An Integrated Water Resources Management approach for building climate resilience in the Caribbean

Module 1: Integrated Water Resources Management (IWRM)

Global Water Partnership Caribbean

UNESCO-IHE Institute for Water Education

REDICA

RHAMA

Credits and Acknowledgements

- Slides are adapted from Cap-Net 2009 Training Slides unless otherwise stated. See http://www.cap-net.org/training-material/iwrm-as-a-tool-for-adaptation-to-climate-change-english/)

- Unless otherwise stated, case studies and examples are provided from ***Cap-Net, WMO/APFM, UNESCO-IHE, REDICA and GWP-C. 2015. (Draft) IWRM as a Tool for Adaptation to Climate Change with Caribbean Case Studies. Training Manual and Facilitators Guide. Cap-Net.***

- This training package is produced by Global Water Partnership - Caribbean and CAPNET/Caribbean WaterNet with Funding from the GWP-C Water Climate and Development Programme (WACDEP)

- WACDEP is executed by GWP-C in Partnership with the Caribbean Community Climate Change Centre (CCCCC)

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Goal and Objectives of the session

At the end of this session, participants will:

- Be able to describe the meaning of IWRM and its main principles;
- Understand the main reasons for taking an IWRM approach; and
- Understand the applicability of IWRM in the Caribbean Context.

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Outline Presentation

1. What is IWRM?

2. Why IWRM?

3. Principles

4. The stakeholders

5. The process

6. IWRM & CC

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What is IWRM?

GWP definition: a process which promotes the coordinated development and management of water, land and related resources in order to maximise economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems

... for future generations ...

Integrated management means that all the different uses of water resources are considered together.

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What is IWRM?

Water allocations and management decisions consider the effects of each use on the others. They are able to take account of overall social and economic goals, including the achievement of sustainable development.

The basis of Integrated Water Resources Management (IWRM) is that different uses of water are interdependent.

The **GOAL** is the sustainable management and development of water resources.

… for future generations …

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IWRM Key Technical Aspects

- IWRM
- Watershed Management
- Integrated Watershed and Coastal Areas Management (IWCAM)
- Wastewater management
- Integrated Flood Management (IFM)
- Integrated Urban Water Management (IUWM)
- Aquatic ecosystems
- Water Augmentation e.g. Rainwater Harvesting
- Water Use efficiency
- Climate Resilience

Overall these are Approaches to Protect the Quality and Quantity of Water

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Question

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Why IWRM?

- UN reports global water use has grown at twice the rate as the world's population
- Two intersecting crises
  - Shortage of supply
  - Contamination/Pollution
- Water crisis is not a global but a regional crisis
- We need to supply potable water at a sustainable cost

Why IWRM?

Urgency for action:

Water is vital for human survival, health and dignity and a fundamental resource for human development. The world's freshwater resources are under increasing pressure.

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.

Increased competition:

Increased competition for the finite resource is aggravated by inefficient governance

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Why IWRM?

Securing water for people:
One fifth 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.

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

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The Need for IWRM in the Caribbean

- The Caribbean region is home to some of the most water scarce nations on the planet
- These SIDS are particularly vulnerable to water resource stresses due to their limited size, human and natural resources, and need for socio-economic development
- Rapid growth, urbanisation, tourism and commercial requirements in the Caribbean region

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The Need for IWRM in the Caribbean

- Population increase from 17 to 41 million between 1950 and 2010 (UNDESA 2013)
- Poor and aging water distribution systems contribute to high percentages of unaccounted for water: Jamaica 67 percent, Trinidad and Tobago 47 percent, and Barbados 50 percent.
- Increasing intensity of natural hazards such as droughts and storms

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Water Management Principles

The Dublin principles have formed the basis for much of the subsequent water sector reform.

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

Water development and management should be based on a **participatory approach**, involving users, planners and policy makers at all levels.

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

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

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Water Management Principles: Caribbean Examples

Principle 2: Participatory Approach

Guyana Water Users Associations: Established throughout the coastal region since 2006. The objective to the Waters Users Association is to promote proper drainage and irrigation structures and to assist farmers to play a more integral role in managing their water supply.

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Water Management Principles: Caribbean Examples

Principle 3: Women play a central role in the management of water

The Rural Women's Network (RWN) in Guyana was launched in 1998 to aid in poverty reduction of rural women. RWN established a Steering Committee aimed at empowering and advocating on behalf of rural and hinterland women's development and promoting entrepreneurship.

The organisation networks with women's organisations, groups, and individuals from the ten administrative regions in Guyana and its mission is to empower rural women to improve their standard of living through training, cultural exchange, access to credit, and networking with a focus on capacity building.

RWN's role is to improve the livelihood options and sustainability of rural women, families and communities and to transfer skills to rural women involved in small business management, poultry, hydroponics agriculture, food/fruit processing, and handicraft.

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Water Stakeholders

- Agriculture
- Water supply
- Wastewater
- Mining and Industry
- Environment
- Fisheries
- Tourism
- Energy
- Transport
- Solid Waste
- General citizens

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IWRM and Stakeholders

- IWRM places emphasis on all stakeholders being involved
- Dismantle the sectoral, narrow focus
- Who are you working for?

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The IWRM Process

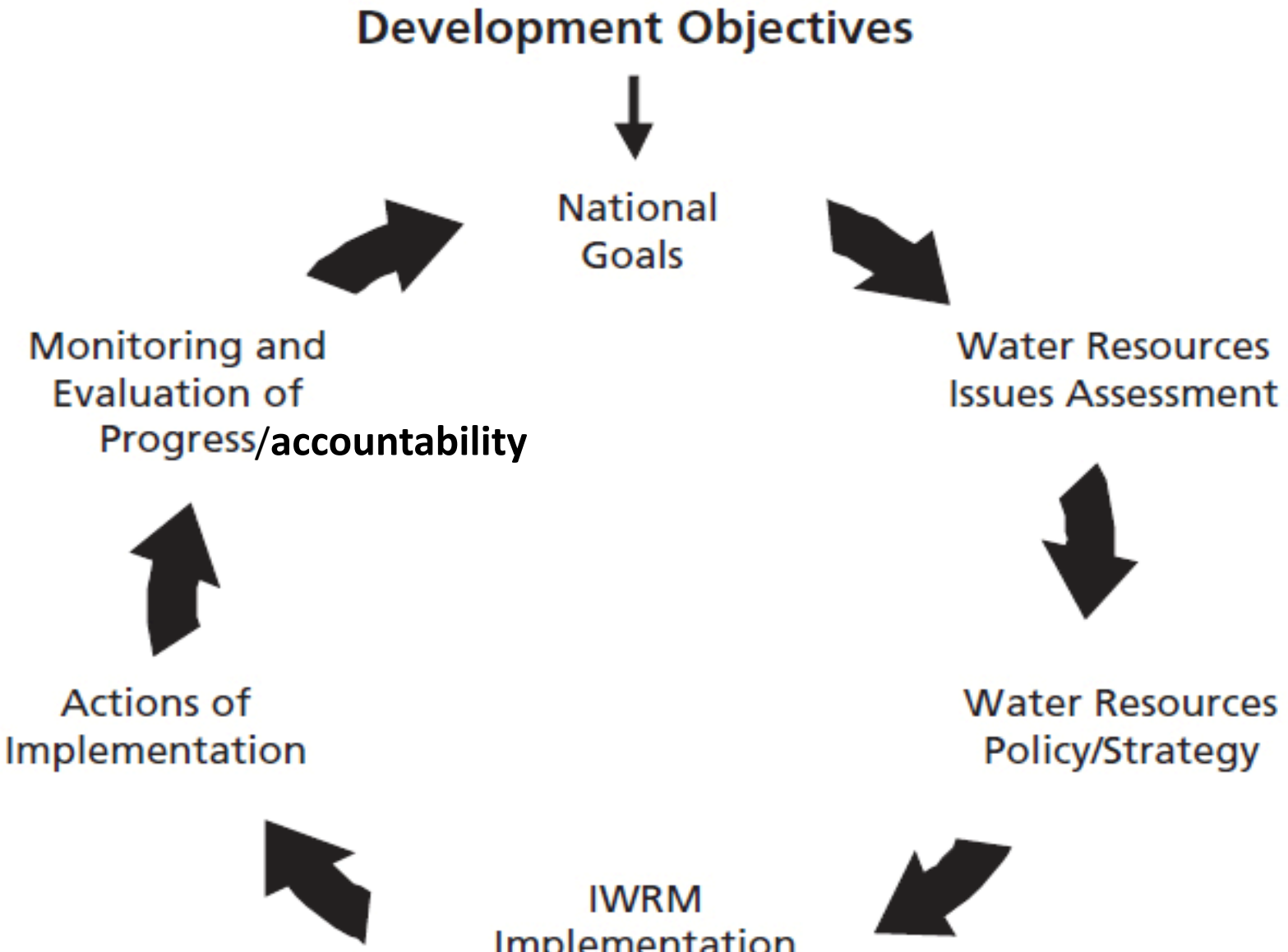

Image adapted from UNDESA 2014
http://www.un.org/waterforlifedecade/iwrm.shtml

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IWRM Achievement in Caribbean SIDS

IWRM Policies and Plans e.g. in St. Lucia, Trinidad and Tobago, Jamaica, OECS Model Water Policy and draft policies in a number of countries

Projects that emphasise IWRM e.g. Global Environment Facility Integrated Watershed and Coastal Areas Management (GEF- IWCAM)

Capacity Building on IWRM and IWRM sub themes by various agencies and Universities

Knowledge exchange fora on IWRM at technical and political levels: GWP-C Annual High Level Forum (HLF) for Water Ministers hosted inpartnership with the Caribbean Water and Wastewater Association (CWWA)

Regional cooperation for IWRM

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Challenges in the Caribbean SIDS IWRM Process

Challenges:

- Governance arrangements within countries are weak;
- Supply-driven management;
- Fragmented and subsector approaches to water management;
- Lack of information;
- Low levels of investment in the water sector.

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Enabling environment for successful IWRM Process

- Awareness raising
- Capacity Building
- Participatory Process
- Institutional Framework

Image adapted from UNDESA 2014
http://www.un.org/waterforlifedecade/iwrm.shtml

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Institutional framework: Case Study Jamaica Water Resources Authority

- The Water Resources Authority (WRA) is responsible for the management, protection, and controlled allocation and use of Jamaica's water resources.

- The WRA maintains a hydrological database and provides data, information, and technical assistance to government and non-government institutions.

- The WRA gives/denies permission for water abstraction.

Institutional Framework: Case Study St. Lucia Water Resources Management Agency (WRMA)

Functions of WRMA

(a) Main function:

To manage the water resources of Saint Lucia.

(b) Specific functions:

- Considering applications for abstraction licenses and permits for use of water in control areas and permits for waste discharge.
- Promoting the sustainability of water resources.
- Developing watershed management plans and facilitating regulation accordingly.
- Undertaking the preparation of water master plans and allocation schemes.

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IWRM and Climate Change

- An IWRM approach results in better water management
- IWRM helps address challenges to water supply and water quality e.g. increased demand, competition
- Climate change is another challenge to the water sector

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IWRM builds climate resilience

Climate Resilience The ability of a social or ecological system to resist, absorb, accommodate and recover from the effects of a (climate) hazard in a timely and efficient manner while retaining the same basic structure and ways of functioning (GWP-C and CCCCC 2014)

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For More Information

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