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Prioritization of Factors Preventing Participation of Rural People in Soil and Water Conservation Projects in Vers Watershed

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ABSTRACT

People's participation is an important strategy for successful watershed management. This study aimed to identify and prioritize the factors that prevent people from participation, based on local people's and experts' viewpoints in Vers Watershed. These factors were identified and categorized using literature reviews and interviews with experts and local residents. The validity and reliability of the questionnaires were checked by experts and Cronbach's alpha test, respectively. The sample size was calculated by the Cochran formula. Finally, the indicators and sub-indicators that prevented people's participation were prioritized using the Fuzzy Analytical Hierarchy Process (FAHP) and Friedman test. The results indicated that, in some cases, the views of experts and local residents about the preventing factors were consistent, and in others inconsistent. In general, managerial and economic indicators have a greater role in preventing people from participating than the social and educational ones. Experts believe that the factors X13 (lack of timely and complete project budg*et al*location) and X2 (local disputes) have respectively the most and the least degree of importance. However, local residents ranked X7 (lack of multipurpose projects) and X6 (weakness in teamwork) as, respectively, the most and the least important factors. These differences imply that, in addition to the viewpoints of experts, policy-makers must also consider the views of stakeholders on the factors preventing their participation. These findings can be appropriate and practical for executive officials since removing these barriers, especially the high-priority ones, will increase the stakeholders' participation level.

Keywords: Decision-making power, Managerial indicators, Multipurpose projects, Non-governmental organizations.

INTRODUCTION

Watersheds are the best units for land management. The watershed development program should meet the requirements of the majority of the stakeholders. Since socio-economic and natural resources objectives are not always compatible, watershed participatory governance is crucial for integrated watershed management (Mosaffaie and Salehpour, 2018; Mosaffaie *et al.*, 2019). The integration of environmental and socio-economic issues has been viewed as an attribute of good watershed management for more than 20 years (Reed, 2008; Agidew and Singh, 2018). It is wrong to assume that technology will save efforts, and objectives can only be achieved through willing and active cooperation between the people and the government (Shah, 1993). The inclusion of stakeholders' perspectives may improve the legitimacy of decisions and identification of new solutions and also maximize the likelihood that policy implementation will be more efficient, effective, and sustainable (Rashvand *et al*., 2013; Scolobig and Lilliestam, 2016). Carr (2015) has concluded that people's participation will enhance river

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basin management according to: (1) Deliberation and consensus building for better decisions, (2) Developing and mobilizing human and social capital for better decisions and their implementation, and (3) Raising the legitimacy of decisions to facilitate their implementation. People's participation approach enables participants to engage freely and equally in management (support democratic processes). The involvement of local people in decision making, in addition to the generation of commitments for program implementation, enhances their ability to take responsibility and show competence in solving their own problems (Tyagi, 1998).

In previous researches, people's participation has been studied from different aspects. Bagdi and Kurothe (2014) using People's Participation Index (PPI) indicated that the extent of participation in planning, implementation, and maintenance phases of watershed development program were 63.7% (moderate), 57.7% (moderate), and 75.1% (high), respectively. Sharma and Sisodia (2008) stated that the majority of farmers participated in public meetings at the pre-project implementation stage, while large numbers of beneficiaries were employed as laborers and attended in users committee during the project implementation stage. At the post-project implementation stage (maintenance), project staff along with farmers regularly visited the site. Agidew and Singh (2018) concluded that the occurrence of frequent land redistribution negatively affects farmers' participation. They also find that as the number of the agricultural labor force of a household increases, the farmer's participation in watershed management programs decreases.

Watersheds of Iran suffer from large floods (Mosaffaie, 2015 and 2016), land degradation, severe erosion, and sedimentation. These situations have caused soil and water conservation practices to be started since 1948 and continue till today in Iran. These watershed reclamation projects also need special attention regarding behavioral, cognitive, and social dimensions of soil conservation behavior of farmers in addition to technical methods. In this regard, the cultural factors affecting Iranian farmers' soil conservation behavior have been investigated in previous studies (Karami 1995; Chizari *et al.*, 2003; Bijani *et al*., 2017; Seifi *et al*., 2018; Valizadeh *et al*., 2018; Bijani *et al*., 2019). Chizari *et al*. (2003) have shown that farmers have low levels of awareness with respect to soil conservation technology. Seifi *et al*. (2018) have concluded that knowledge, attitudes, and cultural biases have the most effect on the soil conservation behavior of farmers. Bijani *et al*. (2019) have also shown that environmental consciousness, environmental values, and social pressures have significant impacts on the soil conservation behavior of farmers.

Despite the emphasis of a national megaproject (Sadoddin *et al*., 2016) and also governmental agencies on participatory management of watersheds, the contribution of people's participation is not significant in soil and water conservation projects (Mosaffaie *et al*., 2019). Therefore, it is necessary to specify the main factors preventing people's participation in soil and water conservation projects. The present study aimed to identify and prioritize the factors preventing the local residents' participation in soil and water conservation projects of Vers Watershed from the perspective of two groups of experts and local communities.

MATERIALS AND METHODS

Study Area

The Vers Watershed, located at Qazvin Province of Iran, includes 3 villages, namely, Vers, Dastjers, and Qiz-Qala, and hosts approximately 1,035 people in 387 families (Figure 1). The topography of the watershed is characterized by mountains and this area supports an economy based on livestock husbandry, agriculture, and

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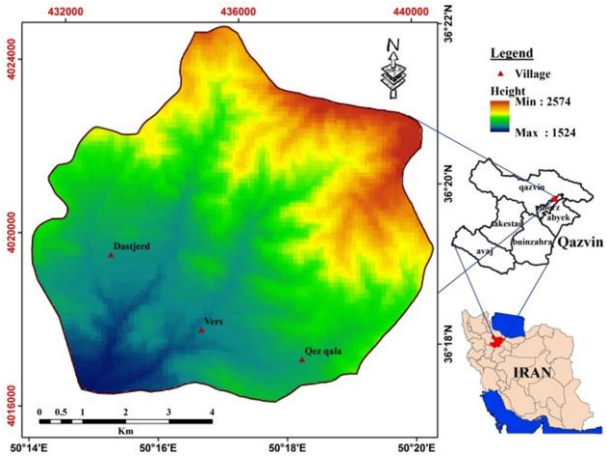

Figure 1. Location map of Vers Watershed in Qazvin Province, Iran.

mining. Livestock overgrazing has caused degradation of vegetation, compaction of topsoil, high runoff generation, accelerated soil erosion, and eventually a high rate of sediment yield.

Due to this adverse environmental conditions, various soil and water conservation practices (including mechanical, biological, biomechanical, and managerial types) have been implemented to improve such environmental conditions. Like other watersheds of Iran, these reclamation projects have been studied, but implemented with a weak participation of the watershed residents.

Identification of Factors that Prevent People to Participate

Various factors can prevent participation of the public in watershed development projects. In this study, these factors were identified through literature reviews (Shah, 1993; Nambiar, 1996; Mansouri *et al*., 2016; Salehpour Jam *et al.*, 2018 and 2020) and interviews with experts and local residents. During the interviews, the interviewees (experts and people) were asked questions about the level of knowledge of local people concerning the implemented projects, the benefits of the projects, as well as the factors that prevented residents from participation in different stages of the projects implementation. After collecting their opinions on the preventing factors, these factors were classified into 4 categories including social, managerial, economic, and educational indices and the final questionnaire was created based on the approval of the experts group.

Prioritization of Preventing Factors

In this research, the factors that prevented rural people to participate were prioritized separately from the perspective of experts and local residents. For this purpose, pairwise comparisons and Likert questionnaires were designed as measuring tools to obtain the relative importance of preventing factors. The validity and reliability of the questionnaires were checked by experts and Cronbach's alpha test, respectively.

To get the experts viewpoints, these questionnaires were filled by the experts of the following departments of the Natural Resources and Watershed Management Organization of Qazvin Province: Watershed Management Studies and Services, Evaluation and Geographic Information System, Forestry and Afforestation, Pasture and Desertification, Conservation and Support, Land Capability

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Detection, Education and Extension as well as relevant experts with more than 10 years of work experience in the counties.

Since the reliability and validity of the results of a study can be affected significantly by the sampling process, the sample size was first calculated by the Cochran formula (Equation 1). Then, to get the viewpoints of residents, 193 families were randomly selected to fill the questionnaires by the head of households. The data related to the number of villages, households, and population of the watershed is presented in Table 1.

$$n = \frac{Nt^2s^2}{Nd^2+t^2s^2} \quad (1)$$

Where, n: Is sample size (selected households), N: Statistical population (Total households in the watershed= 387), t: student's t-test for a confidence level of 5% (t= 1.96), S^2: Estimated variance of the population (S^2= 0.25), and d: the degree of proper possible accuracy (d= 0.01).

In the next step, the Fuzzy Analytical Hierarchy Process (FAHP), which is an advanced analytical method developed from the traditional AHP (Askin and Guzin, 2007), was used to prioritize the main indices affecting people's participation. The AHP's inability to deal with the impression and subjective-ness in the pair-wise comparison process is enhanced in the FAHP. FAHP replaces the crisp value with a range of values to incorporate the decision maker's uncertainty.

The main steps of FAHP to calculate the weights were as follows. In the first step, fuzzy numbers were defined to make pairwise comparisons. Considering the triangular fuzzy numbers, matrices of the pairwise comparisons matrix were presented based on the Saaty method (1980) (Table 2).

Then, pairwise comparisons between the main indices were conducted using the measurement scale provided by Saaty and triangular fuzzy numbers.

To examine the possibility of the fuzzy ranking of the factors, the Consistency Ratio (CR) of comparisons was calculated by Equation (2).

$$CR = \frac{CI}{RI} \quad (2)$$

Where, CI and RI are Consistency Index and Random Consistency index proposed by Saaty (1980), respectively.

The extent fuzzy value is presented in Equation (3), where i: is row number, j: is column number, and M: is the triangular fuzzy number of the pairwise comparison matrix. In order to carry out fuzzy summation operation, m value of extent analysis is performed by Equation (4), and the inverse form is performed by Equation (5). In these equations li, mi and ui are the first to third components of the fuzzy numbers, respectively.

$$S_i = \sum_{j=1}^{m} M_{gi}^{j} \otimes \left[\sum_{i=1}^{n}\sum_{j=1}^{m} M_{gi}^{j}\right]^{-1} \quad (3)$$

$$\sum_{j=1}^{m} M_{gi}^{j} = \left(\sum_{j=1}^{m} l_j, \sum_{j=1}^{m} m_j, \sum_{j=1}^{m} u_j\right) \quad (4)$$

$$\left[\sum_{i=1}^{n}\sum_{j=1}^{m} M_{gi}^{j}\right]^{-1} = \left(\frac{1}{\sum_{i=1}^{n} u_i}, \frac{1}{\sum_{i=1}^{n} m_i}, \frac{1}{\sum_{i=1}^{n} l_i}\right) \quad (5)$$

The Friedman test, which is widely supported by many statistical software packages, was also used for prioritizing the sub-indices. This nonparametric test is used to examine differences in treatments across multiple test attempts. The procedure involves ranking each row together, then considering the values of ranks by columns. The test statistic is given by Equation (6),

Table 1. Demographic characteristics of Vers Watershed. [a]

Village	Population	Household	Rural district	District
Hesar Khorvan	Mohammadieh	Vers	677	243
		Qiz-qala	77	36
East Eghbal	Central	Dastjerd	281	108
Total		3	1035	387

[a] Source: Census of 2016 Iranian statistics center.

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Table 2. Linguistic variables and triangular fuzzy numbers.

Linguistic variables	Fuzzy number	Triangular fuzzy scale	Fuzzy inverse scale
Equal	$\tilde{1}$	(1, 1, 1)	(1.00, 1.00, 1.00)
Between equal and moderate	$\tilde{2}$	(1, 2, 3)	(1.00, 0.50, 0.33)
Moderate	$\tilde{3}$	(2, 3, 4)	(0.50, 0.33, 0.25)
Between moderate and strong	$\tilde{4}$	(3, 4, 5)	(0.33, 0.25, 0.20)
Strong	$\tilde{5}$	(4, 5, 6)	(0.25, 0.20, 0.17)
Between strong and very strong	$\tilde{6}$	(5, 6, 7)	(0.20, 0.3317, 0.14)
Very strong	$\tilde{7}$	(6, 7, 8)	(0.17, 0.14, 0.13)
Between very strong and extreme	$\tilde{8}$	(7, 8, 9)	(0.14, 0.13, 0.11)
Extreme	$\tilde{9}$	(8 , 9 , 10)	(0.13 , 0.11 , 0.10)

where, K is the number of questions or columns, N is the Number of rows, and R_j is the sum of the Ranks in the j column.

$$\chi^2 = \frac{12}{Nk(k+1)} \sum_{j=1}^{k} R_j^2 - 3N(k+1) \quad (6)$$

The Cronbach's alpha, which is a measure of internal consistency (how closely related the items are as a group), was calculated for checking the reliability of the questionnaires (Equation 7). If the questions relate to the same issue, participants would be expected to get similar scores on each question. Cronbach's alpha ranges from 0 to 1 and scores are expected to be between 0.7 and 0.9.

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} S_i^2}{S_t^2}\right) \quad (7)$$

Where, K is the number of questions, S_i^2 is the variance of Scores for j-th question, and S_t^2 is the variance of each respondent's Scores (the total variance of the index).

RESULTS

Factors that Prevent People to Participate

The review of the literature and interviews with experts and local residents revealed that 18 sub-indices reduced people participation in soil and water conservation projects. The classification of sub-indices into four main indices of social, managerial, economic, and educational categories is presented in Table 3.

Prioritizing Based on Experts Viewpoints

After completing the questionnaires by 19 experts, the main indices were prioritized using the FAHP technique. The values of the consistency ratio and the normalized weights of the indices are presented in Table 4. The calculated consistency ratio (0.087) is less than 0.1 ($CR \leq 0.1$), which is acceptable. The values of consistency ratios of expert judgments also range between 0.018-0.09, which is acceptable. Accordingly, managerial, economic, social, and educational indicators have respectively greater roles in preventing people from participation. Soleimanpour *et al*. (2019b) have also introduced the economic index as the most important factor and the social index as the less important factor that affect the lack of participation of the people from the experts' point of view.

The results of the filled Likert questionnaire analysis using the Friedman test are also presented in Table 5. Accordingly, the range of mean rank values varies from 7.03 to 13.72. The significance level is also less than 0.01 (Sig= 0), which indicates a significant difference in the relative importance of effective sub-indices

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Table 3. Indicators and sub-indices preventing people from participation.

Index	Sub-index	Abbreviation
Social	Low level of literacy and awareness	X_1
	Local disputes	X_2
	Mistrust about the benefits of projects	X_3
	Distrust to governmental agencies	X_4
	Lack of ownership on the lands under executive projects	X_5
	Weakness in teamwork	X_6
Managerial	Lack of multipurpose projects	X_7
	Non-matching of proposed projects with the real needs of residents	X_8
	Lack of employing local labors in project implementation (employment)	X_9
	Absence of stakeholder consultation in projects development stages	X_{10}
	Ignorance of NGOs and local people	X_{11}
	Concentration of decision-making power at headquarters	X_{12}
	Lack of timely and complete project budg*et al*location	X_{13}
Economical	Low income of rural households	X_{14}
	Lack of local residents' income as a direct economic motivation	X_{15}
	Late return of project benefits	X_{16}
Educational	Lack of training residents regarding the objectives of the projects	X_{17}
	Not using the indigenous promoters	X_{18}

Table 4. Consistency ratio and normalized weights of indicators.

Indicator	CI	RI	CR	L	M	U	Normal weight
Economic	0.08	0.9	0.087	0.17	0.39	0.76	0.409
Social				0.06	0.14	0.33	0.156
Managerial				0.16	0.43	1.17	0.435
Educational				0.02	0.04	0.08	0

at a confidence level of 99%. The Cronbach's alpha is equal to 0.705, which is greater than 0.7 and implies the high reliability or internal consistency of the Likert questionnaire.

Prioritizing Based on Residents Viewpoints

The results of the filled Likert questionnaire analysis using the Friedman test are presented in Table 6. Accordingly, the range of mean rank values varies from 3.73 to 1.49. The significance level is also less than 0.01 (Sig= 0) which indicates a significant difference in the relative importance of effective sub-indices at a confidence level of 99%. The Cronbach's alpha was equal to 0.752, which is greater than 0.7 and, therefore, the reliability or internal consistency of the Likert questionnaire is high. Like the experts' viewpoint, managerial, economic, social, and educational indicators have respectively greater roles in preventing people from participation. The economic and social indicators were also evaluated as, respectively, one of the important and the relatively less important factors that prevent people from participation from the residents' point of view (Salehpour Jam *et al*., 2018; Soleimanpour *et al*., 2019a).

The results of the sub-indices prioritization are presented in Table 7. The mean rank values of sub-indices range between 4.93 and 14.38. The significance level is also less than 0.01 (Sig= 0), which indicates a

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Table 5. Ranking of sub-indices preventing people from participation (experts' viewpoint).[a]

Sub-index	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
Mean rank	9.75	7.03	9.69	9.16	12.44	8.06	11.34	8.56	9.88	7.31	7.69	11.47	13.72	9.78	8.75	8.03	9.91	8.84
Priority	8	18	9	10	2	14	4	13	6	17	16	3	1	7	12	15	5	11

[a] Sample size: 19, χ^2: 104.25, df: 17, and Sig: 0.00.

Table 6. Ranking of the main indicators preventing people from participation (local residents' point of view).

Priority	Indicator	Mean rank	Sample size	χ^2	df	Sig
1	Managerial	3.73	193	113.45	3	0.000
2	Economic	3.32				
3	Social	2.71				
4	Educational	1.49				

Table 7. Ranking sub-indices based on local residents' point of view.[a]

Sub-index	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}
Mean rank	6.82	8.59	7.24	6.36	11.79	4.93	14.38	12.43	12.18	13.11	9.71	13.43	9.16	7.62	12.03	8.48	10.34	5.49
Priority	15	11	14	16	7	18	1	4	5	3	9	2	10	13	6	12	8	17

[a] Sample size: 193, χ^2: 108.62, df: 17, and Sig: 0.00

significant difference in the relative importance of effective sub-indices at a confidence level of 99%. The Cronbach's alpha was equal to 0.769, which is greater than 0.7 and, therefore, the reliability or internal consistency of the Likert questionnaire is high.

DISCUSSION

The comparisons summary of sub-indices prioritization from the perspective of the two groups of experts and local residents is presented in Table 8 and Figure 2. The findings indicate that the views of experts and local residents about the factors preventing people from participation in soil and water conservation projects are in some cases consistent and in others inconsistent.

The results of the prioritization of the main indicators from the perspectives of both groups are the same. Accordingly, in order of importance, managerial, economic, social, and finally, educational indicators have prevented the participation of watershed residents in soil and water conservation projects. Salehpour Jam *et al*. (2018) have also identified the economic and planning indicators as the most important indicators, which is in line with the results of our research. Furthermore, the educational index was at minimum importance in previous studies (Mansouri *et al*, 2016; Salehpour Jam *et al*, 2018 and 2020), although some other researches have evaluated social indicators as one of the most important factors hindering people's participation (Soleimanpour *et al*., 2019 a,b). This may be due to the difference in the level of education of local people regarding soil and water conservation projects by the relevant organizations in the two regions.

The results also indicated some differences in the importance of the sub-indices from the perspective of the two groups. Accordingly, from the expert's point of view, the sub-indices X13 (lack of timely and complete project budget allocation) and X2 (local disputes) had, respectively, the most and the

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Table 8. Comparison of the ranks of factors from the viewpoints of the two groups.

Indicator	Priority		Sub-index	Symbol	Priority	
	Expert	People			Expert	People
Social	3	3	Low level of literacy and awareness	X_1	8	15
			Local disputes	X_2	18	11
			Mistrust about the benefits of projects	X_3	9	14
			Distrust to governmental agencies	X_4	10	16
			Lack of ownership on the lands under executive projects	X_5	2	7
			Weakness in teamwork	X_6	14	18
Managerial	1	1	Lack of multipurpose projects	X_7	4	1
			Non-matching of proposed projects with the real needs of residents	X_8	13	4
			Lack of employing local labors in project implementation (employment)	X_9	6	5
			Absence of stakeholder consultation in projects development stages	X_{10}	17	3
			Lack of attention to NGOs and local people	X_{11}	16	9
			Concentration of decision-making power at headquarters	X_{12}	3	2
			Lack of timely and complete project budg*et al* location	X_{13}	1	10
Economic	2	2	Low income of rural households	X_{14}	7	13
			Lack of local residents' income as a direct economic motivation	X_{15}	12	6
			Late return of project benefits	X_{16}	15	12
Educational	4	4	Lack of training residents regarding the objectives of the projects	X_{17}	5	8
			Not using the indigenous promoters	X_{18}	11	17

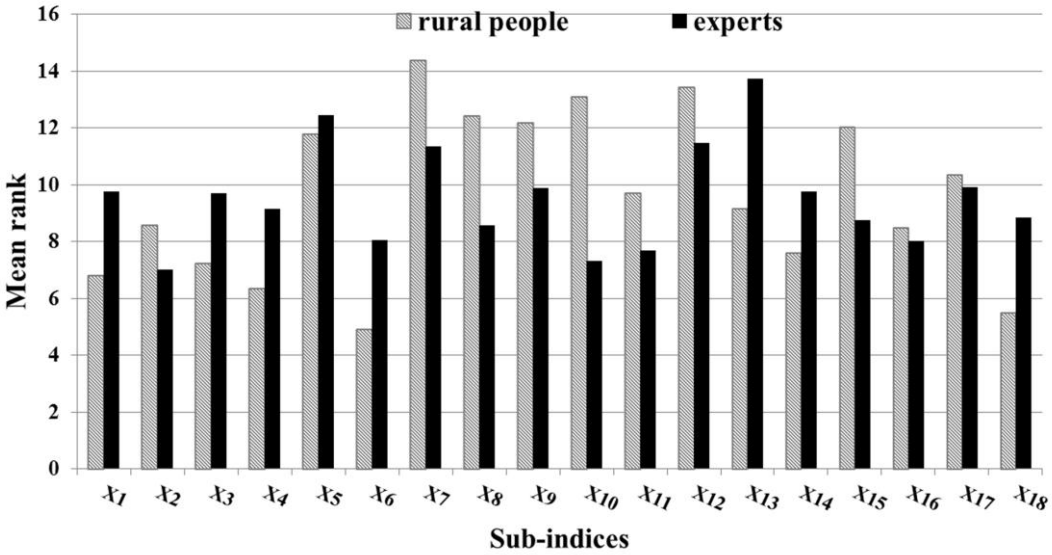

Figure 2. Comparison chart of sub-indices prioritization from the viewpoints of the two groups.

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least importance. That is while, from the residents' viewpoint, the sub-indices X7 (lack of multipurpose projects) and X6 (weakness in teamwork) were ranked as the most and the least important factors that have prevented people from participation. Due to the working relationship and familiarity of governmental experts with issues such as project budget and its allocation, they have considered X13 as the most important factor and this is while the watershed residents are not so familiar with the mentioned issues. On the other hand, the implemented projects have only the objectives of soil and water protection, the benefits of which do not directly reach the residents of the watershed. Since local people are interested in multi-purpose projects that, in addition to meeting the objectives of soil and water protection, can also directly benefit from their existence, so, they have considered X7 as the most important factor.

From the perspective of both groups, three sub-indicators including X7 (lack of multipurpose projects), X12 (concentration of decision-making power at headquarters), and X9 (lack of employing local labors in project implementation), have been also ranked as one of the first six priorities, which implies that both groups agree that these factors have had greater roles in preventing people from participation.

Both groups agree that decisions on projects are taken at the headquarters and governmental centers, and local communities are not involved in decision-making. Salehpour Jam *et al*. (2018) have also introduced this sub-indicator (concentration of decision-making power at headquarters) as one of the most important factors that affect people's participation in natural resource projects negatively. It should also be noted that if both groups agree on the low priority of a sub-indicator such as X6 (weakness in teamwork), it does not mean that it is unimportant and its mere identification implies its negative role in people's participation. Therefore, the low rank of such factor only reflects its relatively lower importance than the others.

There is a great difference between the viewpoints of the two groups about the relative priority of X10 and X13 sub-indicators. According to experts, X10 (absence of stakeholder consultation in projects development stages) is ranked 17th, while the watershed residents ranked it as the third factor that prevented their participation. The reason for this difference should be found in the design stage of the watershed projects where the watershed contractors and consulting engineers ignore the stockholders and, probably, proposed watershed projects without consulting the residents. However, experts from the provincial administrations believe that the people were consulted in this regard. According to experts, X13 (lack of timely and complete project budget allocation) also ranked as the most important factor, while from the perspective of local residents, this sub-indicator had moderate importance (tenth priority). The reason for this is also the lack of awareness of local residents regarding the amounts of approved budgets for watershed projects. Experts believe that this factor has delayed the implementation of the projects and thereby has caused some kind of distrust about the watershed projects and their benefits.

These differences imply that, in addition to the viewpoints of experts, policy-makers must also consider the views of stakeholders on the factors preventing their participation. However, it must be noted that despite these differences along with factor priorities, all identified factors have had various impacts on preventing people from participation and, therefore, managers should consider all of them, especially the high-priority ones. Developing and applying executive instructions to remove the identified participation barriers will increase the stakeholders' participation level in watershed management.

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CONCLUSIONS

Participatory watershed management can increase the productivity of watershed services. Stakeholders' participation in soil and water conservation projects reduces operating costs and can lead to more effective project implementation. Despite the emphasis of governmental agencies on participatory management of watersheds, stakeholders' participation has not been significant in the watershed reclamation projects. To promote peoples' participation level, it is crucial to identify the main factors preventing rural stakeholders' participation. While previous studies have mostly investigated effect of demographic factors on the extent of people's participation, this study tried to compare the viewpoints of local people (the case of Vers watershed) and experts about the priority of the preventing factors. Our results indicated that there are some differences in the importance of preventing factors from the perspectives of the two groups. These differences imply that, in addition to the viewpoints of experts, policy-makers must also consider the views of stakeholders on the factors preventing their participation.

Our findings showed that factors such as obtaining the stakeholder's viewpoints, decentralization of decision-making from the headquarters, NGOs activities, and training the local residents, along with due consideration of the profits of stakeholders, and multi-purpose projects can promote the participation of stakeholders in the watershed development projects. Despite these differences along with factors' priorities, it must be noted that all identified factors have prevented the participation and, therefore, managers and policy-makers should consider all of them, especially the high-priority ones. Therefore, it is suggested that the relevant executive agency (Forests, Range, and Watershed Management Organization) develop a participation-oriented process to identify these preventing factors for other watersheds. Applying the executive guidelines to remove the identified participation barriers will increase the stakeholders' participation level in watershed management. The executive organizations can promote the level of peoples' participation by removing these participation barriers especially the high-priority ones.

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اولویت بندی موانع مشارکت روستاییان در پروژه های حفاظت خاک و آب آبخیز ورس

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چکیده

مشارکت مردم یک استراتژی مهم برای مدیریت موفق حوزه‌های آبخیز است. هدف از این مطالعه شناسایی، طبقه‌بندی و اولویت‌بندی عوامل موثر بر عدم مشارکت آبخیزنشینان بر اساس دیدگاه های روستاییان و کارشناسان در آبخیز ورس است. این عوامل از طریق مرور منابع و مصاحبه با کارشناسان و اهالی محل شناسایی و دسته‌بندی شدند. روایی و پایایی پرسشنامه ها به ترتیب توسط متخصصان و آزمون آلفای کرونباخ بررسی شد. حجم نمونه نیز با فرمول کوکران محاسبه شد. سرانجام شاخص‌ها و زیرشاخص‌های مانع از مشارکت مردم با استفاده از فرآیند تحلیل سلسله مراتبی فازی (FAHP) و آزمون فریدمن اولویت‌بندی شدند. نتایج نشان داد که نظرات کارشناسان و ساکنان محلی در برخی موارد سازگار و در موارد دیگر متناقض است. به‌طورکلی، شاخص‌های مدیریتی و اقتصادی بیش از شاخص‌های اجتماعی و آموزشی در جلوگیری از مشارکت مردم نقش دارند. کارشناسان معتقدند عوامل X13 (عدم تخصیص به موقع و کامل بودجه پروژه) و X2 (اختلافات محلی) به ترتیب بیشترین و کمترین درجه اهمیت را دارند. اما ساکنان محلی به ترتیب X7 (عدم پروژه های چندمنظوره) و X6 (ضعف در کار تیمی) را به عنوان مهمترین و کمترین عوامل معرفی نموده‌اند. این اختلافات حاکی از آن است که علاوه بر نظرات کارشناسان، سیاست‌گذاران باید نظرات ذینفعان را نیز در مورد عوامل جلوگیری از مشارکت آنها در نظر بگیرند. یافته‌های این تحقیق برای مقامات اجرایی مناسب و کاربردی است زیرا حذف این موانع مشارکت به ویژه مهم‌ترین آنها باعث افزایش سطح مشارکت ذینفعان خواهد شد.

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