



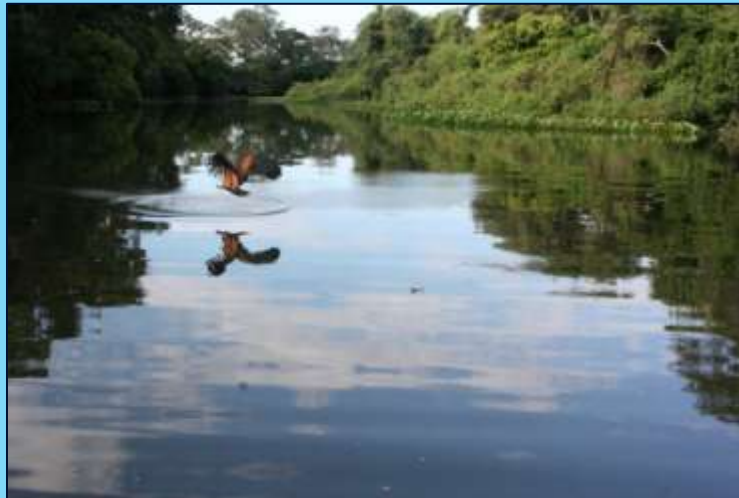
Module 3



Complementarities between IWRM and EM

We will understand the concept of IWRM and EM, and the differences and similarities between two concepts

We present material, discuss, present and discuss again





Module 3



Complementarities between IWRM and EM





IWRM

- **Integrated Water Resource Management (defined by Global Water Partnership)**
 - a process which promotes the coordinated development and management water, land, and related resources to maximize the resultant economic and social welfare in equitable manner without compromising the sustainability of vital ecosystem
 - Involves integration of *Natural System* and *Human System*



Natural System Integrative Elements

- **Freshwater and coastal-zone management**
- **Land and water management**
- **“Green” and “blue” water**
- **Surface and groundwater management**
- **Quality and quantity of water resources**
- **Upstream and downstream interests**
- **Water stored in protected and non-protected areas**



Human System Integrative Elements

- **Mainstreaming water-resource issues**
- **Cross-sectoral across all major water use sectors**
 - Involving all stakeholders
 - Explicitly addressing gender differences





IWRM Target

- IWRM is designed to **manage water as resource** and **create framework for provision of water service.**



Four basic Dublin-Rio Principles

- **IWRM strategies are based on the four Dublin-Rio Principles**
 1. **Water is finite and vulnerable**
 - **Water is finite resource. It is supported by the quantitative review of global water cycle.**
 - **Water is need for different purposes, functions, and services, therefore water must be used with maximum possible efficiency.**



Four basic Dublin-Rio Principles

- **IWRM strategies are based on the four Dublin-Rio Principles**
 - 2. Water management must include a wide range of stakeholders**
 - **Water is a resource that affect all.**
 - **True participation is ensured only when all stakeholder are involved in the decision making.**
 - **A participatory approach involving all stakeholders is the best strategy to achieve long-term accord.**



Four basic Dublin-Rio Principles

- **IWRM strategies are based on the four Dublin-Rio Principles**
 - 3. Gender is a core issue**
 - It is generally accepted that women play a key role in water use.
 - But women play a less powerful role than men in the management, problem analysis, and decision making related to water.
 - IWRM demands the role of women to be acknowledged.



Four basic Dublin-Rio Principles

- **IWRM strategies are based on the four Dublin-Rio Principles**
 4. **Water has economic value and should be managed as an economic good**
 - **Within this principle, it is vital to recognize first the basic right to all human beings to have access to clean water and sanitation at an affordable price.**
 - **Managing water as an economic good is an important way of achieving efficient and equitable use, and of encouraging conservation and protection of water resources.**



Principles of IWRM

- ***Economic efficiency:*** bring the greatest benefit to the greatest number of user
- ***Equity:*** ensuring equal access for all user to an adequate quantity and quality of water
- ***Environmental sustainability:*** interest of future generations should not be compromised



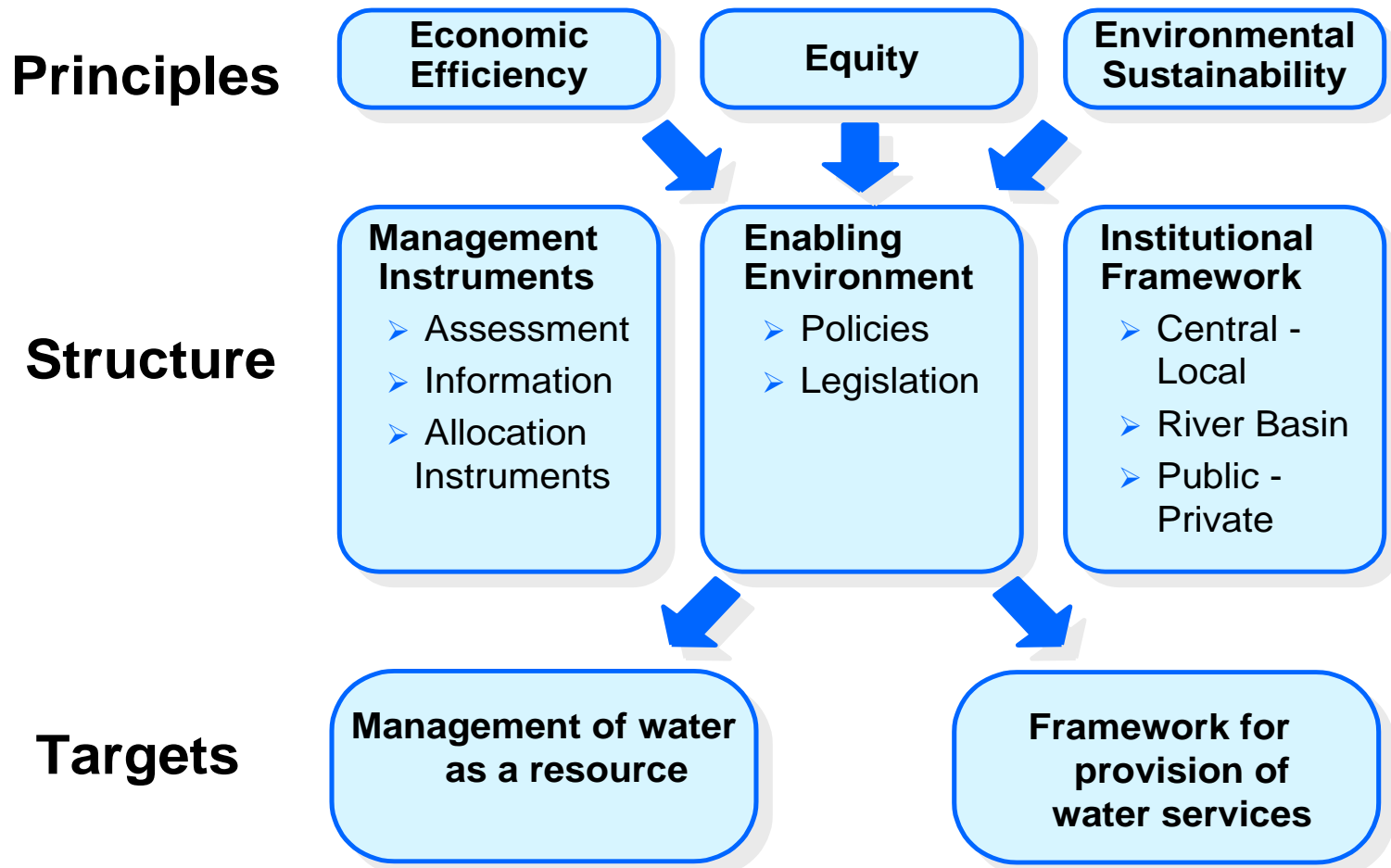


IWRM Structure

- ***The enabling environment (enforcement)***
 - policies, legislation, and regulation
- ***The institutional roles***
 - The role and functions of administrative levels, protection management authority, stakeholder
- ***The management instruments***
 - Operation instruments for effective regulation, monitoring, and enforcement that enable the decision maker to make choice among alternative action



IWRM's Principles-Structure-Targets





Small-Group Discussion (15 min)

- **How are you implementing IWRM in your catchment now?**
- **How does IWRM structure the ways you evaluate management options?**
- **What do you feel should be added to your current IWRM toolkit to meet the objective of increasing benefits from water resources?**



Ecosystem Management

- **Ecosystem**
 - A complex set of relationships among all of the organisms and the abiotic environment found in a defined spatial area.
 - A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit (defined by the Convention on Biological Diversity and the Millennium Ecosystem Assessment (MA))
 - Anything from a small pond to a region or even the whole of planet Earth



Ecosystem Management

- **Ecosystem Management**
 - Working with ecosystem structure and process to supply ecosystem services (e.g., food, fuel, natural medicines).
 - In module 4, ecosystem structure and process will be presented.



IWRM Emphasis

Managing water resources

- Water quality
- Water quantity
- Hydropower
- Integration of land management
- Other water services



EM Emphasis

Managing ecosystem goods and services

- Water regulation
- Freshwater nutrient cycling
- Water purification and waste treatment
- Fisheries & recreation
- Ecotourism services
- Climate regulation
- Natural hazard regulation
- Disease regulation
- Primary production



Similarities between IWRM and EM

Common element: Water!



Contrasting IWRM and EM

A differences between two concepts can be discussed as followed four aspects

- **Management objectives**
- **Geographic scope**
- **Thematic content**
- **Value statements**





Management Objectives

IWRM

- **Protect & conserve water to sustain its functions**
- **Both water quality and quantity**

EM

- **Ecosystem services**
 - Food, fuel, water
 - Water regulation
 - Recreation
 - Plant growth



Geographic Scope

IWRM

**Usually aggregated
across scales**

- National
- Basin
- Catchment
- Aquifer

EM

**Usually
disaggregated**

- Eco-region
- Forests
- Wetlands
- Lakes



Thematic Content

IWRM

- **Water cycles**
- **Mineral cycles and biological growth in the context of water quantity & quality**
- **Water use**

EM

- **Water cycling**
- **Mineral cycling**
- **Biological cycling**
- **Land use**



Value Statements

IWRM

- **Economic efficiency**
- **Environmental sustainability**
- **Social equity**

EM

- **Values is based on case by case**
- **Human well-being**



Discussion (10 min)

- What are complementarities between IWRM and Ecosystem Management? Can we do both in the same place?
- *Grouping:* Identify two societal goals that would be better-served by IWRM than EM
- *Grouping:* Identify two societal goals that would be better-served by EM than IWRM





Module 3



Does that seem well grounded and reasonable?

Can you picture yourself presenting that?

Can you picture any problems leading that discussion?

