



FARMERS' TENDENCIES TOWARD PARTICIPATORY IRRIGATION MANAGEMENT

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ABSTRACT

In most developing countries, irrigation management is heavily dominated by the public sector. However, government operated irrigation schemes are poorly maintained with steadily deteriorating infrastructure. A current solution to this dilemma is participatory irrigation management (PIM). This participatory approach seeks to share the burden of irrigation operation and maintenance cost with the beneficiaries. For any participatory approach to be effective, qualitative studies are needed to assess how beneficiaries think about the outcome of such projects. Therefore, the purpose of this qualitative study was to assess farmers' tendencies towards participatory irrigation management among members of Sarabbas and Sefidbarg Water Users Association (WUA in Kermanshah province). Using focus group techniques among 103 members, results indicated that farmers have somewhat weak tendencies toward PIM. They felt that farmers can not share the cost of irrigation facilities and the current facilities are out-of-date. Further, they were not interested to install water meters and applying for loan was against their religious beliefs. Although farmers were willing to solve water problems among themselves, but they believed irrigation operation and maintenance should be the responsibility of government agencies.

INTRODUCTION

Almost 40% of the world's food crops are produced by irrigated agriculture. Thus, the performance of irrigated and drainage is critical to the food supply and to farmers' income, as well as to the environment. The ultimate goals in managing irrigation water are efficiency, equity and sustainability (Sun, 2000). Efficiency has been achieved if every drop of water has been properly allocated and used without any waste. The goal of equity means that water is fairly distributed among users. Some farmers may have an advantage over others. Those at the head of a canal have an advantage over those living downstream, as they have first access to water. Influential farmers may have better

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access to water than poor farmers. In some cases, ideals of efficiency and equity may be in conflict. The goal of sustainability, therefore means that the users of today should maintain the quality and quantity of water resources for the use of future generations (Sun, 2000).

Managing irrigation so as to achieve efficiency, equity and sustainability is very difficult. Market mechanisms are not enough and high prices for water when it is scarcest mean that low-income users may lose their access to water. Unrestricted use if prices are low may lead to pollution, water-logging and over-use of groundwater. Given the special characteristics of irrigation water, there is a good reason for government to intervene, and even directly manage irrigation systems. However, when a centralized agency is in charge of planning and operating an irrigation system, the result is often too much bureaucracy. Moreover, too much money is spent on staff salaries and as a result, the cost of water is high with poor irrigation service, and yet the users are unwilling to pay their irrigation fees. The result is a vicious circle of high costs, poor services and low payment of fees, leading to inadequate funding and further deterioration of services.

One way out of this difficult situation is the participatory approach to irrigation management. Increased farmer participation in irrigation is part of a world-wide trend of devolution in natural resource management. Experience shows that farmers all over the world are potential managers who, when properly organized, are able to manage their own affairs. Participatory irrigation management (PIM) is increasingly viewed as a means to improve the performance of irrigation investments. Beginning in the 1980s, there have been large-scale programs to turn over irrigation management from government agencies to organized water user groups in a number of countries, such as the Philippines, Indonesia, Senegal, Madagascar, Colombia, and Mexico.

The idea that farmers should participate in irrigation management has grown in Iran since the mid-1980s. The premise is that when farmers are clearly the owners of the physical system, so that the maintenance costs are their own responsibility, they will have a strong incentive to protect the physical integrity of the system to reduce their overall costs. Moreover, PIM has been driven by the need for a higher return from the massive funds invested in irrigation, which plays a major role in increasing agricultural production. However, in western part of Iran, these irrigation systems exist in isolation with limited participation of farmers. The purpose of this qualitative study was to shed light on farmers' perception towards participatory irrigation management in Kermanshah province.

PURPOSE AND OBJECTIVES:

The purpose of this study was to assess farmers' perceptions toward participatory irrigation management. Specifically, the study sought to identify PIM issues from farmers using nominal group technique.

METHODS AND PROCEDURES:

This qualitative effort used a focus group approach to meet the objectives of the study. Interview questions for focus group leaders were designed to gain an understanding of the issues facing farmers, as experienced by each of the respective groups of individuals

composing the focus group. Farmers were asked to respond to four open-ended questions regarding their perceptions toward participatory irrigation management. The questions were: 1) what do you think about participatory irrigation management? 2) what do you think the major obstacles are in operating and maintaining irrigation systems? 3) What are the problems with installing measuring devices? 4) Would you apply for a loan in order to develop irrigation systems?

Focus group were composed of farmer (n = 103). The nominal group technique (Delbecq, Van de Van & Gustafson,1975) was used to facilitate the identification of problems facing participatory irrigation management among farmers, followed by discussion sessions. The nominal group technique is done only when group consensus regarding the prioritization of issues is important to the overall research or planning project. The nominal group technique can be used as an alternative to both the focus group and Delphi techniques. It presents more structure than the focus group, but still takes advantage of the synergy created b group participants. As its name suggests, the nominal group technique is only "nominally" a group, since the ranking are provided on an individual basis. Focused group sessions ranged from 3-5 hours in length and were facilitated by researchers. At the conclusion of each session, notes were transcribed and summarized into tables with frequencies and percentages.

RESULTS:

The first research question assessed farmers' perceptions toward participatory irrigation management. As shown in table1, the majority of farmers (43.7%) perceived PIM as creating extra burden or obligation on farmers. However, 21.3% of participants perceived PIM as autonomy among users. Moreover, 25.2% of farmers believed PIM is not possible since water users don't get along well with each other and it would create communication problems among farmers.

Table 1. What do you think about PIM?

| Answer | Frequency | Percentage |
|---|-----------|------------|
| Develops financial obligation for farmers | 45 | 43.7 |
| Not possible considering current communication problems among users | 26 | 25.2 |
| Provides autonomy among users | 22 | 21.3 |
| Develops sense of responsibility | 6 | 5.8 |
| Government agencies are unable to manage irrigation systems. | 4 | 3.9 |

The second research question assessed major obstacles in operating and maintaining irrigation systems as perceived by farmers. Results indicated (table 2), the majority of farmers believed the irrigation facilities are out of date and a frequent electricity shortage creates more problems for farmers.

Table 2. what do you think the major obstacles are in operating and maintaining irrigation systems?

| Answer | Frequency | Percentage |
|---|-----------|------------|
| Irrigation facilities are out -of- date | 54 | 52 |
| Frequent electricity shortage | 25 | 24 |
| Irrigation facilities have no problems | 18 | 17 |
| I have no knowledge of facilities maintenance | 6 | 5.8 |

The third research question asked farmers to what extend installing measuring devices cause problems. As shown in Table 3 the majority of users were against such installation due to high cost and complicated maintenance problems.

Table 3. what are the problems with installing measuring devices?

| Answer | Frequency | Percentage |
|--|-----------|------------|
| The majority of users are not willing to install measuring devices | 44 | 42.7 |
| Too expensive | 26 | 25.2 |
| Complicated maintenance problems | 11 | 10.6 |
| It should became mandatory | 6 | 5.8 |
| Unreliable water resources | 2 | 1.9 |
| I have no knowledge of install measuring devices | 5 | 4.8 |
| It doesn't help much | 3 | 2.9 |
| Having to pay water fee limits installing measuring devices | 3 | 2.9 |
| There is no problem installing measuring devices | 3 | 2.9 |

Finally, the fourth research question assessed farmers' willingness to apply for loans in order to develop irrigation systems. Results revealed that the majority of farmers are against loans due to religious beliefs. However 40.7% of farmers were interested to apply for a loan (table 4).

Table 4. Would you apply for a loan in order to develop irrigation systems?

| Answer | Frequency | Percentage |
|--|-----------|------------|
| Receiving loans is against religious belief | 50 | 48.5 |
| I would use loans to expand irrigation systems | 42 | 40.7 |
| I can not pay back the loan | 9 | 8.7 |
| Don't need a loan, I have sufficient financial resources | 2 | 1.9 |

Data was further content analyzed to evaluate farmers overall perception towards participatory irrigation management. Using 3-point Likert Scale, farmers were asked to respond to 12 statement concerning their level of agreement toward participatory irrigation management practices, As shown in Table 5, farmers were less inclined

to participate in irrigation management schemes launched by government officials.

Almost all farmers (99%) believed irrigation system management is the responsibility of government agencies.

Table 5. Farmers' perception toward participatory irrigation management.

| Answer | | agree | somewhat agree | disagree |
|---|-----------|-------|----------------|----------|
| Management of irrigation systems is governments' responsibility | Frequency | 102 | 1 | 0 |
| | Percent | 99 | 1 | 0 |
| Irrigation facilities belong to the government agency | Frequency | 100 | 1 | 2 |
| | Percent | 97 | 1 | 2 |
| User are able to manage irrigation systems | Frequency | 5 | 13 | 85 |
| | Percent | 4.8 | 12.6 | 82.5 |
| Efficiency of irrigation systems will increase if users take the responsibility | Frequency | 6 | 8 | 89 |
| | Percent | 5.8 | 7.7 | 86.4 |
| Government is doing a good job in managing irrigation facilities | Frequency | 26 | 2 | 75 |
| | Percent | 25.2 | 2 | 72.8 |
| There is problem with water distribution among users | Frequency | 95 | 2 | 6 |
| | Percent | 92.2 | 2 | 5.8 |
| Users should pay water fee | Frequency | 39 | 15 | 49 |
| | Percent | 37.8 | 14.5 | 47.5 |
| Users should maintain and operate irrigation systems | Frequency | 21 | 15 | 67 |
| | Percent | 20.3 | 14.6 | 65 |
| Users should repair irrigation systems | Frequency | 4 | 5 | 94 |
| | Percent | 4 | 4.8 | 91.2 |
| Users should take charge of water distribution | Frequency | 21 | 31 | 51 |
| | Percent | 20.3 | 30 | 49.5 |
| Users should take the responsibility of solving water problem themselves | Frequency | 56 | 22 | 25 |
| | Percent | 54.4 | 21.3 | 24.3 |
| Users should pay for the cost of irrigation water | Frequency | 3 | 3 | 97 |
| | Percent | 3 | 3 | 94 |

CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS:

Members of Sarabbas and Sefidbarg Water User Associations were not enthusiastic about participatory in irrigation system management promoted by government.

They believed these facilities belong to the government and they should take a passive role in managing such facilities.

One reason for current perception is that government have not yet provided an up-to-date infrastructure thus farmers feel threatened by worn out irrigation facilities. They feel these facilities would be expensive to maintain and that their resources are not sufficient to meet the cost of operating and maintaining these facilities. Furthermore, farmers were less interested

to work in groups. Based on the results of this qualitative study, it is recommended that government agency take a first step in turning over irrigation facilities that are sound and without any mis-function. It is further recommended that government officials select those

places with highly motivated farmers to participate in their irrigation schemes. More resourceful farmers are more inclined to participate in irrigation management. Therefore, government agencies should target more resourceful farmers if they are to enhance participatory irrigation management projects.

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