

IWRM and the environment: A view on their interaction and examples where IWRM led to better environmental management in developing countries[#]

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Abstract

This paper investigates the interaction between water resources management and the environment. It argues that an integrated, holistic approach to water management is beneficial for the environment but also that environmental concerns are not to be ignored for integrated water management to be effective. To this purpose the paper introduces the interactions between different water uses and why it is important to address these interactions for sustainable water resources management. It explains how the environment is being affected by the use of water by other sectors, and the benefits and implications of an integrated management system for the environment. Illustrated by several practical cases in Asia, Southern Africa and small island developing states, the paper makes a strong case for IWRM to be an effective approach for sustainable management at river basin level. It also demonstrates that stakeholder engagement from the start, and the process being driven by local interests and addressing real needs are elements of IWRM without which it will not work. The paper argues that addressing environmental is essential for sustainable use of water resources, and that strong political support and institutional backing is required for IWRM to be successful.

Keywords: integrated water resources management, environment, river basins, interaction, water uses, benefits, implications, institutional, legislation, instruments, stakeholder participation, local management.

Introduction

The environment has special functions when it comes to sustainable water management. It is used to purify and store water and has a role in the hydrological cycle. Apart from the benefits of environmental management for sustainable water use, there are also environmental benefits from proper management of water resources, such as protecting upper catchments, pollution control, safeguarding common resources on which communities depend, or an ecosystem approach to water management. However, the environment is often least considered when water management policies and plans are being developed and more often neglected when it comes to implementation. This paper addresses these issues and draws lessons from past experience to enhance practices in future.

The case is made for the use of integrated water management methods and techniques to the benefit of the environment and is supported by examples. The paper first looks at interactions between water management and the environment and continues with consideration of the environment in water policy development. It then addresses water management instruments as tools to protect the environment and finally argues that application

of an integrated water resource management (IWRM) approach leads to better environmental management.

Interaction between IWRM and the environment

In order to establish whether new management practices under IWRM are beneficial to the protection of the environment, the interaction between water and the environment, and between the environment and other water use sectors, have to be analysed. Questions to ask are:

- How does the environment use water?
- Why is the environment important to water management?
- How does the environment interact with other water use sectors?
- How does the environment benefit from IWRM?
- What are the implications for change?

How does the environment use water?

The relationship between the environment and water is best demonstrated by the way they interact. Ecosystems need water to maintain their functioning: plants evaporate and transpire water; animals drink water; fish and amphibians need water to live in (Cap-Net, 2003). The composition of an ecosystem is to a large extent determined by the presence and accessibility to water.

Water is used by upper-watershed ecosystems, like forests, shrublands and woodlands downstream, wetlands, floodplains, and mangroves need freshwater inputs. This water is used to maintain a (semi)-natural dynamic, often of a seasonal nature. To prevent degradation and destruction of ecosystems, it is important to have enough water of the appropriate quality and with the correct seasonal variability.

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