



**NAP-GSP REGIONAL TRAINING WORKSHOP FOR ASIA**  
**Mainstreaming climate change adaptation into water resources**  
*Seoul, 13 - 16 September 2017*

**Session 6a: CCA in water resource management**

**Presentation: Integrated Water Resource Management (IWRM)**



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# Why IWRM

- 263 river basins are shared by two or more nations.
- Increasing pollution issues
- 90% of natural disasters in the 1990s were water related.
- The global population will increase from 6 billion to 9 billion over the next 50 years.
- Integrated management means that all the different uses of water resources are considered together.
- Water allocations and management decisions consider the effects of each use on the others.
- Taking into account of overall social and economic goals, including the achievement of sustainable development.
- IWRM facilitates participatory decision making

# Why IWRM?

- Globally accepted and makes good sense.
- Key element in national water policy.
- Incorporates social and environmental considerations directly into policy and decision making.
- Directly involves the stakeholders.
- Is an approach and tool for optimizing investments under tight financing climate.

# Integrated Water Resources Management

The GWP definition of IWRM is:

*“IWRM is a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems”*

# Integrated Water Resources Management

A systematic process for linking water and water-related policy, objectives, and uses to improve decision making in:

- operation and management of natural resources and environmental systems;
- design and implementation of programs and policies.

A coordinating framework for integrating sectoral needs, water and water-related policy, resource allocation, and management within the context of social, economic, and environmental development objectives.

# Integrated Water Resources Management

- The goal of IWRM Planning and Implementation the sustainable use and development of the water and related resources of a river basin.
- This goal recognises that the sustainable development of the people is linked to the sustainable development of the land and water

# IWRM Principles: A meeting in Dublin in 1992

1. *Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.*
2. *Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels.*
3. *Women play a central part in the provision, management and safeguarding of water.*
4. *Water has an economic value in all its competing uses and should be recognised as an economic good as well as a social good.*

# The objectives of the Mekong River Integrated River Basin Plan - given in the MRC Agreement

Article 2: “promote, support, cooperate and coordinate in the development of the full potential of sustainable benefits to all riparian States and the prevention of wasteful use of the Mekong River Basin waters, with emphasis on joint and/or basin wide development projects....”

## Key points:

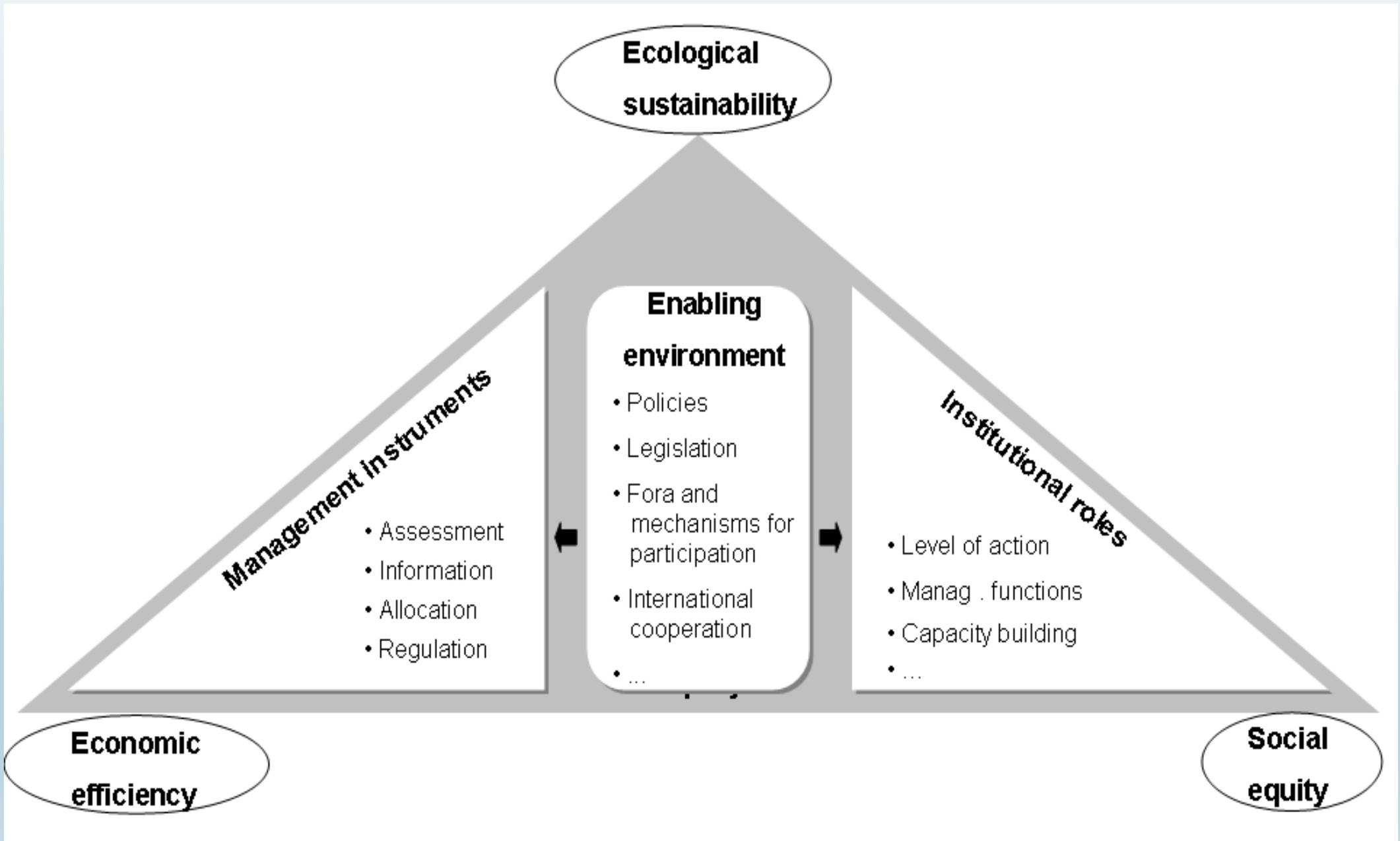
Cooperation and coordination,

Sustainable benefits

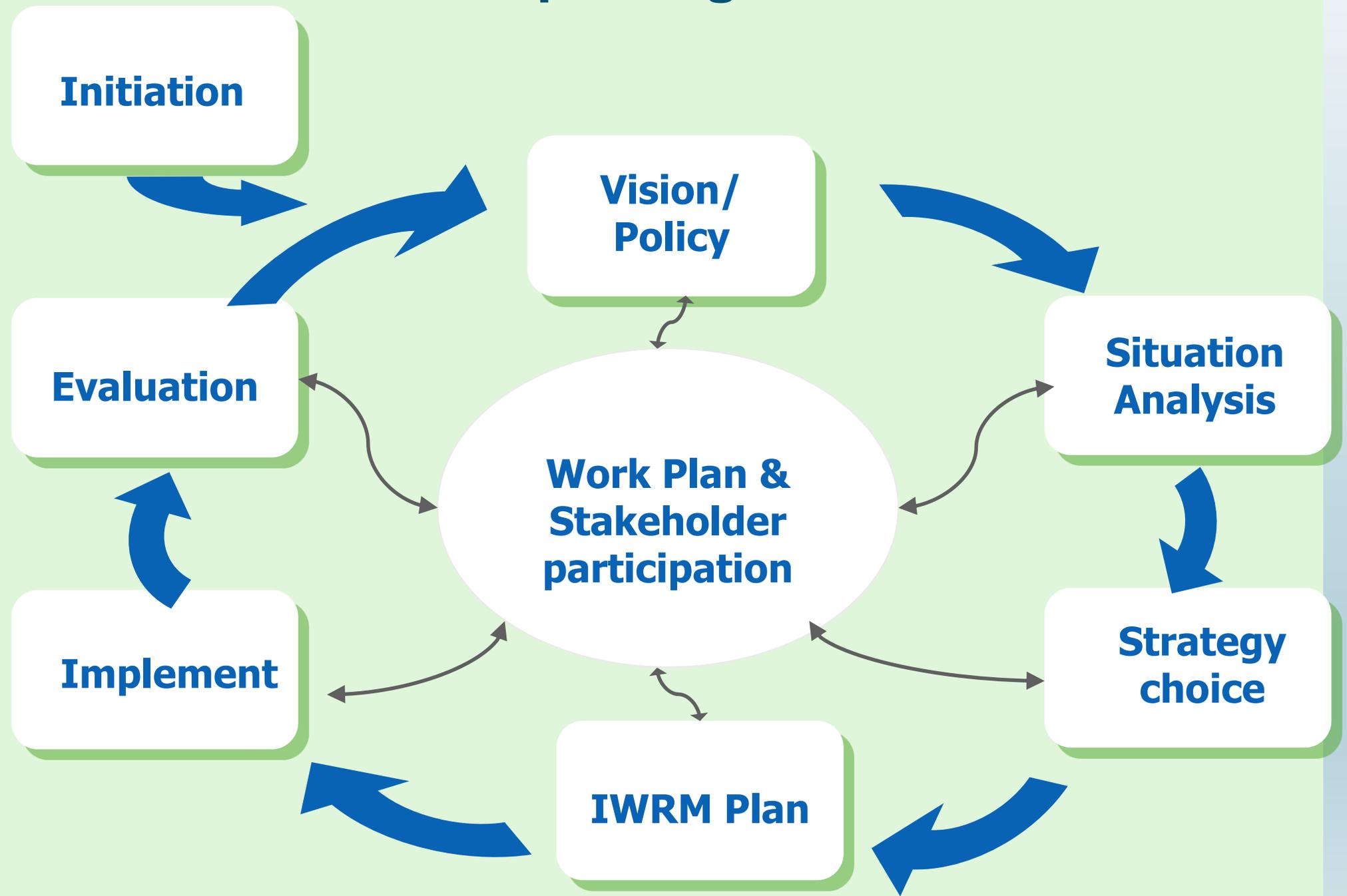
Prevention of wasteful use

Emphasis on joint and/or basin wide development projects

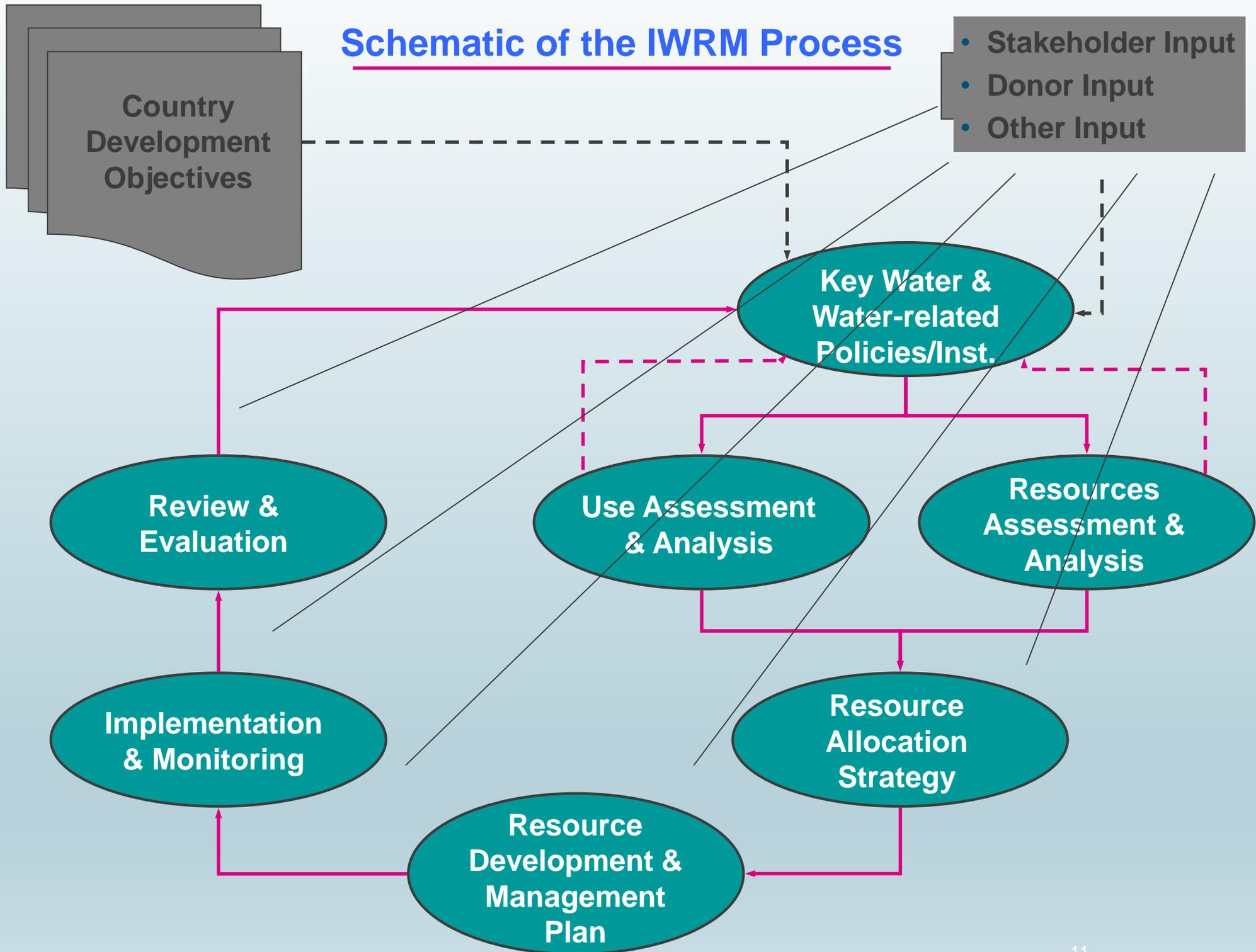
# IWRM Framework



# The Cycle for developing and adjusting an IWRM planing



# Schematic of the IWRM Process



# IWRM Implementation in Urban areas

Conventional approach	Integrated approach
Waste, sanitation and stormwater = <b>nuisance</b>	Waste, sanitation and stormwater = <b>resource</b>
Sources of water: surface and underground	Alternative sources: SW, GW, RW, WW, StW
Same water quality for all uses	Matching quality with intended use
Municipalities focusing on accounting	Municipalities focusing on value creation, business opportunities, job creation, economic benefits
Grey infrastructure	Green and grey infrastructure
Centralized systems	Approach by clusters, decentralized systems
Linear approaches to collect, treat, use and discharge	Circular approaches - water, energy and resource recovery
Fragmented institutions	Coordinated management
Top down planning	Involvement of key stakeholders at city and basin levels

# IWRM can be characterized as:

- A process relevant for incorporating CCA considerations
- It is not a product
- Scale independent - applies at all levels of development
- A tool for self assessment and program evaluation
- A tool for policy, planning, and management
- A mechanism for evaluating competing demands, resource allocation, and tradeoffs

# Principles and practices from IWRM that apply to mainstreaming climate resilience

- Integration is essential across planning levels and sector interests.
- Clear diagnosis of national, sectoral, and local levels is required.
- Sector strategies should address broader national development goals (e.g. growth, poverty).
- Planning should be based on existing institutions and processes
- Roles and responsibilities must be carefully defined at an early stage.
- Wide stakeholder participation is necessary to help manage contentious issues
- 'Soft' solutions must be adopted as well as 'hard' solutions
- Capacity development must underpin implementation
- Individual 'champions' can be influential.
- Continuous communication is invaluable.
- Transboundary dimensions to climate adaptation are important.

# Key messages

- Sector strategies, plans and investments should promote sound water resources management as a cost-effective way of delivering immediate development benefits and building resilience to climate change.
- IWRM offers the opportunity to build resilience to current climate variability while building capacity to adapt to future climate.
- IWRM allows balancing of equity, environmental and economic priorities, as well as soft and hard responses including both natural and man-made infrastructure at community, national and river basin levels.
- IWRM provides mechanisms and approaches for managing changes to the quantity and quality of water, for capacitating organizations and communities to cope with climate variability and change, and for managing trade-offs and conflicts.

# The End

<http://www.gwp.org/wacdep>