

Study Patterns of Public Participation in Integrated Watershed Management (Case Study: Catchment Taleghan)

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Abstract Sustainable exploitation of resources in watersheds and protect it involves looking at all aspects of the system, including the necessary attention to the role of local communities in the watershed. After more than two decades, the second generation of watershed management activities in Iran, the country experienced different patterns of collaborative management of watersheds, but has not been evaluated as necessary. Analytical models of collaborative management with internal and external research and field studies conducted in the watersheds of an internal model, using methods such as PRA and RRA participatory assessment been carried out Library and information field data and results of the socio-economic impacts and conservation of resources and the availability of participatory management objectives. To provide for the comprehensive management of watersheds, have been collected and analyzed. The results show that, in general, create a barrier and enter the area for the construction of the dam to the participation of makes it less .What government agencies and non-governmental programs or opinion should be more emphasis on public participation.

Keywords: *watersheds, management, public participation*

Cite This Article: Shima Safa MA, "Study Patterns of Public Participation in Integrated Watershed Management (Case Study: Catchment Taleghan)." *American Journal of Environmental Protection*, vol. 3, no. 6 (2015): 187-192. doi: 10.12691/env-3-6-2.

1. Introduction

Various large and small watershed projects in the basin has increased in the past years has been followed by spontaneous different views among the villagers, managers and experts.

However, the development trends of hard work (mechanical and biological treatment), regardless of the appropriate software (provided appropriate conditions of management), prevents the formation of collaborative management in watersheds.

Sustainability and the environment, without the participation of the people and help them in protecting the environment are not allowed. So the government alone can not afford to do.

Participation issue covers all aspects of sustainability and stability would be meaningless without it. If the villagers do not participate in the development process, how to prevent damage to the environment of the poor or how the traditional rural culture such as flood irrigation and avoided deforestation. All this requires full public participation in sustainable development programs.

When a new technical knowledge in the form of models and technical management of natural resources, along with their social values down to the rural community, it does not provide a context for understanding the knowledge of rural. (Ibid).

Participation is important for people to succeed wield any activity including rural development projects. [1]

The active participation of local communities in watershed management requirements is inevitable. In order to solve the stated problem, this research is to investigate the issue of public participation in integrated management of watersheds.

2. Ease of Use

2.1. Project (Concepts)

2.1.1. Sustainable Development:

Sustainable development means no damages imposed economic, social and environmental future generations [2].

2.1.2 Participation: the contribution of the different definitions. Gaotri say in the participates definition "social partnership process, the public, integrated, multi-source, multi-dimensional and multi-cultural, which aims to bring all people to play a role in all stages of development. [3]

In this study, the mean value for the role of public participation in decision-making, implementation, review and evaluation process that is non-governmental voluntary. Participation is a process, not static product outcomes, puts emphasis on the concept of participation is based on three fundamental values:

First, the share of people in authority, the second way to monitor the fate of his people

Third, advancement opportunities open to the public or the lower classes of society.

Watershed management: Management concept is in its developmental stages in the world with the development of watershed management plans in the 1990, gradually awareness of the need to involve different aspects of knowledge, including biophysical and socio-economic aspects of watershed management plans increased. Gradually during the evolutionary process in the 1990, test scenarios, and develop information management strategies were considered

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Research Methods

This research used both primary and secondary data sources. The primary source was based on collection of some semi-structured interviews conducted in the Save Catchment. Interviews were conducted with the local fishermen, Rural District Council Officials (RDCOs), small-scale business men, farmers, employees and NonGovernmental Organizations. Multiple interviews were conducted and recorded on tapes, and each lasted for the average of 30 minutes or more depending on the participant's ability to articulate his views. Materials which include published journal articles, unpublished dissertations, internet materials and text books constitute secondary data sources.

Qualitative methodology was used for this study and Grounded theory was selected because interviews constitute the main source of data. This method was first developed by two sociologists, [4] to generate inductive theories from data. It involves the use of constant comparisons and coding paradigm for conceptual development of theories. It is based on the premise that theory at various levels of generality is significant for gaining a deeper knowledge of a social phenomenon [4].

The interview tapes were first transcribed with the aid of Express Scribe software. After the transcription was completed, an iterative process of coding began. Open coding was done using a highlighter to mark sentences or paragraphs giving it a code and at the same time writing the code name by the side of the paper. This was followed by axial coding in order to generate categories by grouping various codes around a common word with greater explanatory power. At the same time memos were written as records of analytic and conceptual meaning of words or statements. The process was repeated until saturation point or until a point where new codes or categories could not be generated. The emergent themes form the findings for the study that are presented and discussed.

Methods and techniques used for qualitative methods

In qualitative research methods rapid rural assessment, participatory assessment, semi-structured interviews were

used. Interviews transcend walk, group discussion, and mapping were among the techniques used in this study. In this section sampling and interviews were conducted in three steps: before, during and after the survey. Since in qualitative research the focus is rather on data obtained from the situation than the number of samples, therefore researcher continues sampling until saturation [4]. In this procedure interview with the sample continues until the next interview won't give new information.

Table 1. Conducted group discussions

Location	number of interviewees	Subject
Zidasht	10	Made dam
In front of an old woman's house	8	Participation

Interviews¹

In this research, interviews with experts, public administrators, and other stakeholders have been conducted.

Sampling

Since qualitative research focusing on the information obtained from the samples, researchers sampling continued until saturation.

Analysis Unit: The unit of analysis is the household head.

General description and location of the study area

Watershed in northwestern Tehran is an area of approximately 124265 hectares. It is located in Alborz Province. This area is one of the areas Sefidrud river finally sheds the Caspian Sea.

The study began in 2002 to build a dam to store water in the river floods in spring and also in gaining new collection.

Construction purposes:

1. Supply agricultural water Plain Qazvin
2. The supply of drinking water to the cities of Tehran, Karaj
3. Artificial nutrition Plain Qazvin
4. Gaining control seasonal flooding river

Hydroelectric power plant in the world, including the dam was built. Average annual production is 61 gig watts of hours.

City is made up of three sections below the top gaining and gaining. In this study, the upper part of the central part Zidasht Talqan, Joestan and were selected as study areas. But for some reason, such as inaccessibility and remoteness of the area below the dam, as well as gaining financial difficulties and time of the rural poor in gaining selected.

3. The Data and Findings

A) The documents

Gathering internal and external sources in relation to the experience of public participation in watershed management projects.

The first has been to investigate and identify lessons learned and key issues regarding the experiences of FAO and other relevant agencies and after it has been paid to the participation studies in Iran [5].

¹ In this interview as a qualitative research method used is not just a tool

Preparing the next generation of watershed management programs conducted by FAO

With regard to the participation of residents, social, economic and cultural needs and aspirations of the watershed and the capacity to formulate and implement regional natural areas of Natural Resources in order to empower people, lands prone to the development of garden so they put in the dryad of the government's role in the granting of land and facilities can still be seen.

• Studies in Iran

1. Navayegan watershed

The groups plan to launch their first experience in the field of watershed management is the basis and cause awareness of the multiple benefits of environmental, social and economic watershed, watershed development in recent decades has provided grounds.

2. Dejkord watershed

The project was conducted in 2004 sought to address the challenges, such as low agricultural productivity, environmental degradation problems, and more.

Good understanding of the key points of the plan rules, the development of effective.

Communication channels with stakeholders and involvement of all stakeholders in the design, monitoring and implementation of the project and thus the sustainability of the achievements of the project.

Another point in the project to discuss the role of multiple stakeholders in the implementation of a project, the roles and responsibilities of each of the partners must be given clear.

3. Hablerood project

Hablerood project national action plan for sustainable management of land and water resources has started.

This is in collaboration with FAO and the Ministry of Construction Jahad in 1997 as a project leader in the catchment.

This project provides participation planning and watershed management in Semnan and Tehran provinces. One of the successful projects in the field of natural resources, public participation in the implementation of watershed management plans were.

• Studies in other country

1. Participatory Integrated Watershed Management Project Gambia

Now copy the results of this project have continued across the country and much of the research on planning in this regard is ongoing. project is a meta-analysis by the Comprehensive Assessment of Water Management in

Agriculture has been done to assess with more than 100 national and international organizations, including research and development centers of CGIAR and FAO deals. Meta-analysis is a statistical method that integrates the multiple spatial scales and studies of micro and macro-level as well as integrates the rational distribution is temporary.

This study shows that watershed management plans specifically in rain-fed areas with the primary goal of improving the livelihoods of poor rural households have been launched. Watershed plans by various government agencies in a very wide range of agricultural planning, developed and implemented as well as review the existing literature shows that investment in watershed management programs have yielded positive results, such as raising income levels , create employment opportunities and

protect soil and water resources Assess the impact of watershed management programs and participation

2. JICA project

The project was conducted in the Golestan province in order to promote public participation in water management based level action to implement the new version of participatory management of water in the region has Tazeabad The project cycle management, project cycle management, which generally participatory approach to planning and managing the implementation phase, the project is multi factorial and logical, consistent, transparent and solve the problem, it is other features. The plan to improve livelihoods through participation in watershed development in India was conducted in 2000, the region in the past decade saw increasing decentralization of responsibility for natural resource management at the community level. The current plan is to remove the problems of watershed development programs.

In this study, methods of watershed management interventions externally imposed biophysical methods evolved in a wider range of activities, including the activities of the partnership has changed, so the impact of turning on household assets and wealth creation has increased.

3. Improving livelihoods through participation in watershed development in India

According to the project, such as the FAO report, Participatory Integrated Watershed Management Project Gambia, improving livelihoods through participatory watershed development in India and other projects examined, it can be said that in developing countries, mainly in the economy depends on agriculture and rapidly growing urban population in the food and drink on an unprecedented scale will depend on the destruction of natural resources that the biggest limitation for the sustainable development of agriculture in many developing countries.

Therefore, the management of soil and water resources will be achieved only by adopting an improved system. As a result, highlights on concepts and new methods, especially for partnerships government agencies, with NGO's and public and stakeholder participation in soil and water management. So it can be constructive factors in the success of the project are:

- Due to the economic and social conditions in the study area, such as livelihoods, employment, etc.
- Coordination of government agencies, NGOs and the public
- Inform the public of the proposal which is the first step to the final step, the construction and maintenance of the measures taken
- Inform the public of the benefits that the project will take.
- Trust of the people and executives to plan
- Empowering local communities

The Save Catchment project focuses on developing the capacity of local communities, institutions and coordinating outside assistance to manage water resources in the Catchment. The underlying understanding is that improved farming systems (crop management, pasture, and fodder development, livestock management) provide sustainable rural livelihoods and opportunities for adding value to farm and non-farm products and services.

B) The field of public participation

- 1. Quantitive method
- 2. Qualiyive method

• Qualities method

Interview and questionnaire factors:

Comments that include experts and managers in the public sector and the NGO's

• Comments that include government agencies

Partnership with government agencies and other government agencies such as Department of Natural Resources is very pale. Experts participate in the councils of the people that almost all the village council, but their participation is just as much information about the needs and problems. And participation in watershed management plans are implemented and maintained .

• Comments that include NGOs

Participation of NGO

An environmental NGO called experts are involved in the mining sector and participation signed with the mining of soil erosion.

• Comments that include Managers

Here, economic, cultural and communications managers in three areas highlight.

3.1. In Terms of Cultural Standpoint

Managers must think that people do not have violated the law apply to administrators. For example, in the Alborz mountains to fight the farmer came in waves.

3.2. In Terms of Economically

In discussing the economic infrastructure can be traced to the lack of power. Managers in the field believe that our people do not actually have any real participation by all of us will pay. For example, in discussing the lack of protection is clearly seen. The directors consider that the funds do not enough. Also the possibility of even a laptop does not rejoice in this category. GPS for use in the basin requires atom laptop wireless connection was there too few. Machine set too low for a few months before the new machine was set, but still not enough.

3.3. In Terms of Communication

Managers believe that government agencies will have many problems, but with a number environmental organizations signed Memorandum. Another problem is that manager's councils to non-native pasture lease, and receives the money. Of course council informs the people of the village, as well as information about the deterioration of watershed management. Generally, executives believe that when people were in rural place much worked better with him. But now people have found instant visibility and are even willing to perform traditional methods.

Generally, executives believe that "when village chief were in the rural was much better because the people he worked with him." the traditional way Performed even if they had little interest. But now people have found instant visibility and are even willing to perform traditional methods.

Of course we see the traditional participation in gaining the upper village. They classify their pastures and livestock grazing are periodic basis.

4. Comments Community

Based on interviews with public opinion in several cases were classified.

- The opinions of people in remote villages to live in gaining long way from town.

However, some parts do not come in and ask why we have it, but still have not received anything.

- The dam is located in the popular village.

People in this area weren't satisfied of dam that has been construction. And we can't feel our needs. We have fill fruit and vegetables from some car that bring fruit and vegetables from other villages. And also many young people were all unemployed".

- Most rural communities elsewhere in the country or the world they live in.

Many of the people living in this area have already been born in this village and now they do not have much knowledge Watershed. They have spent free time in their villa and live in Tehran or other country. On the one hand, argues that the public sector itself has numerous problems and suggest that the infrastructure must be changed. The main problem with the non-native village council's lease pastures. Infrastructure must change their original Nmaynd.mzl councils rent to non-native pasture village.

However, in order to inform the needs of local people and informing. They have contributed to the deterioration of watershed management.

The main problem is that people are no managers in connection with the participation of local people in genuine partnership with them.

Given the above discussion of the strengths and weaknesses of participation can be found in this region. In the table below:

Table 2. The strengths and weaknesses of participation

Weaknesses	Strengths
Lack of active participation of NGO	Attention to public participation
Failure to educate the public and promote constructive dialogue	Knowledge of indigenous people
Failure to demonstrate the benefits of the plan to the people	Information Boards
One of the main reasons for ensuring community involvement in TALEGHAN is to reduce conflicts and help projects to achieve the intended objectives.	Farmers believe that none of the project staff didn't considered water users as a potential solution for strategy.
Stakeholders are supported to adapt the technologies to the site specific conditions.	

- Quantitative method

Quantitative method characterized by regular structured collection of data matrix is variable depending on the data.

Some variables described in [Table 3](#) and [Table 4](#)

Table 3. Analysis of the population in the region

years	1996	2006	2011
Zone(figure)	Zidasht	540	733
	Joestan	383	421

Table 4. analysis of the in literate

Literacy	Uneducated	Literate
Zone	Zidasht	19
	Joestan	11

Table 5. Analysis of hypothesis

Hypothesis	test	sign	Description
There is a relationship between lifestyle and economic capital.	Somer'sD	0. 005	The relationship exists and H1 is accepted.
There is probably a significant difference in lifestyle among generational age.	Scheffe test	0. 03	There is a significant difference between different groups in terms of capacity.
There is probably a difference in lifestyle between single and married people.	F test	0.597	The null hypothesis H^0 is accepted and there is no relationship between gender and lifestyle.
There is probably a difference in lifestyle between women and men.	F test	0.897	The null hypothesis H^0 is accepted and there is no relationship between marital status and lifestyle.

Table 6. The strengths and weaknesses of participation

Variables entered	Variables not accepted	Model
Job, land, education, number of animals, factors affecting participation, age, awareness, participation field	-	1

Table 7. Model summary

R	Std/ Error of the Estimate	Adjusted R Square	R Square
0/797	0/251	0/621	0/635

R Square is equal to 0 / 635 this means that variables entered alone, 0 / 63 explain the changes in dependent variable and other remaining changes are shares of other variables.

Table 8. Anova

Model	F	Sum squares	df	Sig
Regression	46/680	2/946	6	0/000
Residuals		0/063	161	
Total			167	

5. Regression Equation

$$\begin{aligned} \text{Participation rate} \\ = -1/8 + 0/357(\text{levels of Awareness}) \\ + 0/239(\text{Rainfed}) + 0/231(\text{The lands}) \end{aligned}$$

The lesson of experience on is that potential technological strategies should be tested through on-farm research where stakeholders are supported to adapt the technologies to the site specific conditions. This step by step process of technology development allows labor and input costs to be spread out over time, reducing the risk of stakeholders. In initiatives, technological choices should be offered as principles, methods, components, and as a basket of choices to be adopted, rather than as prescriptions [6]. Stakeholders should be given training and support in innovating, in evaluating results and in disseminating lessons

6. Conclusion

First, to discuss the current participation of rural people in watershed management activities described above. Joestan and Zidasht's participation are in two significant differences. Joestan average participation of 2.637 and the average turnout in the village Zidasht is equal to 1.891, which reflects the higher participation of people Joestan. As qualitative findings suggest that the dam many people Zidasht their land submerged and place to do cultivation and animal husbandry. Therefore, they are less willing to

participate in Watershed Management and are very unhappy with this situation.

And inform the Council as an important factor in the consciousness of the people mentioned and the positive step for the rest of the steps described.

But the majority of the people were not familiar with this type of activity increases and indigenous knowledge in this area is considered to be more effective because they have been involved. And dams have lost their land and are now unemployed.

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Lack of active participation of NGO's is one of the weaknesses in the management of the area.

Vebler and Toler in their work as a: Researchers believe the four perspectives on how best to participation in watershed planning are:

- The first view holds that a good process to be credible, legitimate and popular, so people accept it and try to maintain the results.
- The second view of the technical production resulting from this partnership.
- The third perspective, focus their attention on the stems.
- The fourth approach to educating the public and promoting constructive dialogue deals

As we have seen some of the work done by people who did not know and sometimes Zidasht who had no knowledge of these activities Because, according to experts, government agencies such operations have been carried out in nearby mountains Zidasht that people do not see it.

7. Proposed Solutions

- Implementation of watershed management activities according to the needs of the rural population

- Run Watershed activities without removing the benefits of rural people
- Informing the public institutions for watershed management activities through regular meetings of the council and even people
- Meetings for the purpose of assessment of the village
- Meetings to inform about the activities that are done in the village.
- Meetings to consult with people about how to run
- Meetings to inform people about the activities of satisfaction
- ask for help rural people to perform these activities
- facilitate collaborative opportunities for public participation
- Stakeholders should be given training and support in innovating, in evaluating results and in disseminating lessons
- Government agencies in an effort to involve the participation of NGO.
- Awareness of people about the extent of watershed management activities there. The expansion of activities promoting the education and provide examples of successful solutions in the field of watershed management

can be effective in the development of watershed management.

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