



# Integrated Water Resources Management

## An Introduction



**Prof. Michael SCOULLOS**  
Chairman  
GWP-Med

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## Outline of the presentation

- 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?

[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)

Is it totally new ??

***The answer is NO !***

Many attempts have been made, also in our region, with promising results. **Some will be presented at the Workshop.**

## What is the GWP?

The GWP is a global network of organisations and institutions who promote policies which allow the sustainable management of water resources.

[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

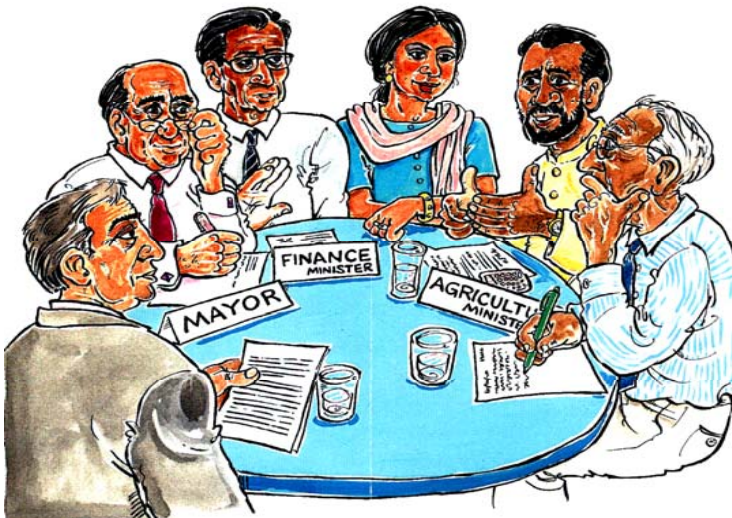
[7. Institutions](#)

### The Network is developed in

- ❑ 14 Regional Water Partnerships
- ❑ around 45 Country Water Partnerships
- ❑ around 40 Area Water Partnerships

### GWP-Med is

the Regional Water Partnership covering with activity the Mediterranean countries



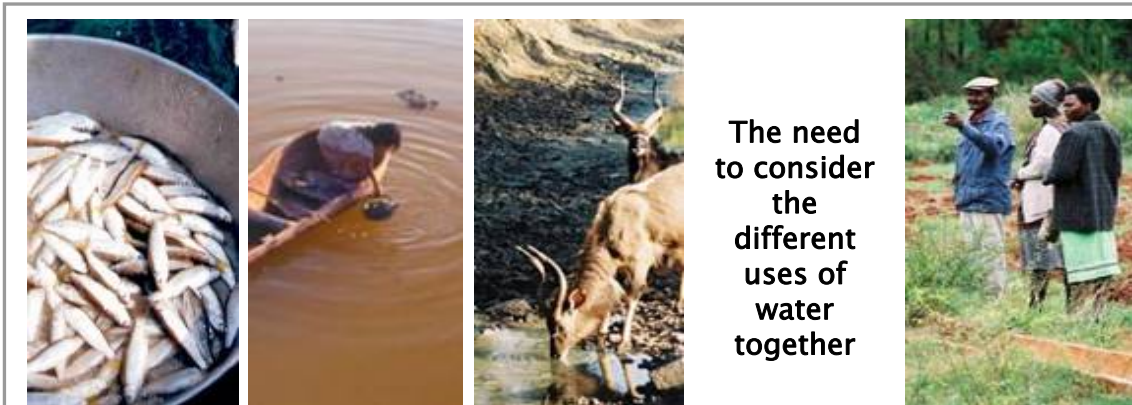


# 1. What is IWRM?

(1 of 3)

The basis of IWRM is that

- **different uses of water are interdependent,**
- **there is need to balance water supply with water demand,**
- **water quality and water quantity are equally important,**
- **water related vulnerability is reduced by using the most appropriate combination of technological, regulatory and economic tools (incentives, disincentives, etc)**



Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



# 1. What is IWRM?

(2 of 3)

Integrated management means that all the different **uses** of water resources **are** considered together, with policies affecting these resources.

It is different from the **sectoral approach** applied currently in many countries.



*A clear example of interdependent uses of water. Scroll the picture to view different users of water.*

Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



# 1. What is IWRM?

(3 of 3)

**IWRM is a systematic process** for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives.



It means that through IWRM we address adequately current needs without compromising the ability of the future generations to also address their own water needs.



Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



## 2. Why IWRM? - Key issues in water management

(1 of 4)

### The Facts

- Global water: 97% seawater, **3% freshwater**. Of the freshwater 87% not accessible, **13% accessible** (0.4% of total).
- Today more than **2 billion people** are affected by water shortages in over **40 countries**.
- **263 river basins** are shared by 2 or more nations;
- **2 million tonnes** per day of human waste are deposited in water courses
- **Half the population** of the developing world are exposed to **polluted sources** of water that increase disease incidence.
- **90% of natural disasters** in the 1990s were water related.
- The increase in numbers of people **from 6 billion to 9 billion** will be the main driver of water resources management for the next 50 years.



***Urgency for action !  
The world's  
freshwater  
resources are  
under increasing  
pressure.***

Home

1. IWRM

2. Why IWRM?

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



## 2. Why IWRM? - Key issues in water management

(2 of 4)

Water crisis is in fact a water governance crisis

- **Sectoral approaches** to water resources management have dominated in the past and are still prevailing. This leads to **fragmented** and **uncoordinated** development and management of the resource.

- We need to find the **optimum** most effective and efficient level of governance between **full rigid centralization** and **total decentralization**.



***Increased competition...***  
*Increased competition for the finite resource is aggravated by inefficient governance.*

Home

1. IWRM

2. Why IWRM?

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



## 2. Why IWRM? - Key issues in water management

(3 of 4)



### Securing water for people

1/5 of the world's population is without access to safe drinking water and half of the population is without access to adequate sanitation.



### Securing water for food production

Over the next 25 years food will be required for another 2-3 billion people. Water is increasingly seen as a key constraint on food production...



### Protecting vital ecosystems

Aquatic ecosystems depend on water flows, seasonality and water-table fluctuations and are threatened by poor water quality.

***Critical to secure high level of health for humans and ecosystems, at the most cost-effective way***

Home

1. IWRM

2. Why IWRM?

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



## 2. Why IWRM? - Key issues in water management

(4 of 4)



### **Gender disparities**

Water management is male dominated. Though their numbers are starting to grow, the representation of women in water sector institutions is still low.

**Unlike the decisions taken at household.**

**Awareness** for the role of women is important.

Home

1. IWRM

2. Why IWRM?

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



### 3. Water Management Principles

*The International Conference on Water and Environment, Dublin, Ireland, January 1992.* gave rise to 4 principles that have been the basis for much of the subsequent water sector reform.



**Fresh water is a finite & vulnerable resource, essential to sustain life, development and the environment**



**Water development & management should be based on a participatory approach**



**Women play a central part in the provision, management and safeguarding of water.**



**Water has an economic value in its production and all its competing uses and should be recognised as a 'value' and as an economic good**

[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)

### 3. Water Management Principles

[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

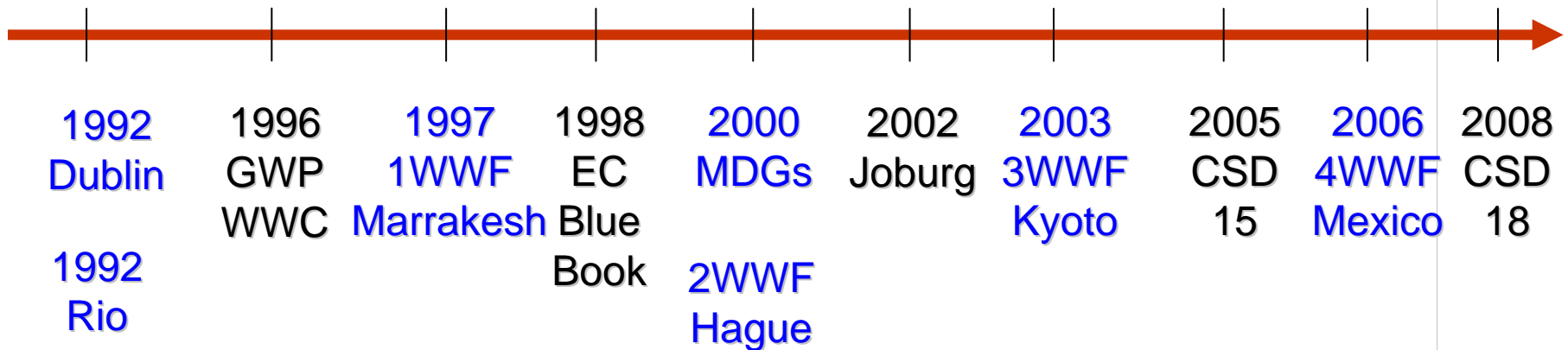
[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)

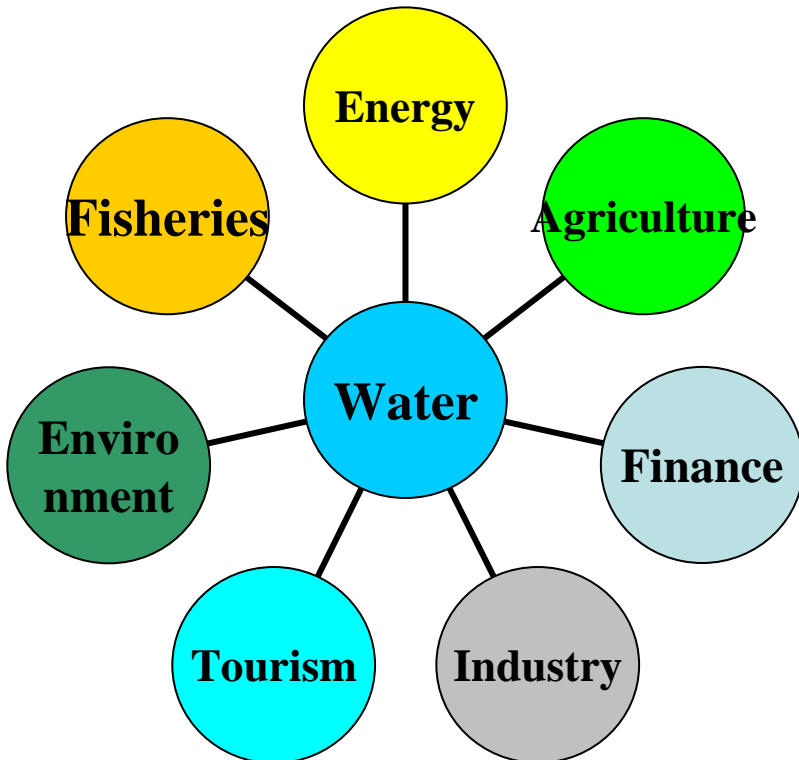
## Milestones in the evolution of international IWRM policies





## 4. The water users: competing uses

(1 of 4)



### Priorities

Each country has its priority developmental and economic goals set according to environmental, social and political realities.

**Each one of the water uses has valuable positive impacts.**

Most also have negative impacts which may be made worse by poor management practices, lack of regulation or lack of motivation due to the water governance regimes in place. **The principles should not be violated.**

Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions

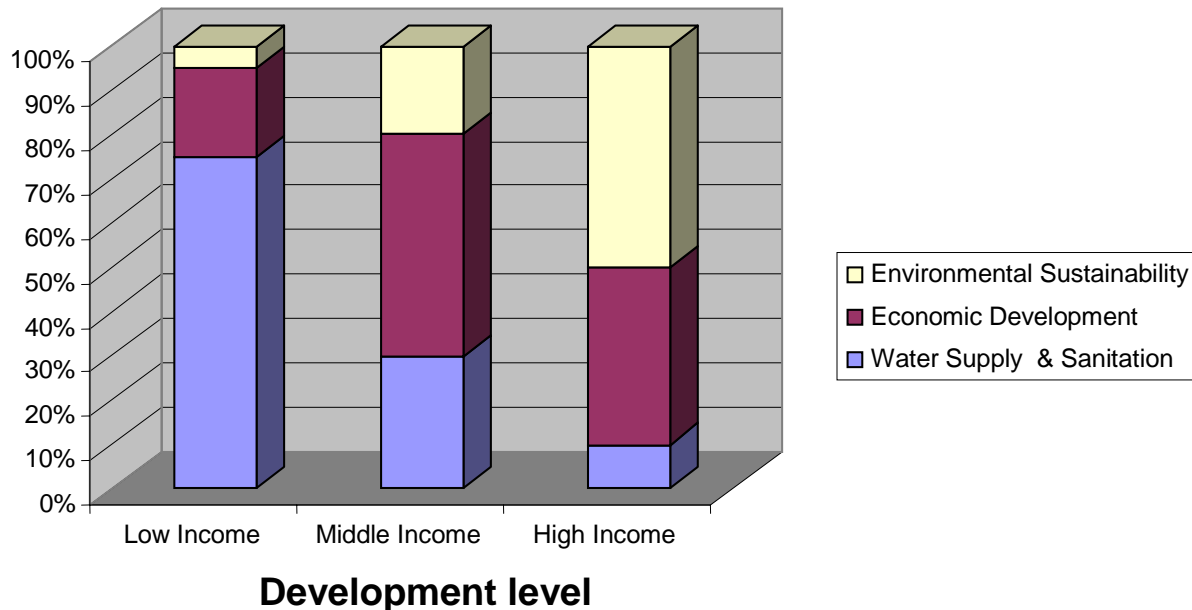
## 4. The water users: competing uses

(3 of 4)

**IWRM is no blue print.**

***It is formulated according to national / local needs based on consensus through participatory processes***

**Typical shift in national priorities according to development levels**



[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)



## 4. The water users: competing uses

### Social and economic benefits from water use sectors.

These are generally obvious in terms of food production, energy production, drinking water, jobs, recreation, etc, **but the relative value of these benefits is more difficult to assess**, particularly because we do not deal only with present but also with future generations.

(4 of 4)



Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions

### Prioritising allocation between sectors...

When there is competition for water resources it brings into the open the need to justify the allocation of water to one user rather than to another. The input from users, politicians and society in general is necessary as **the allocation may not be most efficient when valued in economic terms alone or acceptable when made only on political grounds.**





## 5. The process: Implementing IWRM

(1 of 3)

### The challenge to conventional practices

The case for IWRM is strong.

The problem for most countries is the long history of unisectoral development.

*As the Global Water Partnership puts it: "IWRM is a challenge to conventional practices, attitudes and professional certainties. It confronts entrenched sectoral interests and requires that the water resource is managed holistically for the benefits of all. No one pretends that meeting the IWRM challenge will be easy but it is vital that a start is made now to avert the burgeoning crisis."*



**IWRM is, above all, a process**

Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



## 5. The process: Implementing IWRM

(2 of 3)

### Negotiating differences

All of this implies **change**, which **raises challenges as well as opportunities**.

IWRM requires that **platforms** be developed to allow very different players, often with apparently irreconcilable differences to somehow work together.

### Cross sectoral integration

A critically important element of IWRM is the integration of views and interests of the various water actors in the management framework (see Figure).

[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

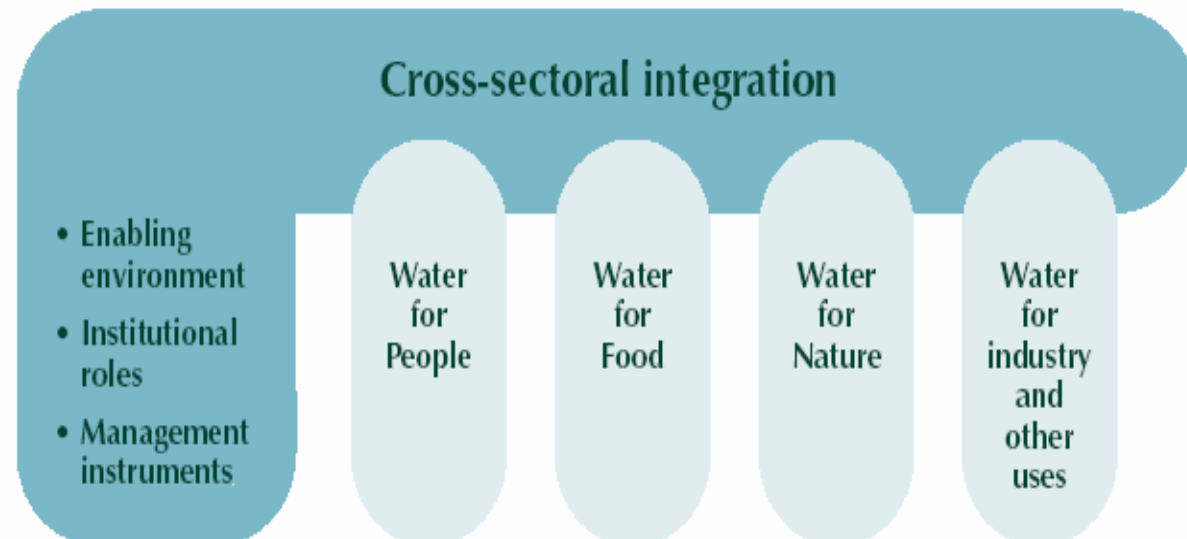
[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)





## 5. The process: Implementing IWRM

(3 of 3)

[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

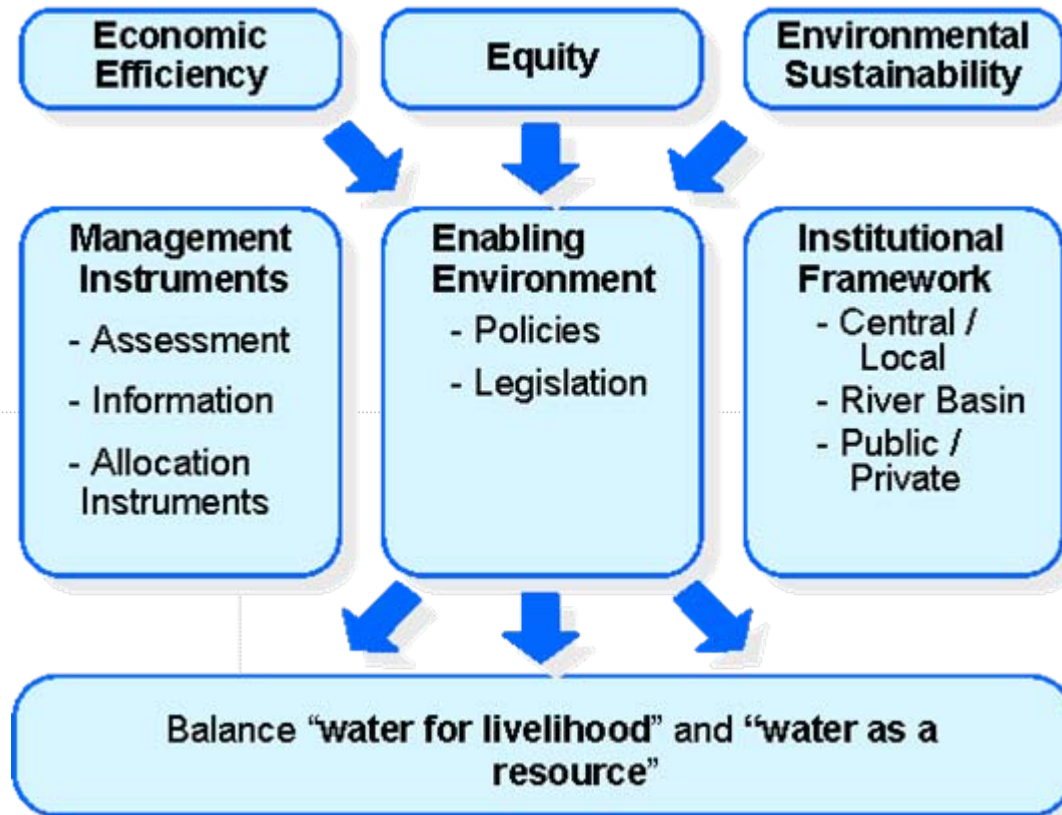
[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)

Because of the existing institutional and legislative frameworks, **implementing IWRM is likely to require reform at all stages in the water planning and management cycle.**



This is a question of moving toward a situation with the right *enabling environment, institutional framework and management instruments* (see figure) for sustainable water resources development and management.



## 6. Policy and legal framework

### An overall plan

An overall plan is required to envisage how the transformation can be achieved and this is likely to begin with a **new water policy** to reflect the principles of sustainable management of water resources. To put the policy into practice is likely to require the **reform of water law and water institutions**. This can be a long process and needs to involve source of knowledge and expertise and extensive consultations with affected agencies and the public.

Bringing some of the principles of IWRM into a water sector policy and achieving political support may be challenging, as hard decisions have to be made.



[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)



## 7. Institutional framework

(1 of 2)

### Role of the government as facilitator and regulator

For many reasons, governments consider water resources planning and management to be a central part of government responsibility. This view is consistent with the international consensus that promotes the concept of government as a facilitator and regulator, and to a certain extent an implementer of projects.

### Agreeing on the level of government involvement

The challenge is to reach mutual agreement about the level at which, in any specific instance, government responsibility should cease, or be partnered by autonomous water services management bodies and/or community-based organisations



[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)



## 7. Institutional framework

### Institutional requirements

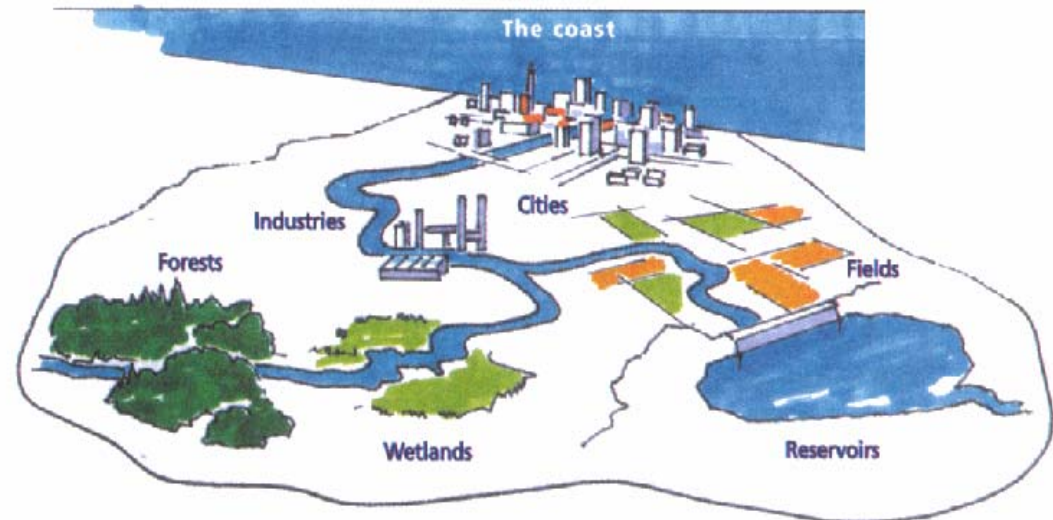
In order to bring IWRM into effect, institutional arrangements are needed to enable:

- **Participatory processes** will involve all competent actors in consultation and decision making;
- Water resources management **based on hydrological boundaries**;
- Organisational structures at **basin and sub-basin levels** to enable decision making at the lowest appropriate level;
- **Government to co-ordinate** the national management of water resources across water use sectors.

(2 of 2)

### Water Basin Organisations

The concept of integrated water resources management has been accompanied by promotion of the water basin (watershed) and/or aquifer as the logical geographical unit for its practical realisation.



[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

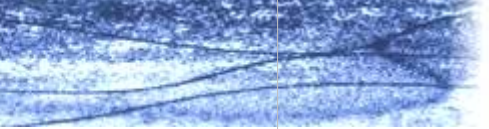
[3. Principles](#)

[4. The users](#)

[5. The process](#)

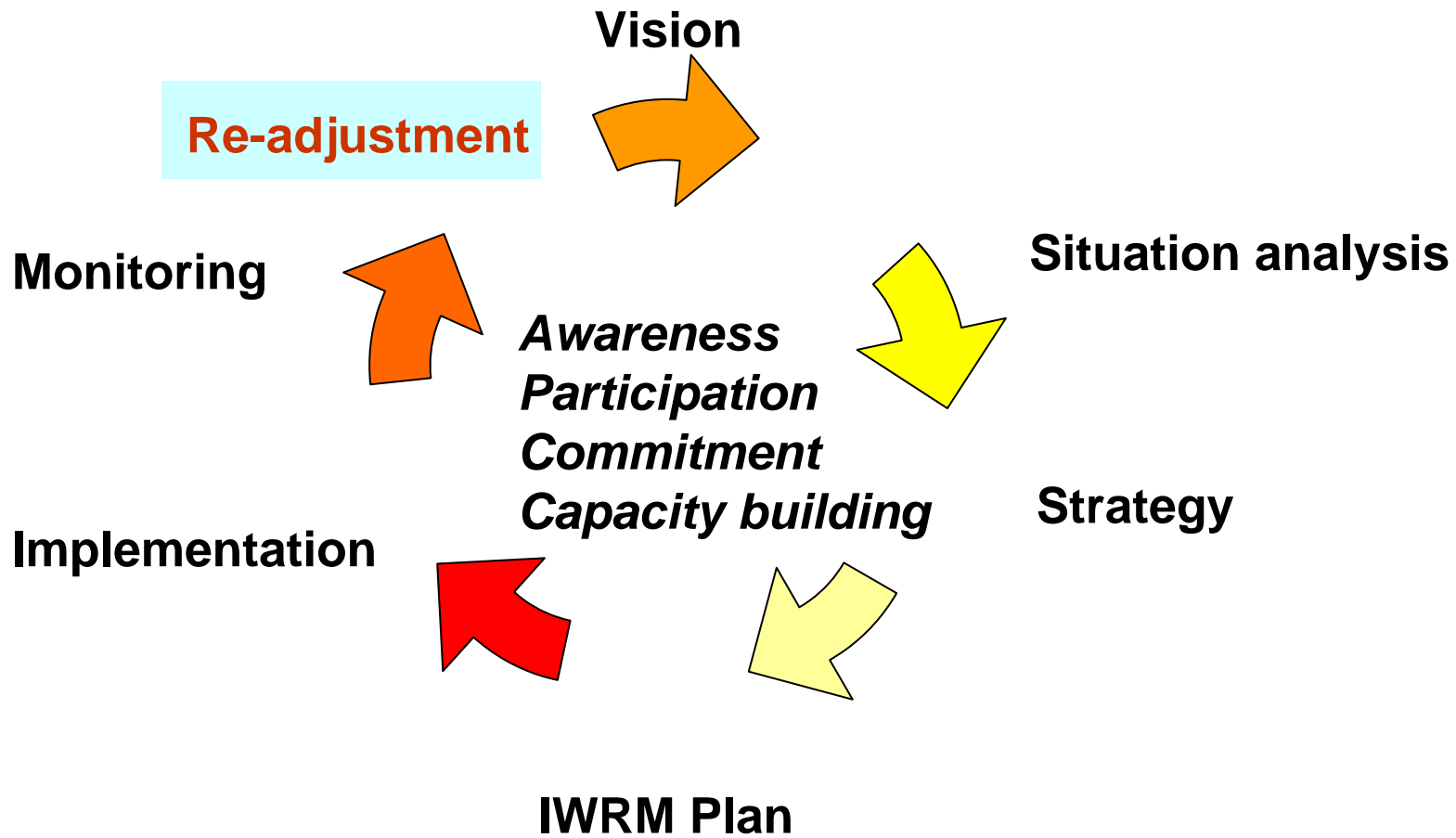
[6. Policy](#)

[7. Institutions](#)

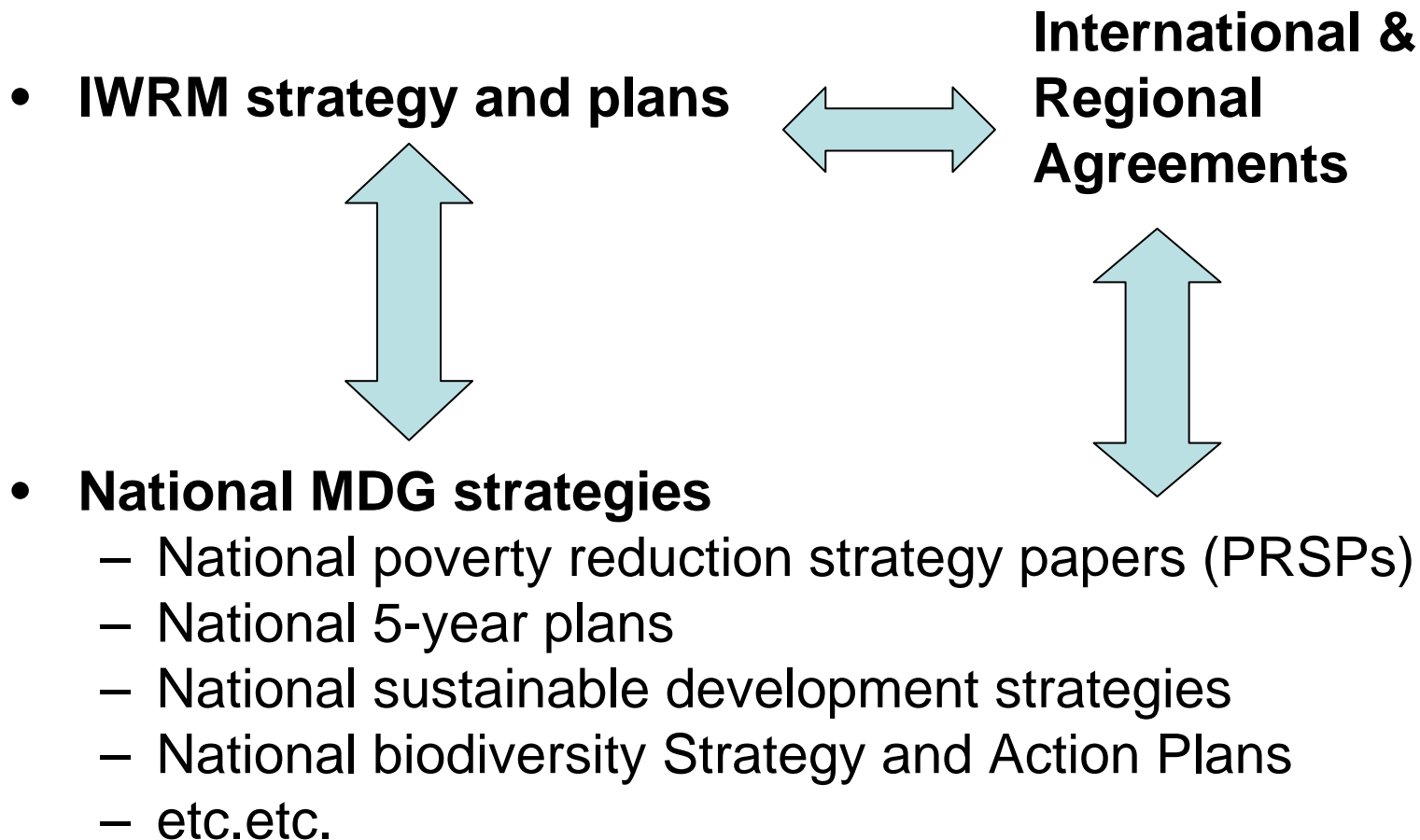


# 7. National IWRM Planning: A cyclical (co) evolutionary process

- Home
- 1. IWRM
- 2. Why IWRM
- 3. Principles
- 4. The users
- 5. The process
- 6. Policy
- 7. Institutions**



## 7. National IWRM Planning: Links to other strategies and plans



[Home](#)

[1. IWRM](#)

[2. Why IWRM](#)

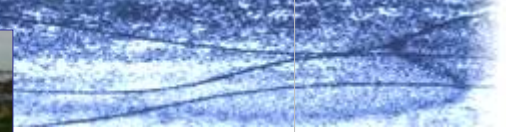
[3. Principles](#)

[4. The users](#)

[5. The process](#)

[6. Policy](#)

[7. Institutions](#)

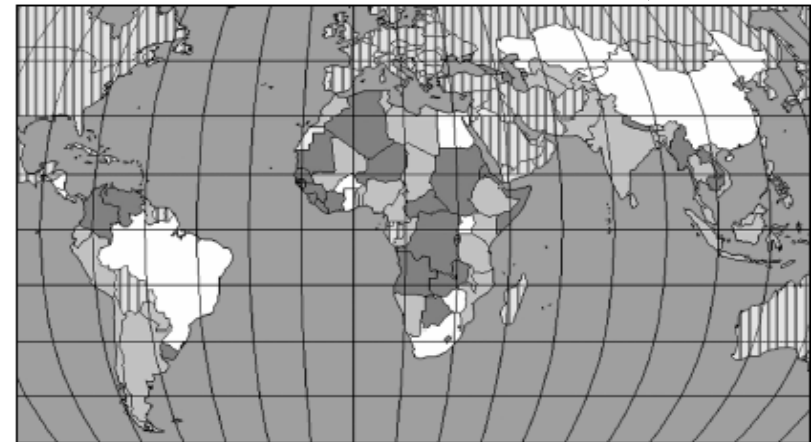


## 7. National IWRM Planning: responding to the related WSSD objective

### Results reported to WWF4 – Mexico 2006

#### Total World figures:

- **Good progress: 25%**  
*(Some Med countries in this group)*
- **Some steps: 50%**  
**(More Med countries, including Libya  
– see Strategy 2000-2025)**
- **Initial stage: 25%**



Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions



**Michael Scoullos**  
e-mail: [secretariat@gwpmed.org](mailto:secretariat@gwpmed.org)

Home

1. IWRM

2. Why IWRM

3. Principles

4. The users

5. The process

6. Policy

7. Institutions

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