

United Nations Development Account Project on Developing the Capacities  
of the Arab Countries for Climate Change Adaptation by Applying  
Integrated Water Resources Management Tools

## Overview and Introduction on the Training Modules

Economic And Social Commission For Western Asia



UNITED NATIONS

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ESCWA

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## Developing the Capacities of the Arab Countries for Climate Change Adaptation by Applying IWRM Tools

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This will build upon the climate change impact assessment (RICCAR), and will assist countries to adapt to climate change through the use of regionally-appropriate IWRM tools.

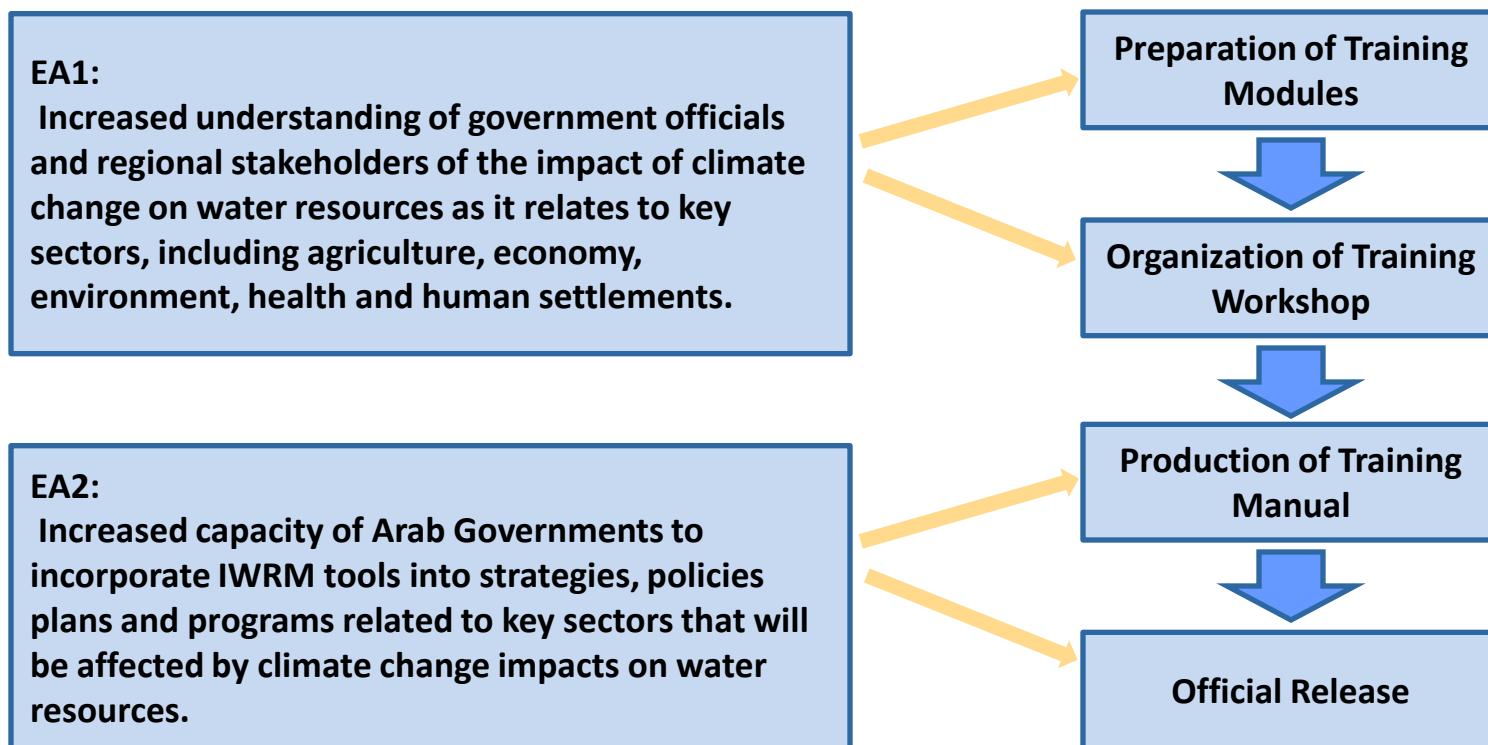
**Objective:** To develop the capacity of Arab Governments to adapt to climate change by applying IWRM tools in the key sectors that will be affected by climate change impacts on freshwater resources

**Duration:** 36 months (July 2013 – June 2016)

**Target** : 22 Arab Countries

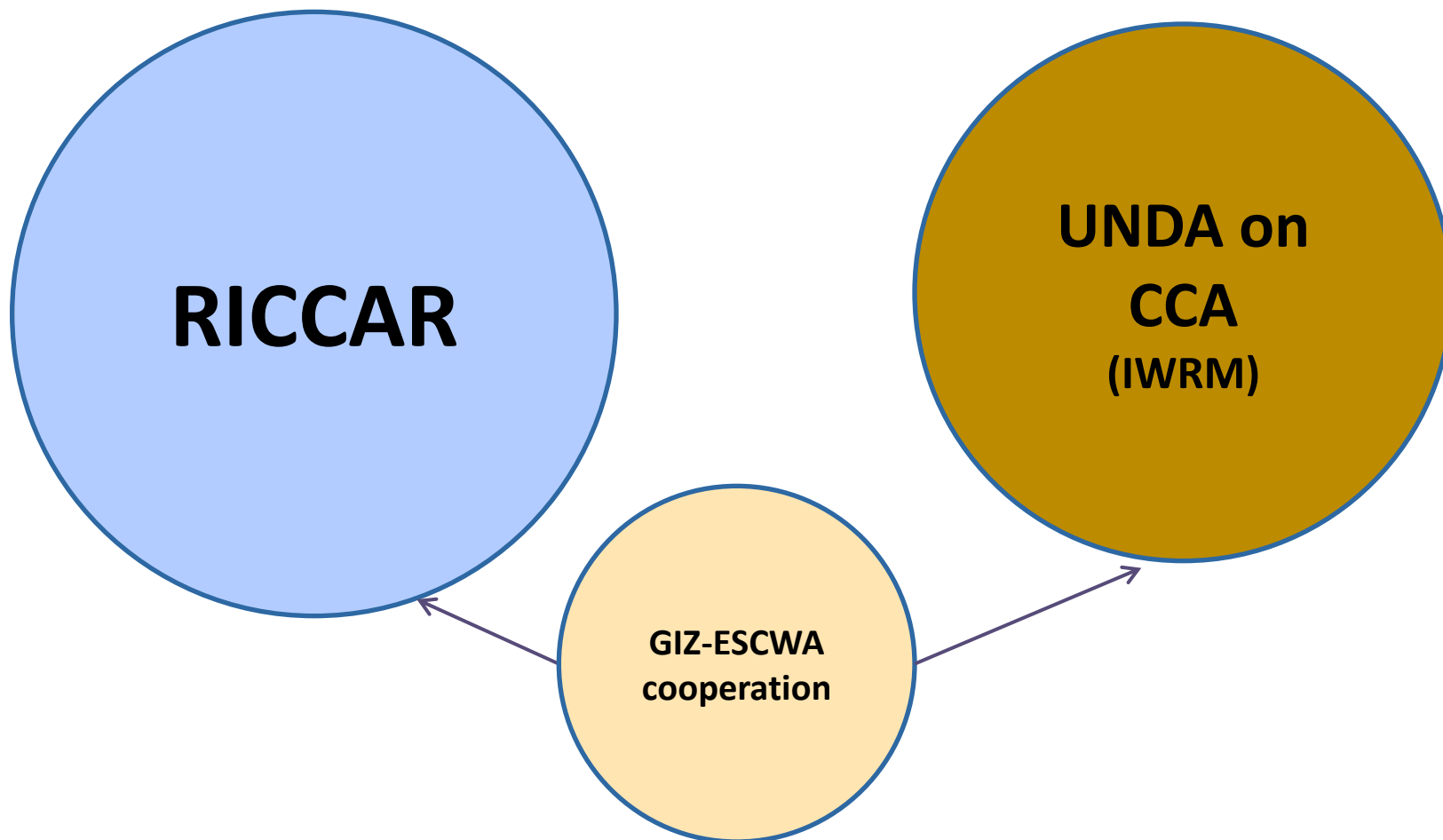
**Partners:** UN-ESCWA (lead agency),  
UNEP/ROWA (coordinating agency),  
ACSAD, ACWUA, WHO/CEHA and GIZ

# Developing the Capacities of the Arab Countries for Climate Change Adaptation by Applying IWRM Tools

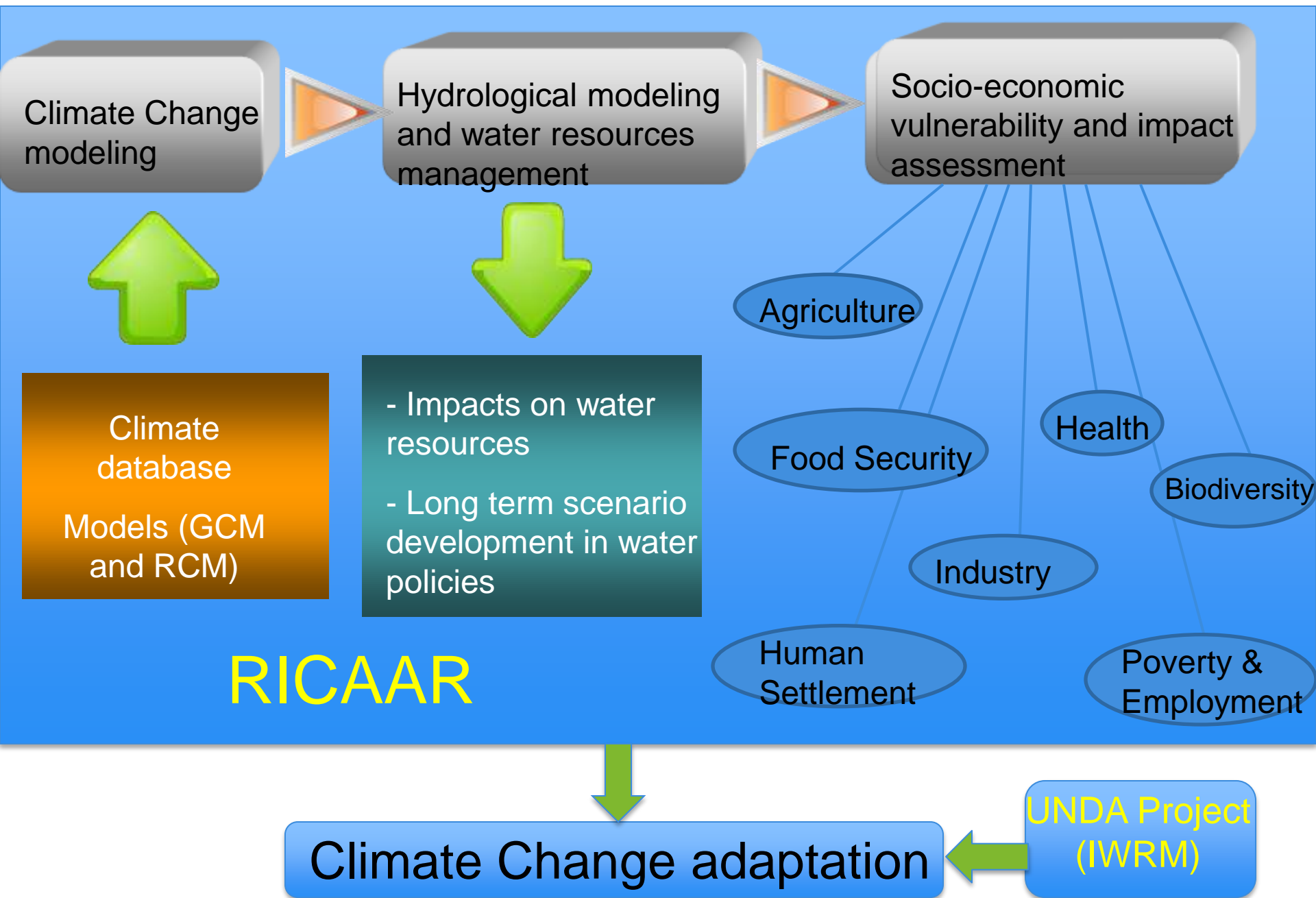


**Impact and Vulnerability  
Assessment**

**Climate Change Adaptation**



# Science – Policy Interface



# Project Activities

**Inception Meeting**

## **Training Modules**

- : 5 training modules on
- 1) Agriculture (ACSAD/GIZ),
  - 2) Economic DV (ESCWA/GIZ),
  - 3) The environment (UNEP/ROWA),
  - 4) Health (WHO/CEHA) and
  - 5) Human settlements/WSS (ACWUA)

**Expert Group Meeting**

## **Training Workshops**

- : 5 training workshops (1 for each key sector)  
For government officials of related ministries and AWARENET members

**Launching**

## **Training Manual**

- : through finalization of training modules that incorporates comments and feedback from partners & participants of training workshops,

## Inception Meeting of the UN Development Account Project on Climate Change Adaptation, Amman, 24 November 2014

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The main objectives of the meeting were to:

- Define the scope of training manual;
- Draft terms of reference for the training modules;
- Discuss the content and format of the training modules;
- Prepare for the training workshops;
- Confirm responsibilities of the partners; and
- Clarify the work plan.



## Inception Meeting of the UN Development Account Project on Climate Change Adaptation, Amman, 24 November 2014

It was confirmed that each partner is responsible for developing their respective training module as follows:

1. Agriculture module by ACSAD/GIZ;
2. Human settlements (water supply and sanitation) by ACWUA;
3. Health module by WHO;
4. Environment module by UNEP/ROWA;
5. Economic module by ESCWA as well as an introductory chapter for the manual with GIZ support.





# Table of Content for the Module

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Each training module should consist of:

## I- Opening section that provides

- Link between climate change adaptation and IWRM with respect to the sector
- Literature review on IWRM tools related to the sector, which could include UNFCCC national communications related to the sector presented in a table
- Review of the impacts of climate change as they pertain to the sector, mainly drawing from RICCAR findings (e.g., for the years 2010 (baseline); 2010-2030; 2030-2050; 2050-2100), including those related to extreme events
- Review of the relevant RICCAR indicators related to the sector
- Review of the governance framework within the sector, including a mapping of key stakeholders and their roles and responsibilities.

# Table of Content for the Module (50 pages)

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Each training module should consist of:

II- Main section that presents tools, response measures and adaptation options that propose:

- Measures for improving governance
- IWRM tools for climate change adaptation for the sector
- Selection criteria
- Screening adaptation measures
- Reference to regionally-appropriate best practices.

III- Concluding section that provides:

- Conclusions and links to other modules
- Reference materials
- Training materials (Annex added to main module)



October 2010



# Agriculture Module (I)

## 1- Introduction

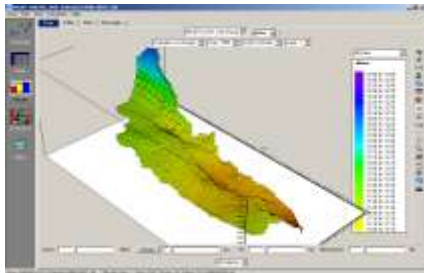
- Objectives
- Methodology
- Targeted stakeholders

## 2- Challenges

- Natural resources
- Socio-economic aspects
- Governance
- Legislations
- Sub-sector issues

## 3- Impact and vulnerability assessments based on RICCAR

- Impacts of CC (T, P, ET, extreme events, etc., projections till 2100)
- Vulnerability assessment (VA) approach
- VA Indicators





October 2011



# Agriculture Module (II)

## 4- Adaptation measures and IWRM options and tools

- Water resources
- Water storage and quality aspects
- Water harvesting
- Rain-fed farming
- Irrigated farming
- Forestry and agro-forestry
- Livestock management
- Pasture management
- Fisheries and aquaculture

## 5- Implementation matrix and areas for action

- Screening adaptation measures
- Stakeholders analysis
- Increasing adaptive capacity
- National and regional actions





# Environment Module (I)

## 1- Introduction

- Objectives
- Methodology
- UNEP vulnerability assessment approach
- Ecosystem Based Management (EBM)

## 2- Impacts on ecosystems and biodiversity

- Projected impacts based on RICCAR outputs
- Examples of hot spots

## 3- Linking Ecosystem management and IWRM

- Analysis of differences and similarities
- Indicators for ecosystem based adaptation

# Environment Module (II)



## 4- Ecosystem adaptation measures

## 5- Areas for action

- Functions of ecosystems
- Processes and structure for supply of services
- Ecosystem state and impact
- Cycle for strategic adaptive management
- Valuing ecosystem services

- Implementation tools
- Monitoring and evaluation
- National and regional actions



# Health Module (I)

## 1- Introduction

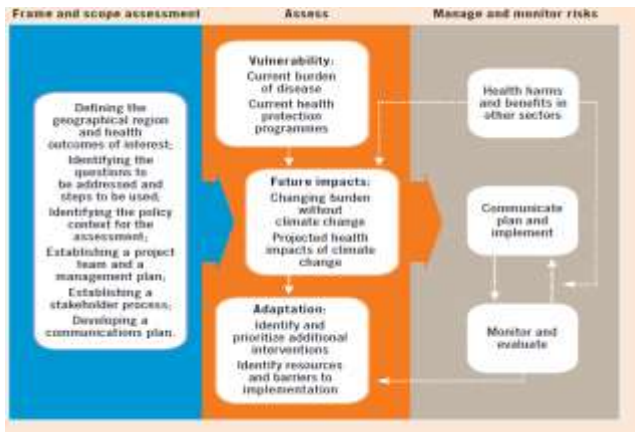
- Objectives
- Target audience

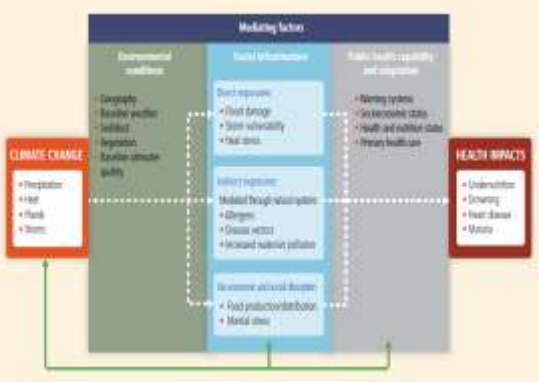
## 2- Impacts on water and health

- Extreme events impacts
- flood related diseases
- Heat wave related mortality and morbidity
- Indirect health consequences
- Vector borne diseases
- Microbiological drinking water quality

## 3- Vulnerability assessment of health sector

- Vulnerability and adaptation using WHO guidance
- Health within the National Adaptation Plan (NAP) process





# Health Module (II)

## 4- Adaptation measures for health sector and implementation

- Institutional and strategic interventions
- Environmental quality monitoring and control
- Awareness and capacity development
- Adaptation implementation matrix
- Institutional analysis methods
- Barriers and opportunities for successful implementation

## 5- Areas for action

- National assessments
- Monitoring process of CC impacts
- Effective adaptation strategies and policies
- Moving from science to policy
- Follow up on adaptation programs at the global policy level



# Economic Development Module (I)

## 1- Introduction

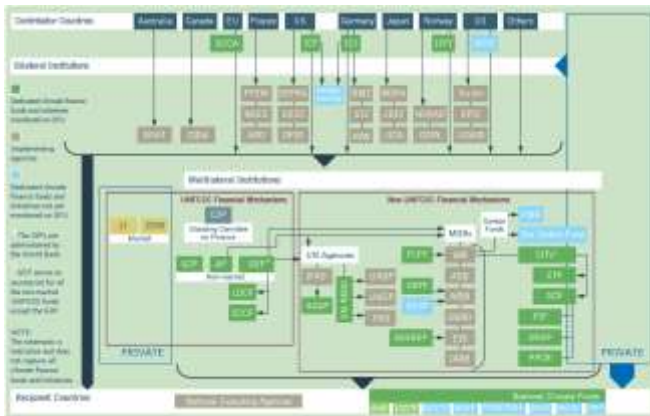
- Objectives
- Structure of module

## 2- Development and resources management

- Macro-economic impacts
- Integrated assessments economic models (IAMs)
- Economic implications of extreme events
- Climate finance
  - Criteria
  - Global architecture

## 3- Vulnerability assessment and economic impacts

- VA integration with IAM's and linkage to RICCAR outputs
- Economic indicators used in VA
- Economic cost of CC impacts



# Economic Development Module (II)

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## 4- Adaptation measures and implementation

- Adaptation risk management
- Climate proofing
- Investment planning
- No regret and low regret measures
- Global and national funds

## 5- Areas for action

- Best practices
- Governance
- Participatory capacity
- Transparency and accountability
- Technical and managerial competence
- Education and training

# Human Settlements Module (I)

## 1- Introduction

- Objectives
- Targeted stakeholders

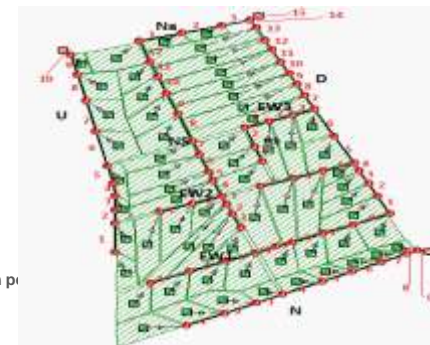


## 2- Framing Sectoral Problems

- Resource challenge
- Intermittent supply
- Enhancing water efficiency at the city level
- Management of storm and wastewater infrastructures

## 3- Vulnerability and impacts assessment

- Drainage networks performance under various climate scenarios
- Impacts on drainage network design



# Human Settlements Module (II)

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## 4- Adaptation measures and implementation

- Water harvesting
- Water demand management
- Reuse of grey water
- Treatment technologies for grey water recycling
- Water footprints tool
- Cutting on the Non-revenue water
- Wastewater reuse and recycle
- Water Tariffs

## 5- Areas for action

- Best practices
- Governance
- Social factors
- Economic factors
- Cost of water adaptation measures

# THANK YOU

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