

Participatory Irrigation Management Approach for Sustaining Water Resources

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Introduction

Water is essential to sustain human life. It plays a vital role in many human activities, including industrial production, agriculture, energy, sanitation, and transportation, in addition to sustaining ecosystems that provide valuable services to both environment and human. There can be variation in water availability in respect to time and space and this cause difficulty in managing the water resources. Global changes like increase in population, industrialisation, land use and change in climate have put enormous pressure on availability of fresh water to meet ever increasing population demands for various purposes. Now we perusing toward sustainability. The word sustainability can mean different things to different people, it always includes a consideration of the future. The ability of future generations to meet their needs. Sustaining water resources can be ensured only through integrated approach with cooperation of various departments and stakeholders.

The UNDP (2012) indicates that sustainable water management can only be achieved through effective water governance. Water governance refers to the range of political, social, economic, and administrative systems that develop and manage water resources and water service delivery at different levels of society. Participatory water governance could help people to articulate their priorities, exercise their legal rights, meet their needs, and mediate their differences. Moreover, new forms of governance that include more meaningful public participation encourage individual and social learning that could help in the transformation to a more sustainable society. Participatory irrigation management (PIM) is a governance approach that can contribute to sustainable water management through improving water allocation and the effective use of water within agricultural systems. PIM refers to the participation of water users in all phases of irrigation management, such as the planning, operation, maintenance, monitoring, and system evaluation (World Bank, 1998). It is suggested that the common problems of irrigation, including inequitable water distribution,



poor irrigation system maintenance, inadequate water availability, and lack of incentives for saving water, can be considered through a PIM approach.

IWRM- Basic Definition

Integrated Water Resources Management (or IWRM) is “a process that promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”

A more functional definition is used by the United States Agency for International Development (USAID): “IWRM is a participatory planning and implementation process, based on sound science, which brings together stakeholders to determine how to meet society’s long-term needs for water and coastal resources while maintaining essential ecological services and economic benefits.”

The above reference continues to say that “IWRM helps to protect the world’s environment, foster economic growth and sustainable agricultural development, promote democratic participation in governance, and improve human health.”

From these definitions, a few key elements (note the bold key words) can be distilled: -

- IWRM is a coordinated process that brings together stakeholders.
- It focuses on both economic and social welfare and equity as well as protecting ecosystems.
- It uses scientific data /tools to provide sound base for judgment.
- It emphasizes proper governance involving democratic participation.

The beginning of present IWRM paradigm can be traced to few centuries back. Spain is the first country to start to cooperate water resources at basin level. The widespread and systematic application of IWRM principle with more comprehensive approach is a recent phenomenon. The Dublin Conference on water and environment of 1992 and UN Conference Environment and Development of 1992 held at Rio de Janeiro (Brazil) with put more comprehensive water resources management approaches for sustainable development.

Principles of IWRM

At the International Conference on Water and the Environment (ICWE), held in Dublin, Ireland in 1992, over 500 participants representing 100 countries and 80 international and

nongovernmental organizations, the following principles were recommended to guide global water management and development efforts:

1. **“Ecological”**: Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
2. **“Institutional”**: Water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels.
3. **“Gender”**: Women play a central part in the provision, management, and safeguarding of water.
4. **“Instrument”**: Water has an economic value in all its competing uses and should be recognized as an economic good.

Later that same year, the Dublin principles were incorporated into the Agenda 21 recommendations put forth at the UN Conference on Environment and Development (UNCED) in Rio de Janeiro. Since then, these principles have strongly influenced the development of IWRM. The four principles are discussed below, together with how they guide general IWRM approaches:

- **Principle 1 - “Ecological”**: It calls for a holistic approach to WRM, “linking social and economic development with protection of natural systems” (ICWE 1992). Recognizing the catchment area or river basin as the most appropriate unit for WRM, Principle 1 calls for coordination across the range of human activities that use and affect water in a given river basin. IWRM approaches incorporate this principle into its emphasis on integration between all concerned water sectors.
- **Principle 2 “Institutional”**: This participatory approach is to raise awareness of water issues among policy-makers and the general public. It emphasizes subsidiarity - management decisions should be taken at the lowest appropriate level, with central government retaining regulatory and support roles. It advocates increased accountability of management institutions and full consultation and involvement of users in the planning and implementation of water projects. The capacity of certain disadvantaged groups may need to be enhanced through training and targeted pro-poor development policies for full participation. IWRM applies this principle through its concepts of decentralization and participation, discussed below.

- **Principle 3 “Gender”:** The approach emphasizes the important synergy that exists between gender equity and sustainable water management. Worldwide, women play a key role in the collection of water for domestic – and often agricultural – use, but in many societies, women are excluded from water management decisions. IWRM includes an emphasis on empowering women in its focus on participatory management and capacity building
- **Principle 4 “Economic”:** Known as the “instrument principle”, the approach emphasizes the importance of economic tools in helping achieve efficient and equitable use of water resources. The human right to access clean water and sanitation at affordable prices must be recognized, but the scarcity of water demands that economic perspectives should not be ignored. In conditions where water is especially limiting, where supply augmentation is not a feasible option, economic tools should play a larger role in determining how limited water resources should be distributed efficiently and equitably. Managing water as an economic good is also a key to achieving financial sustainability of water service provision, by making sure that water is priced at levels that ensure full cost recovery. IWRM emphasizes on economic and financial sustainability.

Why IWRM?

Water is vital for human survival, health and dignity and a fundamental resource for human development. The world’s freshwater resources are under increasing pressure yet many still lack access to adequate water supply for basic needs. Growth in population, increased economic activity and improved standards of living lead to increased competition for the limited fresh water resources. Here are a few reasons why many people argue that the world faces impending water crises:

1. Water resources are increasingly under pressure from population growth, economic activity and intensifying competition for the water among users.
2. Water withdrawals have increased more than twice as fast as population growth and currently one third of the world’s population live in countries that experience medium to high water stress.
3. Pollution is further enhancing water scarcity by reducing water usability downstream.



4. Shortcomings in the management of water, a focus on developing new sources rather than managing existing ones better and top-down sector approaches to water management result in uncoordinated development and management of the environment.
5. Current concerns about climate variability and climate change demand improved management of water resources to cope with more intense floods and droughts.

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