

NEED FOR PARTICIPATORY IRRIGATION MANAGEMENT

Zafar Iqbal Mirza⁴

BACKGROUND

Agriculture is the major sector of Pakistan's economy. The fertile land resources of the Indus Basin System coupled with the water of the River Indus and its tributaries provided ideal conditions for the development of irrigated agriculture in the country. Pakistan has an enormous network of irrigation canals, which link with the Indus River system to irrigate about 42 million acres of land.

The system comprises of 3 major storage reservoirs, 19 barrages and 15 inter-river (link) canals. The system serves 45 canal commands and delivers water to about 90,000 villages through a canal system of about 30,000 miles in total length. There are nearly 4000 distributaries providing water to fields through a network of about one hundred thousand watercourses. Each watercourse is designed to carry 1 to 3 cusecs of water to irrigate about 300 to 400 acres of land. It is the World's largest contiguous irrigation system.

The land and water resources of the Indus Basin have the potential of increasing crop yields substantially. At present, per acre yields of various crops are far less than the international standards despite a very favorable combination of climate, temperature, soil and water resources. The results of many studies indicate a considerable amount of water wastage from the irrigation system. According to one estimate, against the 192 Million-Acre Feet (MAF) of water available in the rivers and from the groundwater resource, hardly 54 MAF is available for crop consumptive use requirements (Figure 1). The low efficiency of the irrigation system not only causes water shortage especially at tail reaches, but also gives rise to irrigation-induced environmental problems such as water-logging and salinity, whereby millions of acres of productive lands become agriculturally unproductive.

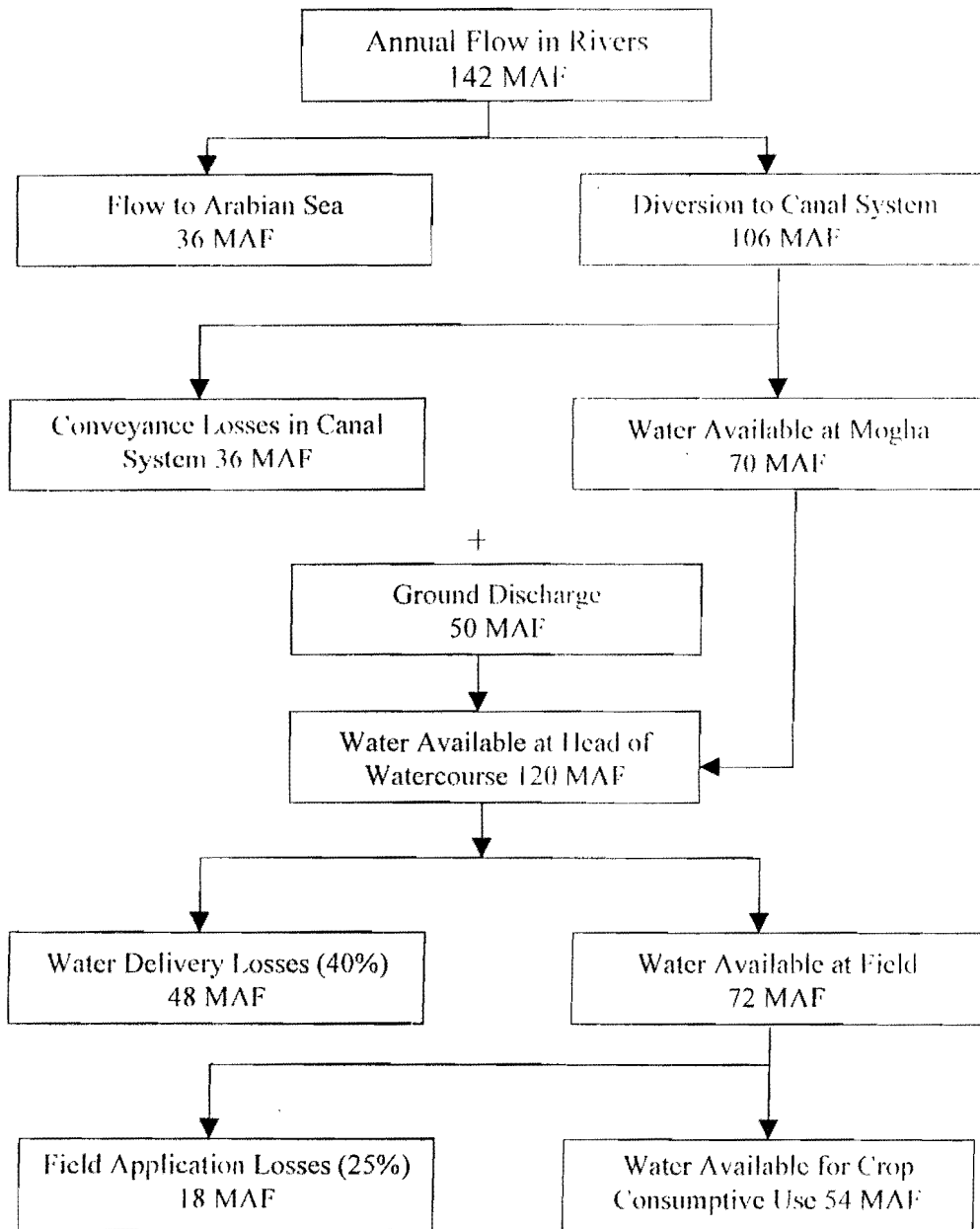
RECENT DEVELOPMENTS

In recent years however, there has been a growing awareness among Pakistan policy makers and academics regarding the necessity for organizing farmers at the level of minors and distributaries, as well as watercourses, so that farmers will have some control over the distribution of water to each watercourse and farm plot. Farmer's control over water is expected to improve tertiary level water management by way of increasing the compatibility between water deliveries and crop water requirements throughout the cropping season, both in terms of quantity, as well as timeliness.

Keeping in view the necessity for sustainable irrigated agriculture, there is now a felt need to try out some pilot projects on participatory irrigation management in selected canal command areas in all four provinces of Pakistan. The main aim to test the reform on pilot scale is to check its validity in the context of Pakistan's large canal system before its replication on wider scale.

⁴ Irrigation Agronomist, International Water Management Institute (IWMI) Lahore, Pakistan.

PAKISTAN IRRIGATION SYSTEM AN OVERVIEW



MAIN PROBLEMS OF EXISTING IRRIGATION SYSTEM

- irrigation system is not performing well due to poor operation and maintenance;
- frequent breaches due to weak banks;
- inequitable water distribution;
- unreliable water supply;
- increased cases of water theft;
- water disputes;
- delayed justice;
- financial mismanagement;
- political interference;
- more O&M expenditure as compared to income;
- poor accountability;
- lack of users participation in decision making.

OBJECTIVES OF PIM

The main objective of the institutional reforms in the irrigation sector of Pakistan is to shift the responsibility and authority for the management of irrigation system at the secondary and tertiary level from the government to non-government entities i.e. Farmers Organizations (FOs). Also to involve users in decision making at higher level of the system.

REASONS FOR INSTITUTIONAL REFORMS

- poor performance of government agency managed irrigation system;
- the failure of governments to finance, or recover from farmers, the cost of irrigation management;
- to reduce burden from government and reallocate revenues to improve O&M;
- enhanced trust in the capacity of water users to participate in management of the irrigation system.

IRRIGATION MANAGEMENT TRANSFER: EXPERIENCE FROM OTHER COUNTRIES

Irrigation management transfer has been practiced in many countries across the world such as USA, Mexico, Turkey, Indonesia, India, Sri Lanka, Nepal and Colombia etc. In some of these and other countries, reforms have successfully accomplished while in others; IMT has failed completely or partially.

RESULTS FROM SUCCESSFUL IMT

- better and more equitable water distribution
- better reliability in water supplies
- improved operation and maintenance of the system
- self financing

REASONS FOR PARTIAL SUCCESS OR COMPLETE FAILURE

- half-hearted approach (lack of will)
- lack of enabling laws
- lack of suitable staff for social mobilization
- poor coordination among different actors
- more focus on the engineering aspects than on formation and training of WUAs.

RATIONALE FOR PROMOTION OF USER'S PARTICIPATION

The gradual deterioration of irrigation systems throughout the world has exposed serious institutional deficiencies, and resulting government failure to deliver the services in most water resources systems. In most developing countries financial crisis and inability of government to deliver services has become visible. This includes inadequate motivation and poor accountability process of agency staff, high level political interference and rent seeking, and inadequate concern for needs of users. On the other hand, without reliable and equitable supply of water, users are not ready to share the ever-increasing costs of Operation and Maintenance (O&M). The options left behind are either:

- 1) leave the system as such (agency managed) and bear the cost (declining or stagnant agricultural productivity, disastrous in the long run), or
- 2) government improves and manages the system efficiently, or
- 3) involve the beneficiaries (farmers) to share some of the responsibilities of O&M for sustained and improved agricultural production.

The first option is in practice in the country and continuation of that could lead to poverty and threat to food security in the country. The second option doesn't seem to be cost effective and also it has not worked in the past. The only option left is the involvement of water users to share some of the responsibilities of operation and maintenance for sustainable and environmentally sound irrigated agriculture. The experience from other countries reveals that it worked well in many countries and that seems the only way to improve the system efficiently and cost-effectively.

WHETHER PAKISTANI FARMERS CAN DO THAT?

The main question posed by the policy makers, experts and the concerned government agencies staff is whether our farmers can do that. Similarly some segments of farmers also worried about their capacity to handle the O&M activities. However, past experience of users participation in Warabandi, Watercourse improvement under On-farm Water Management program and providing help to the Irrigation agency staff in annual desilting of minors and distributaries shows farmers ability to take-over the responsibilities of irrigation system management.

Last three-four year experience of Farmers' Organizations in Pakistan also show that farmers can get organized, they are willing to take-over responsibilities at secondary level of the system and they can perform well in the operation and maintenance of the system in a cost-effective way. Nevertheless, there are few pre-requisites for an effective, socially, technically and financially viable Farmers Organization.



With every dawn about 11 thousand additional persons demand for food.

KEY FOR SUCCESSFUL IMT

- clearly defined water rights
- high level support from the community/water users
- political will
- government support
- enabling rules and effective implementation
- well defined roles and responsibilities of all stakeholders
- transparency in organizational and financial matters
- effective accountability mechanism
- a capable, efficient management and staff; and
- effective support services after turn-over.