THE NECESSITY OF PARTICIPATORY MANAGEMENT IN WATER SECTOR IN IRAN

A.A. Karami[1], K. Mohammadi[2] and H.R. Najib[3]

ABSTRACT

During the past decades, most of the investment, construction and management of the water projects in Iran have been the responsibility of the government, and the private sector had little influence in this regard. This policy of the government has caused the water projects to become less successful and have low efficiency, despite the large amount of the investment. In order to overcome some of these problems, the government passed several laws to attract the participation of farmers in development and construction of irrigation and drainage networks. This movement was the beginning of the official participation of farmers in the water sector in Iran and it proved that despite the difficulties of implementation of the program, it was successful in overall. Therefore, it is necessary to develop a mechanism to have more involvement from the farmers in different levels of projects including decision making, design, construction, operation, and maintenance.

In order to achieve such objective, a proper structure and organization are needed in governmental agencies, investment institutes, and farmers associations. These components of the participatory management and responsibility should be well defined. Practical laws, methodologies, and instructions are necessary to achieve the objectives of the program. In this paper, the proposed structure of the farmers' participation in water sector is explained.

Key words: participatory management, farmers associations, irrigation management transfer, privatization.

INTRODUCTION

Rapid irrigation development has taken place throughout the 20th century, with increasing levels of public finance through the post-war period, aimed at the full

1- Director of the Farmers Participation in Irrigation development Plans, Ministry of Energy, Tehran, Iran.
2- Assistant Professor, Tarbiat Modarres University, P.O. Box 14115-336, Tehran, Iran, kouroshm@modares.ac.ir
3- Integrated Natural Resources Officer, FAO: Sub-Regional Office for North Africa, Tunis, Tunisia, reza.najib@fao.org

spectrum of gravity-supplied irrigation and groundwater exploitation. Despite the success of irrigation in supporting the Green Revolution, irrigation schemes have often under-performed in economic terms, and field research has highlighted substantial shortcomings in management (operation and maintenance), equity, cost-recovery and agricultural productivity. Reasons for this include:

- Unrealistic productivity projections at appraisal;
- Capital cost over-runs;
- Substandard construction or design;
- Poor system management and service provision;
- Poor understanding of farmer priorities and inadequate markets for produce.

Public investment in irrigation development tailed off from the 1980s as fiscal constraints set in and external funders became disillusioned with the economic performance of previous investments. This period has also seen a significant decline in the international prices of major irrigated crops such as rice and wheat, and diminishing marginal returns to farmers input use in intensively cultivated areas. This has contributed to reduced profitability and to the decline in external and domestic financing. Further, growing environmental concerns over the impacts and costs of large water development projects have stimulated more interest in the careful use of water than in simply increasing its supply (Turral, 1995).

Policy options in response to poor economic performance are summarized by Rosegrant and Binswanger (1994):

- Technological solutions, including rehabilitation, modernization and water conservation technologies;
- Reform of public management of irrigation systems;
- Communal water management through improved farmer participation;
- Establishment of tradable property rights in water and the development of markets in water rights.

An important and positive trend in recent years has been the increase in recognition of the importance of private sector participation in project execution and management. In the past few decades, governments have intensively involved and incurred heavy expenditure as direct assistance in the form of the creation and management of economic and social infrastructure such as irrigation systems with the aim of achieving income, employment and welfare objectives of rural communities and to enhance local food production (Turral, 1995).

Until the late 1800s, irrigation was developed by users at the village or community level using local resources (Peter, 2003). By the early 1900s irrigation came to be developed through large public agencies. The period 1950-70 saw the large-scale development of irrigation through public and donor funds. By the early 1970s it was apparent that irrigation systems were difficult to maintain due to inadequate funding of operation and maintenance (O&M), poor collection of service fees, deteriorating canals, drains and structures. They were open to rent seeking and were becoming less and less sustainable (Repetto, 1986). The period that followed (1970s and 80s) was a phase of irrigation

improvement wherein the emphasis was on rehabilitation and introduction of new technologies, management techniques, training, introduction of service fees and farmer participation. At this stage a number of irrigation specialists articulated the need for a new paradigm for irrigation development as they recognized that sustainable irrigation systems require active participation of the users in order to be properly operated and maintained (Coward and Levine, 1987). By the time Government recognized the need for user participation in O&M, they were confronted with large public irrigation organizations that saw the move towards users as a challenge to their authority and power (Peter, 2003).

Participation refers to a continuum of involvement in management decisions. One meaning of participatory irrigation management (PIM) may be that the irrigation users have total control and responsibility over the operations and maintenance of part or all of the irrigation system. Another meaning of PIM may be that a farmer council plays an advisory role, with real power remaining in the hands of the irrigation agency (World Bank, 2003). When farmers are directly involved in the design process, whether for new systems or rehabilitation of old ones, they will provide useful design input and they will come away with an understanding of the design logic of the system they will be managing. During construction, farmer input has the functions of quality control (ensuring design standards are met), cost savings (through guarding against needless spending, and substituting some costs with farmers' own labor), and construction knowledge. Knowing how the system is constructed will help in repairs later on.

Management approaches in irrigation generally fall into three categories: (1) public sector management, (2) private sector management, and (3) users' organizations (World Bank, 2003). The strategies that countries have taken in implementing PIM policies may be characterized according to three basic approaches: (1) the rapid "big-bang" approach of Mexico where water users are strongly pressured to establish an organization to replace the government, (2) the "bottom-up" slow approach of the Philippines with a strong focus on organizing and consensus building, and (3) a hybrid approach which adopts a moderate pace, such as that adopted by Turkey.

The opportunities for participation are different in each phase of the project cycle. Much of the emphasis on PIM has focused on participation in O&M, and particularly in the recovery of O&M service fees on behalf of the irrigation agency. While this aspect of participation is of great practical importance, there are many ways other aspects of irrigation management where participation can be incorporated. These include: (1) participation in irrigation project identification, planning, and design; (2) participation in system layout and construction; and (3) participation in project monitoring and evaluation.

In addition to required changes in current policies, agency managers have to face the question of institutional capacity -- trained staff, budget, managerial resources -- to undertake a large scale expanded program that would cover a larger geographical area. Some time may have to be initially spent during the expansion phase in strengthening institutional capacity to manage the effort.

An important and positive trend in recent years has been the increase in recognition of the importance of private sector participation in project execution. In recent years, there has been a large increase in private sector participation in the provision of

water projects. Between 1990 and 1997, the cumulative new private sector capital expenditures in water supply and sanitation projects in developing countries was $25 billion, compared with $297 million in the period 1984-1990 (Franceys, 1997). The overall level of investment in water-related infrastructure in developing countries is estimated to be of the order of $65 billion annually with respective shares about $15 billion for hydro, $25 billion for water and sanitation and $25 billion for irrigation and drainage (Briscoe, 1999).

ECLAC (1995, 1998) compared the successes and failures in promoting privatization approaches in Mexico, Venezuela, and Chile and concluded that the failures in Venezuela were due to a lack of system, which obstructed the development of proper policies (Contreras, 2000). In contrast, the privatization was successful in Chile due to the establishment of strict standards for financial reporting, similar to those of private companies, and the establishment of rigorous independent regulatory authority. Mexico has worked hard to institute a transition from centralized ownership and management of the irrigation systems to a policy of co-responsibility between the government and the irrigation water users (Contreras, 2000).

In order to use the optimum value of water resources and consequently increase the agricultural production and level of farmers life, the government of Iran believes that it is necessary to transfer the management of water sector to the private firms and groups and it can be in all levels including planning, construction, operation and maintenance.

In this paper, the proposed processes have been introduced and duties and responsibilities of each section have been suggested. It is divided into three sections as follows:

- The government responsibilities for associations, cooperative organizations, and farmers' groups;
- The groups and associations responsibilities;
- Banks and other financial institutes for providing the funds and investment facilities.

GOVERNMENT RESPONSIBILITIES

It is necessary that the government prepares the required policies for farmers' participations in water sector to transfer part or all the government's responsibilities in different levels. Although during the last two development programs some offices have been established in Ministries of Energy and Agricultural Jihad, but they do not have enough responsibility to answer the needs of this important issue. The following changes and improvements can be suggested for better deal with this issue from the government side:

DEVELOPING THE NECESSARY STRUCTURE FOR MANAGING THE TRANSFER PROCESS

In order to manage the transfer process of water management in different levels, it is necessary to have a proper organization within the government system with enough authority to enforce policies. The existing offices in Ministry of Energy and

Agricultural Jihad are not fully capable and authorized to make the necessary actions and answer today's need for this important issue.

Due to the very "public" nature of the sector, public authorities continue to have an important role to play. Rather than being a manager and provider of services, the government must serve as a regulator and a guarantor of a certain level and quality of provision. The objectives may remain the same, but the instruments have changed. In this respect, private sector may actually place more rather than less demand on effective and capable public authorities. Intervention through incentives requires more skill than intervention through investment. New regulatory capacity is required to deal with these new roles.

FORMING FARMERS' GROUPS AND ASSOCIATIONS

Transferring the water management requires a proper farmers' group. Therefore, helping farmers to develop and form their associations or cooperatives is one of the first issues that the government should consider. In this regard, Ministries of Energy, Agricultural Jihad, Cooperative (Taavon), and NGOs should have a close cooperation and develop a model and algorithm considering social, cultural and economical aspects of farmers. During the second and third development plan of the country, there have been tremendous progresses in forming the farmers' groups for participating in construction of irrigation networks. These existing groups can play an important role in transferring the irrigation services to farmers especially in operation and maintenance.

REFORMING THE POLICIES AND RULES

One of the intensives for participation of farmers' groups in water management is to transfer the ownership of the infrastructures to those groups. In some countries, such as Mexico, this transfer of ownership has been happened.

In 1992, Mexico adopted a new National Water Law (Ley de Aguas Nacionales) that introduced sweeping changes to federal water management and policy. For decades prior to the reforms, Mexican water management, agricultural planning, rural credit and urban water services had been centrally controlled by the federal government. The new law instituted the following specific modifications to national water policy:

- decentralization of management of irrigation districts from the federal government to water users themselves, via the process of "transference";
- decentralization of urban water services from federal to state or municipal control;
- removal of irrigation system subsidies equivalent to 60 to 80 % of total costs prior to the reforms;
- full-cost recovery pricing of water;
- establishment of formal markets to trade water rights;
- and introduced mechanisms to allow privatization of service provision in municipal areas and infrastructure projects in rural areas.

Beginning in 1992, Mexico initiated a massive decentralization process referred to as "transference" or "la transferencia" in its 81 irrigation districts, during which it

transferred management authority from the federal government to a network of district organizations. The World Bank pronounced Mexico's transference program a success and offers it as a model for other developing countries in terms of the rapidity of the transference process itself (79 districts in less than 10 years) and due to the gains in efficiency of water use that have resulted (Easter, 1998). Based on Mexico's experience, the Bank decided to reverse its former strategy of "rehabilitate first, then transfer" to a new strategy of "transfer first, then rehabilitate," founded upon the belief that after transference, Mexican water users have been more capable of deciding democratically how to utilize scarce financial resources to modernize the water system in the most beneficial ways (Easter, 1998).

GUIDELINES AND METHODOLOGIES FOR FARMERS' PARTICIPATION

According to Note 76 from second development plan and Part A of Code 106 of third development plan and Part T of Code 17 of fourth development plan and other codes and regulations of the government, Ministries of Energy and Agricultural Jihad were appointed to provide low interest grants and funds for farmers to construct irrigation and drainage networks. Therefore, these ministries should consider the following actions in order to make the above mentioned regulations and laws practical:

- Institutional reform in different levels of the government, forming new positions and hiring professional staff;
- Introducing profitable projects to the farmers;
- Introducing the investors to the banks for using their capital and investing in the projects;
- Forming farmers' groups and associations to mange the project constructions and operation;
- Supervision of tenders and contract awards between farmers and contractors;
- Supervision of the construction process and handing over the constructed project to the farmers;
- Evaluation of the project performance during the operation.

CONTRACT BETWEEN GOVERNMENTAL AGENCIES AND FARMERS' ASSOCIATIONS AND GROUPS

In order to protect the investment of the government used in transferred irrigation, it is recommended to sign the contract between farmers' groups and government and consider the following terms and conditions:

- Ministry of Energy should provide the following services:
  - Completion and equipping the irrigation networks to make them ready for transferring to the farmers;
  - Supply, regulate and control the water inflow to the irrigation networks;
  - Evaluation of operation and maintenance performance of the cooperatives or associations;

  - Continuous support of farmers' groups financially, technically, politically, etc.
- Ministry of Agricultural Jihad's services to the farmers
  - Land leveling, integrating and rehabilitation of farms;
  - Transferring agricultural services to the farmers' cooperatives;
  - Support in building silos, fridges and food processing industries;
  - Insuring agricultural products;
  - Helping farmers in marketing and selling their products;
  - Continuous support of farmers' groups financially, technically, politically, etc;
  - Resolving disputes between farmers.
- Ministry of Cooperatives
  - Making new policies, regulations and constitutions for cooperatives;
  - Fund raising from public and governmental sectors for cooperatives;
  - Educational, cultural, technical and scientific helps to cooperatives;
  - Organizing and managing the technical, financial and administrative helps from other organizations;
  - Providing necessary facilities to develop the cooperative activities;
  - Providing facilities to the farmers to be able to export their products;
  - Providing conditions for cooperatives to invest their capital;
  - Developing the necessary guidelines and regulation for banks to grant funds to the cooperatives.

FARMERS TRAINING

Since in the proposed model, farmers will be responsible for transfer and distribution of the irrigation water, it is necessary to train those who are responsible for this job. Therefore, the consultant companies that are designing the project should consider the simple methods for operation and maintenance of the networks and train farmers during the construction phase. In addition, after handing over the management of the irrigation network to the farmers, consultant should supervise the performance of the farmers to make sure that the network is operated at the optimum level.

RESPONSIBILITIES OF FARMERS' GROUPS

Farmers' groups in any forms such as cooperatives, association, etc, should fully understand their responsibilities for their works and against the government. These responsibilities can be summarized as follows:

- accepting the management of the irrigation and drainage network
- exchanging the agreement between government and farmers' group including:
  - Using technical staff for operation and maintenance of the network

- Developing the suitable organization chart to manage the system
- Preparing the staff work plan
- Staff training
- Supervising the staff
- Budget planning and estimating costs and incomes
- Evaluating technical and financial performances
- Conducting safety procedures and guarding irrigation infrastructures
- Cooperation with the governmental supervision institutes
- Providing necessary data and information to the supervision institutes
- Complying with the rule and guidelines according to the contract

ROLES OF BANKS AND FINANCIAL INSTITUTES

Banks and financial institutes have an important role in this procedure. They usually provide most of the necessary funds for project construction or rehabilitation. Since farmers are not able to invest all the money for the project and there are a group of farmers who benefit from the project, it is difficult to find a single solution for the problem of giving loan to the farmers for this type of projects. Almost 10 years experiences of the Agricultural Bank in this subject show that the following actions are necessary to be taken by financial institutes:

- Guidelines for contract between governmental agencies and financial institutes
- Reviewing the proposed plans and project considering financial and technical aspects
- Developing easy procedures for giving loans to the selected projects
- Control and monitoring the disbursement of the funds
- Regulation on civil partnership and loan repayment procedure

CONCLUDING REMARKS

With external assistance and internal commitment, the water sector has made great progress over the last decade in Iran. However, there are doubts over the institutional capacity and overwhelmingly public administration at present, to meet this change. Transferring the management of the irrigation to farmers will have many advantages in saving the water and better operation and maintenance of the irrigation systems. It is necessary that the government takes the primary steps in this reform. On the other hand, as farmers get empowered they clearly occupy some political space as seen in other countries with similar conditions. Therefore, it is necessary to prepare a clear policy and guidelines to implement the farmers' rights and prevent conflict between different stakeholders.

REFERENCES

1- Briscoe, J. 1999. The financing of hydropower, irrigation and water supply infrastructure in developing countries, *Water Resources Development*, 15(4), 459-491.

2- Contreras, N. 2000. *Efficient management of water resources: An analysis of grey literature for the new millennium*. Third World Centre for Water Management, Mexico, 320p.

3- Coward, E.W and G. Levine. 1987. Studies of Farmer-Managed Irrigation Systems: Ten Years of Cumulative Knowledge and Changing Research Priorities. In Public Interventions in Farmer-Managed Irrigation Systems. Digana Village via Kandy, Sri Lanka: IIMI, pp. 1-31.

4- Easter, W., 1998. Irrigation Improvement Strategy Review: A Review of Bankwide Experience based on Selected 'New Style' Projects. Washington, D.C.: The World Bank, pp. 1-25.

5- Economic Commission for Latin America and the Caribbean 1995. *Private participation in the provision of water services. Alternative means for private participation in the provision of water service*, vol. 1: Economic Commission for Latin America and the Caribbean.

6- Economic Commission for Latin America and the Caribbean 1998. *Report of the second workshop on private participation in water supply and sanitation utilities in the Americas.* Economic Commission for Latin America and the Caribbean, San Jose, Costa Rica, Consultanse February 3-6.

7- Franceys, R. 1997. Private sector participation in the water and sanitation sector, UK Department for International Development Occasional Paper No. 3, DfID, London, UK.

8- Peter J.R. 2003. Capacity building for PIM – The case of Andhra Pradesh. FAO/ICID International Workshop on capacity Building for Irrigation and Drainage, Montpellier, France.

9- Repetto, R. 1986. Skimming the water: Rent-seeking and the performance of public irrigation systems. Research Report No. 4. Washington, DC: World Resources Institute.

10- Rosegrant, M. and H. Binswanger. 1994. Markets in trade-able water rights: Potential for efficiency gains in developing country. Water Resource Allocation. World Development Vol.22 (11): 1613-1625.

11- Turral, H. 1995. Devolution of management in public irrigation systems - cost-shedding, empowerment and performance - a review. ODI Working Paper 80.

12- World Bank. 2003. Electronic Learning Guidebook for Participatory Irrigation Management, World Bank Institute, Available online: http://www.worldbank.org/wbi/pimelg/