to validate the findings of this study and a more in depth study should be done by incorporating other variables such as; people trust to government, people trust to project staff, to further enhance the identification of factors that affect people, s participation in WMP to improve the prediction of the level of people’s participation.

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**REFERENCES**


