

# Management of Irrigation Systems: From Government to Water User Associations



Approximately 40 percent of the world's food and 60 percent of its grain are produced under irrigation. Between 1900 and 1950, the total area under irrigation worldwide nearly doubled, from 48 million hectares to 94 million hectares. By 2000, it had reached 240 million hectares. The expansion entailed expensive infrastructure and strained governments' capacity to afford and manage these systems.

**SOURCE:**

Vermillion, D.I. 2004. *Irrigation, Collective Action, and Property Rights*. 2020 Focus Brief 11, International Food Policy Research Institute, Washington, D.C.

During the past two decades, there has been a shift of direct management of irrigation systems to regulation of the water sector. This management mechanism includes provision of support services and capacity building among water user associations and irrigation service providers. More than 40 developing countries in Africa, Latin America, and the Middle East have adopted programs to transfer the management of irrigation systems from government agencies to water user associations.

Governments have realized that enlisting water user participation helps in meeting the costs of operating, maintaining, rehabilitating, and upgrading irrigation systems.

## State-Owned Versus Traditional Irrigation Systems

Traditional irrigation systems are developed and managed by local farmer groups. In many cases, such systems have been operated, maintained, and improved by local people for decades and even centuries. Research shows that these systems last because they are founded on locally-derived principles of water and land rights, rules, and obligations.

State-sponsored irrigation systems, on the other hand, are normally established without consulting the water users or making them participate in the decision-making process. Water users, in turn, do not have a sense of ownership over or responsibility for these systems. For this reason, farmers are unwilling to pay irrigation service fees. When governments are unable to mobilize adequate resources to finance irrigation, the condition of the infrastructure and quality of water services decline further. In addition, traditions sometimes break down because of state-sponsored development.

## Water Users' Property Rights

Sometimes, irrigation management transfer programs overlook transferring property rights, authority, and strategic planning to change the roles and modalities of government.

The most important rights of water users are the following:

- the right to use, both on individual farms and for the irrigation system as a whole, a certain amount or share of water of an acceptable quality;
- the right to cultivate land and what crops to plant, with collective protection against conversion of irrigated land to other uses;
- the right to use, repair, and improve irrigation infrastructure;
- the right to determine what irrigation services will be provided and by whom;
- the right to adopt rules, irrigation service plans, and budgets;
- the right to establish, collect, and use an irrigation service fee (without having to transmit funds to the government);
- the right to assign penalties, settle disputes, and obtain legal support;
- the right to give consent to or refuse external assistance; and
- the right to maintain representation in a higher level public council at the river basin or district level.



**Sustaining irrigation systems. Water users help in maintaining, upgrading, repairing, and sustaining irrigation systems.**

## Government and Water Users Partnership

For irrigation systems to be productive and sustainable, water users must play a larger role in their governance, financing, and management.

Governments should create a new partnership with water users to empower water user associations with property rights and governing authority, ensure that governments provide support services and regulate the sector at the macro level, and establish cost sharing for irrigation investment.

From international experience, irrigation sector reform programs should establish both a policy working group and a national secretariat to guide and coordinate the planning and implementation of the reform process. The process should include:

- strategic, participatory planning;
- research and stakeholder consultations;
- mobilization of political support;
- design and adoption of an appropriate policy, legal, institutional, and regulatory framework;
- strategy to coordinate lending and technical assistance;
- articulating needs for and sources of support services;
- public awareness campaigns; and
- monitoring, evaluations, and course corrections.



**Water users as decision makers. State-sponsored irrigation systems should consult water users to engender a sense of ownership and responsibility for these systems.**

The partnership between government and water users should be redefined to involve the farmers in managing irrigation systems. Investing in organizing farmers to manage irrigation systems is as important as investing in irrigation infrastructure.

### **Suggested Readings**

Ostrom, E. 1992. *Crafting Institutions for Self-Governing Irrigation Systems*. San Francisco: Institute for Contemporary Studies Press.

Subramanian, A., N.V. Jagannathan and R. Meinzen-Dick (eds). 1997. *User Organizations for Sustainable Water Services*. World Bank Technical Paper No. 354. Washington, D.C.: World Bank.

Vermillion, D. L., and J.A. Sagardoy. 1999. *Transfer of Irrigation Management Services: Guidelines*. FAO Irrigation and Drainage Paper No. 48. Rome: Food and Agriculture Organization of the United Nations.

#### **The Case of South Sumatra**

In South Sumatra, Indonesia, the government, with no local participation from the local community, installed a water division box on a site where farmers had previously used a traditional water-proportioning weir. After construction of the new division box, the farmers promptly reinstalled their proportioning weir just below it, in order to maintain traditional water rights. This case illustrates the importance of designing property rights, local institutions, and infrastructure in an integrated way.