

INDIAN INSTITUTE OF HEALTH MANAGEMENT RESEARCH, JAIPUR
SCHOOL OF DEVELOPMENT STUDIES

REPORT ON
ONLINE COURSE

“WATER RESOURCE MANGEMENT AND POLICY”

Report by:

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Introduction

Water management today is faced with new challenges such as climate change or the effects of human activity. Public and private stakeholders who are active in this field must develop new ways to better manage the water cycle "as a whole". Water resource management includes consideration of all of the above disciplines of hydrology. Water supplies are allocated and diverted to a range of agricultural, municipal, industrial, hydroelectrical, and ecological needs. Some of these water uses are consumptive, removing water from the system (e.g., crop irrigation). Other types of water use return the water to a river, lake, or to the ground, but the water often requires treatment to restore it to a natural state; sometimes this is not possible (e.g., industrial tailings ponds). Water resource management is of paramount importance in agricultural development. Sustained socioeconomic development in countries with irrigated agriculture could be limited by water availability and deterioration in water quality. Consequently, any effort made to improve water use in irrigation practices will have a marked effect on sustainable agriculture and on conservation of soil and water resources. Problems associated with irrigated agriculture have been attributed to poor water management due to lack of knowledge of soil–plant–atmosphere relations, inadequate form of water application, hydro chemical relations triggered by irrigation, and soil's microbiological surroundings.

Traditionally water resources management aimed to continually improve the development and utilization of water resources to meet increasing socioeconomic water demand. Future water resources management will aim to coordinate the three-way relationship among the recycling ability of the water resources system, socioeconomic water demand, and sound operation of the eco-environmental system. This will be accomplished through the social management of those who need water, object-oriented water allocation management, and whole-process management of the social water cycle. In terms of maintaining the stability of the water resources system itself, it gives water a bigger role balancing ecological, environmental, social, and economic services.

The water resource management is a challenge for agriculture and other daily needs, globally. Water resources management includes management at two distinct levels. Management at the first level refers to the actual tasks and central objectives of the water manager. This includes all activities directly aimed at the sustainable use of water, the provision of clean drinking water to all, the allocation of water to different sectors of society, the provision of safety against flooding, etc. Management at the second level refers to the management of the management organization and process itself. It is supportive to the actual tasks of the water manager. Management at the first level is also called external management, while management at the second level is referred to as internal management. Important questions for internal management are: what exactly are the objectives of management; what institutional structure can best serve the process of attaining these objectives, and how can this institutional structure be operational in an efficient and effective way?

Objectives of the course

The objective of this MOOC is to develop an understanding of the problems related to water management. Firstly, this course will define a resource and, more specifically, the resource of water. It will look at how water is used, and the activities associated with it as well as any potential conflicts. The course will look at water management in detail through the analysis of the different types of rights and obligations associated with, for example, the development of a multi-sectorial regulation system or a watershed management approach. By the end of this course, we came to know:

- 1) Identify the main issues and strategies linked to water resource management.
- 2) Acquire the key reading material needed to understand the many variables (environmental, institutional, and political) which affect water and which, in terms of management, may require adjustment.

Course Contents

1. From Resource Definition to the Ideals of Community Management
2. The Rules of the Resource, their Uses, and their Circumvention
3. From Integrated Water Resource Management to the Water-Food-Energy and Ecosystem Nexus
4. Integrated Watershed Management (IWM)
5. Water as a Source of Conflict and Cooperation

Learning Methodology

The overall online course “Water resource management and policy” is a collaboration of:

- Quiz
- Reading material
- Lecture videos
- Discussion prompt-platforms

The discussion prompt platform is an opportunity to reflect the understanding of the individuals. However, the learning was all through these prospects and discussion practice on the rostrum.

Key Learnings

In this first module, we understood definition of the concept of a resource. This helped us to understand the various uses and demands that are placed on water. Next, we addressed the issues linked to the management of a common good such as water. Here, we drew on the work of Elinor Ostrom. We examined several examples of how the commodity is managed: by the state, by industry or by the community. Two cases studies of community water management in Latin America were presented.

Businesses that manage water are guided by property law and public policy designed to define and coordinate all the demands on the resource. This second module aimed for better understanding the complexity of these two bodies of law through the framework of the Institutional Resource Regime (IRR). This framework is presented and then applied to two case studies (Swiss and European) to understand the rules governing water management in these territories. Finally, we went beyond this framework to address the implementation of these rules by looking at examples of how the law is applied and examples of localised regulation.

Having discussed the rules governing water management and their implementation, this third module deals with the issues associated inter-sectorial water resources. It focused on two existing concepts.

Firstly, we looked at the Integrated Water Resources Management (IWRM) focusing on the coordinated management of water and any associated resources.

Secondly, we looked at the approach known as the Nexus Water-Energy-Food and Ecosystems. This approach was examined in light of the water users but also how they interact with other sectors. The Mekong River and the Columbia River (USA) are used as case studies to bring to life the difficulties of reconciling different uses of a river, such as hydropower, food security and the protection of ecosystems.

In this module, we further examined water management but this time we looked specifically at how watersheds are managed. We saw how stakeholders in Switzerland, in Europe (with the case of the Rhine) and internationally have promoted this concept as a reference for water management. These case studies allowed us to identify the benefits and limitations (both practical and institutional) that are presented by the Integrated Watershed Management approach.