



Identifying and prioritizing effective factors in preventing participation of rural societies in watershed management projects: A Case study of Bozijan Watershed, Markazi province, Iran

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Extended Abstract

Introduction: The complex and dynamic nature of watershed problems requires flexible and transparent decision-making that embraces a diversity of sciences and values. However, while the significance and effective role of stakeholder participation in natural decision-making and its benefits have been emphasized and discussed by different scholars and it has been considered in national and international planning, it has not been put into practice in desirably, leading to the discontent of some watershed stakeholders and operators. As watershed projects play an increasingly important role in managing soil and water resources throughout the world, knowing the factors involved in encouraging residents of watershed areas to participate in watershed activities is considered a significant principle in realizing the effective participation of stakeholders in integrated watershed management and achieving the intended goals in this regard. Therefore, the identification of such factors can help relevant authorities benefit from the effective participation of the stakeholders in conservation activities. This study sought to identify, classify, and prioritize the factors involved in discouraging people from participating in watershed projects, using the viewpoints of the experts and residents of Bozijan watershed in Markazi Province.

Materials and methods: Different factors which may be involved in discouraging people from sustained participation in watershed plans were classified in terms of economic, social, human (educational and propagational), and planning indices. To this end, these factors were identified and categorized based on the review of related literature, and in-person interviews with experts and residents of the watershed area. Then, pairwise and Likert questionnaires were prepared as a measuring tool whose validity were confirmed by expert opinions.

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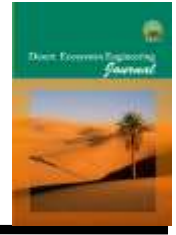
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Finally, after determining the sample size via Cochran formula, 101 questionnaires were administered and the indicators and sub-indicators involved in discouraging people from sustained participation in watershed plans were prioritized, using Fuzzy Analytical Hierarchy Process and Friedman Test.

Results: After identifying various factors involved in non-participation in watershed projects, they were classified in terms of are educational-propagational, social, design-executive, and economic indices and sub-indices for the Bozijan watershed. In this study, eight questionnaires which had been completed by experts and one hundred and one questionnaires which had been completed by residents of the watershed area were analyzed via T test, Analytical Hierarchy Process, and Friedman nonparametric test. The results showed that while from the experts' viewpoints, the educational-propagational, design-executive, economic, and social indices were, respectively, the most influential factors involved in order of propriety in the non-participation of the Bozijan watershed's residents in watershed management projects, it was educational-propagational, economic, design-executive, and social indicators that contributed the most to such non-participation from the resident's perspective. Moreover, experts argued that "Concentration of decision-making power regarding planning and implementation in the Directorate General", "The elderliness of the residents", and "Offering no training for the watershed area's residents by executive officials" were the most effective sub-indices in discouraging people from sustained participation of rural communities in watershed projects, and "The residents' ethnic and local disagreements" was the least effective sub-index in this regard. The range of average ratings varied from 3.79 to 11.6 in this group. In addition, based on the viewpoints of watershed area' residents, sub-indices such as "The residents' discontent concerning the projects' outcomes", "Disregarding the residents' benefits as direct economic incentives, and "Lack of sense of belonging in areas of project implementation by the residents" were the most important factors in their non-participation in watershed activities in order of propriety. The range of average ratings varied from 3.096 to 10.86 in this group.

Discussion and Conclusion: As mentioned before, from the viewpoints of experts and the watershed area's residents, the educational-propagational index was the most important factor involved in non-participation of people in watershed projects, followed by the design-executive and economic factors. In other words, both experts and the residents believe that prior to any planning and executive activity, people should well be informed and trained; a fact also confirmed by Rahimzadeh and Charrmchian (2019), and Mahmoudi and et al (2018).

The order of sub-categories mentioned by the watershed area's residents indicated that any decision made concerning the watershed-related issues could somehow affect their lives. Therefore, they expect to be involved in decision-making structure, and economic approaches are of second importance for them. The experts have also affirmed the non-presence of people in decision-making and planning of executive tasks. In other words, both people and experts argue that mutual communication and participation are necessary for deciding over watershed issues.

Keywords: Bozijan watershed, Non-parametric tests, Participation of stakeholders, Questionnaire, Watershed comprehensive management.