

INTEGRATED WATER RESOURCES MANAGEMENT
Meaning, Principles, Tools and Case Study Examples
Compiled by Ari Michelsen, AWRA
December 6, 2010

Integrated Water Resources Management (IWRM) – Global Water Partnership

<http://www.gwp.org/en/The-Challenge/What-is-IWRM/>

http://www.gwptoolbox.org/images/stories/gwplibrary/background/tac_4_english.pdf

As defined by the Technical Committee of the Global Water Partnership (GWP), Integrated Water Resources Management (IWRM) is a process that promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare without compromising the sustainability of ecosystems and the environment.

Operationally, IWRM approaches involve applying knowledge from various disciplines as well as the insights from diverse stakeholders to devise and implement efficient, equitable and sustainable solutions to water and development problems. As such, IWRM is a comprehensive, participatory planning and implementation tool for managing and developing water resources in a way that balances social and economic needs, and that ensures the protection of ecosystems for future generations. Water's many different uses—for agriculture, for healthy ecosystems, for people and livelihoods—demands coordinated action. An IWRM approach is an open, flexible process, bringing together decision-makers across the various sectors that impact water resources, and bringing all stakeholders to the table to set policy and make sound, balanced decisions in response to specific water challenges faced.

Integrated Water Resources Management Reader – UN-Water Decade Program, 2010

http://www.un.org/waterforlifedecade/pdf/05_2010_reader_iwrm_eng.pdf

The reader provides basic references for some of the latest and most relevant United Nations publications on IWRM issues.

Integrated Water Resources Management (UN-GWP, Cap-Net Tutorial; IWRM Principles)

http://www.archive.cap-net.org/iwrm_tutorial/mainmenu.htm#

What is meant by integrated water resources management? Why is it so important? What are we losing without it? What are the gains to be made from introducing it? If it is so good, why isn't everybody doing it already? This brief introductory tutorial is aimed at policy makers, water managers, trainers and educators who want a basic understanding of IWRM principles. This tutorial provides the ammunition (arguments, examples, methodologies) to make the case for IWRM and to counter those who may oppose it on institutional or sectoral grounds.

A Handbook for IWRM – GWP and International Network of Basin Organizations

Global Water Partnership and International Network of Basin Organizations. 2009. A Handbook for Integrated Water Resources Management in Basins. Elanders, Sweden.

<http://www.riob.org/IMG/pdf/GWP-INBOHandbookForIWRMinBasins.pdf>

International Center for Integrated Water Resources Management - ICIWaRM

<http://www.iciwarm.org/en/>

The International Center for Integrated Water Resources Management (ICIWaRM) is a UNESCO Category 2 water centre headquartered at the U.S. Army Engineer Institute for Water Resources (IWR) in Alexandria, Virginia, USA. "Category 2" centers are provided for and funded by the host nation, but are under the auspices of UNESCO. ICIWaRM was officially created by an agreement between the U.S. Government and UNESCO in October 2009.

Integrated Water Resources Management (Water Encyclopedia)

<http://www.waterencyclopedia.com/Hy-La/Integrated-Water-Resources-Management.html>

Integrated water resources management is the practice of making decisions and taking actions while considering multiple viewpoints of how water should be managed. These decisions and actions relate to situations such as river basin planning, organization of task forces, planning of new capital facilities, controlling reservoir releases, regulating floodplains, and developing new laws and regulations. The need for multiple viewpoints is caused by competition for water and by complex institutional constraints. The decision-making process is often lengthy and involves many participants.

According to a 1996 report of the American Water Works Research Foundation, Total Water Management is the exercise of stewardship of water resources for the greatest good of society and the environment. A basic principle of Total Water Management is that the supply is renewable, but limited, and should be managed on a sustainable-use basis.

Taking into consideration local and regional variations, Total Water Management:

- Encourages planning and management on a natural water systems basis through a dynamic process that adapts to changing conditions;
- Balances competing uses of water through efficient allocation that addresses social values, cost effectiveness, and environmental benefits and costs;
- Requires the participation of all units of government and stakeholders in decision-making through a process of coordination and conflict resolution;
- Promotes water conservation, reuse, source protection, and supply development to enhance water quality and quantity; and
- Fosters public health, safety, and community goodwill.

Global Water Partnership IWRM Toolbox

http://www.gwptoolbox.org/index.php?option=com_content&view=article&id=66&Itemid=64

GWP's experiences from national IWRM planning processes include:

* A realistic IWRM plan requires the design of functions, structures and procedures to take into account the financial and human resource constraints, the existing institutional structures, the management capacity and the capacity for change.

* Successful IWRM plans need to be aligned with high-priority national development processes and broad cross-sectoral and stakeholder support, even if these are outside the water sector.

* Multi-stakeholder involvement in the decision making processes is essential for the acceptability of the outcome.

* Economic arguments for financing water resources management must be developed and well communicated.

IWRM CASE STUDIES/EXAMPLES

IWRM in Practice – 2009 Case study book edited by Roberto Lento and Mike Muller

<http://www.earthscan.co.uk/?tabid=49405>

The approach known as Integrated Water Resources Management (IWRM) is widely recognized as the best way forward, but is poorly understood, even within the water sector. Since a core IWRM principle is that good water management must involve the water users, the understanding and involvement of other sectors is critical for success. There is thus an urgent need for practical guidance, for both water and development professionals, based on real world examples, rather than theoretical constructs.

Status of Integrated Water Resources Management (IWRM) Plans in the Arab Region

<http://water.cedare.int/cedare.int/files15%5CFile2298.pdf>

CEDARE 2005.

Status Report on IWRM and Water Efficiency Plans – Prepared for the 16th Session of the Commission on Sustainable Development, May 2008, United Nations.

http://www.unwater.org/downloads/UNW_Status_Report_IWRM.pdf

Strategy for Integrated Water Resources Management [PDF]

Source: No. ENV 125. Washington, DC.

By: Inter-American Development Bank (IADB). 1998.

This report is an example of applying a IWRM approach. It focuses on the Latin America Caribbean region. While it is from the perspective of a Bank, it offers an example of how IWRM can be applied. It suggests key principles the Bank will apply in its water-related activities and strategic instruments that may be used on a case-by-case basis. It also outlines operational guidelines on how to integrate the principles of the strategy with the operational plans of the Bank. Annex I has a useful table showing the differences between different approaches - from project-oriented water resources development to integrated water resources management. Annex II has a summary of international declarations regarding IWRM. Annex III list different forms and responsibilities of private sector participation in public services provision. Annex IV gives a simplified overview of the strategy.

<http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1481461>

Delaware River Basin Commission

<http://www.state.nj.us/drbc/> (home page)

Delaware River Basin Plan: The purpose of the Basin Plan is to provide a unified framework for addressing new and historic water resource issues and problems. The Plan emphasizes an integrated approach, recognizing that water supply and water quality cannot be managed separately; that ground water and surface water are two aspects of the same resource, separated in time and space, but fundamentally interrelated. Integrated management means considering all

aspects of the water resource in decision making.
<http://www.state.nj.us/drbc/BPSept04/index.htm>

Delaware River Basin Progress Reports
<http://www.state.nj.us/drbc/basinplan.htm>

Northwest Power Planning Council

<http://www.nwcouncil.org/> (home page)

“Striking a balance between energy and the environment in the Columbia River Basin.”