



**Sustainable Water
Integrated Management (SWIM) -
Support Mechanism**



Project funded by
the European Union

Water is too precious to waste

**Progress on the Cost Assessment of Water Resources
Degradation and Remediation**

**SWIM 3rd Steering Committee,
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General Objective

- To provide the decision makers with the necessary tools for making informed decisions on water resources management at the basin level based on economical cost and benefits and taking into consideration the environmental externalities .
- This objective will be achieved by
 - Putting a monetary value on the consequences of the water resources degradation;
 - Carrying Cost Benefit or Cost Effectiveness Analyses of Remedial Actions and Preparation of Investment Plans.
 - Building the capacity of the decision makers to transfer knowledge, especially with regards to the methodologies used for the preparation of investment plans and;
 - Validating and disseminating the Investment Plans at the Watershed/Basin and National Levels

Basin Selection

Two basins were selected in 2012

- **Morocco-Oum Er Rbia**
River length: 600 Kms
Watershed surface : 48,000 Km²
Population: 5.0 million
- **Tunisia- The Medjerda**
River length: 350 Kms
Watershed surface: 15,930 Km²
Population: 1.3 million

Two basins were selected in 2013

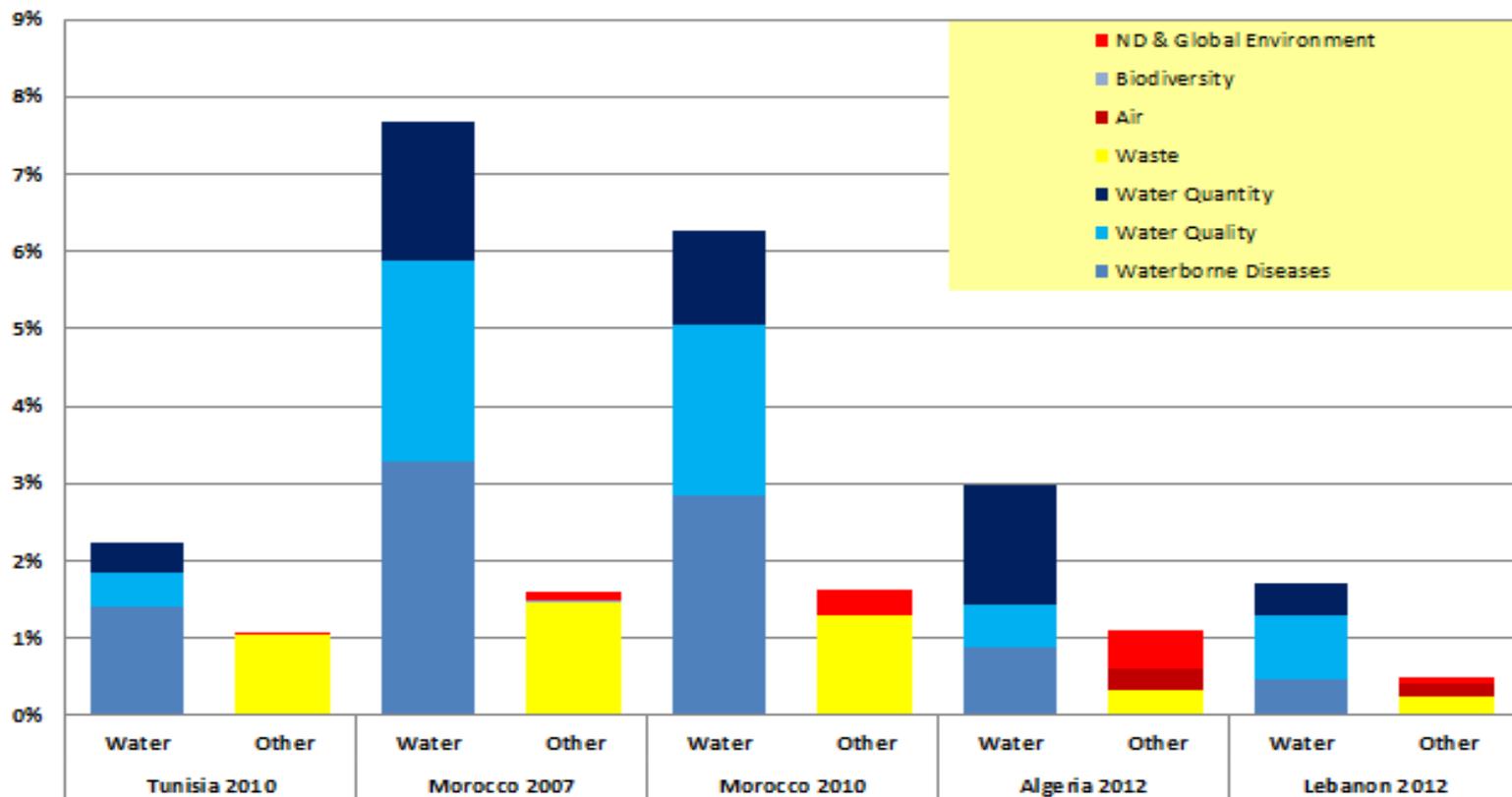
- **Algeria-The Seybouse**
River length: 240 Kms
Watershed surface : 6,471 Km²
Population: 1.6 million
- **Lebanon- The Litani**
River length: 170 Kms
Watershed surface: 2.168 Km²
Population: 1.04 million

Progress To date

Components	Progress to date
Cost Assessment of Water Resources degradation in 4 basins	Achieved
Cost benefit or cost effectiveness analyses of remedial Actions in 4 basins	Achieved
Preparation of Investment Interventions in 4 basins	Achieved
Capacity building	Concept prepared
Dissemination of Investment Interventions and lessons learned	Concept prepared

Results: Cost of Water Resources Degradation of the Four Basins

%CAWRD/Basin GDP



Summary of Water Degradation and Remediation in the Four Basins

	Morocco: Oum Er Rbia River length: 600 Kms Watershed surface : 48,000 Km2	Tunisia Medjerda River length: 350 kms Watershed surface: 15,930 Km2	Algeria Seybouse River length: 240 Kms Watershed surface : 6,471 Km2	Lebanon Upper Litani River length: 170 kms Watershed surface: 2.168 Km2
Cost of water resources degradation	6.3 billion DhM 590 million Euro	191.4 million DT 101 million Euro	27.7 billion DA 258 million Euro	330 billion LBP 165 million Euro
Percentage of GDP of the basin and at national levels	7.9% (Basin) 0.8% (National)	3.3% (Basin) 0.2% (National)	4.1% (Basin) 0.26% (National)	2.2% (Basin) 0.6% (National)
Percentage of degradation due to water and waste water	79.3%	68%	73%	78%
Cost of Remediation over 20 years	7.53 billion DhM 685 million Euro	269 million DT 150 million Euro	13 Billion DA 130 million Euro	671 billion LBP 335 million Euro
Percentage of cost of remediation for water and waste water	76%	55.7%	63%	46/5%

Major Findings

- **General Findings Applicable to the Four Basins**
 - Environment neglect at the basin level is a burden on the national economy of the countries
 - The environmental health bill due to the burden of water borne diseases is significant . Major sources are due to: untreated wastewater especially in the rural areas, poor quality of potable water from the network and private wells and poor hygiene practices
 - Water resources allocation does not reflect the reality of the socioeconomic conditions of the basin. There are no approved water resources master plans at the basin level and no consideration is given to population growth, climate change and environmental flow
 - The fragmented responsibilities between the ministries of water and their respective departments /authorities at the local level in terms of monitoring and enforcement have prevented the efficient development and management of the water and wastewater services.

Planned Activities in 2014

The Consolidation Phase

- **There is a Need to :**
 - Refine the results of the CAWRD and present them in a succinct manner to the policy makers
 - Establish synergies among the Maghreb countries on the CAWRD
 - Extend synergies and lessons learned to countries that did not participate in the assessment of degradation
 - Improve the knowledge on economic valuation to the SWIM Partners Countries

The Consolidation Phase

The Consolidation Phase consists of three distinctive tasks:

- Policy formulation on the basis of the CAWRDs
- The Water-Environment Nexus
- Capacity building

Task 1: Policy Formulation

The Objective is to

- **Review the similarities and differences in the CAWRD of the four countries;**
- **Highlight the policy implications resulting from each of the CAWRD and the lessons learned and;**
- **Propose a conceptual policy and cooperation framework that could be applied sub-regionally at the level of the Maghreb countries**

Policy Formulation (ctd)

- **This task will consist of :**
 - Examination of the four CAWRD reports and summarize the policy actions, the similarities and differences, as well as the lessons learned
 - Identification the policy actions and the proposed investments at the sub-regional level that will be analysed from a cost/ benefit point of view
 - Preparation of policy paper on a conceptual policy framework for collaboration between Morocco, Algeria and Tunisia in implementing the most cost effective joint policy
 - Discussion of the policy paper in a regional dissemination workshop to seek the views on strengthening the water governance at the basin level

Task 2: The Water -Environment Nexus

The purpose of this task is to better mainstream the environment externalities in the integrated water resources management plan at the basin level in one of the four countries for which the CAWRD was prepared.

- This task will consist of:
 - Taking stock of previous work done on the basin in relation with the water sector and the environmental impacts generated by this sector for the different usages.
 - Assessing the current situation in terms of water usage in agriculture and industry, expected growth rate and related pollution emissions, environmental impacts both at the local and national level, on the basis of existing studies and reports.

The Water -Environment Nexus (ctd)

- Preparing a “most likely” demand scenario for the assessment of water supply and allocation options including water pricing, together with their implications on the environment including climate change, on a sectoral basis, paying attention to the agriculture and industrial sectors and environment (environmental flows).
- Determining the most profitable and most attractive water conservation and efficiency practices in agriculture, industry and the environment.
- Developing the recommendations resulting from the study in particular related to the environmental impact of alternative water supply and allocation strategies, taking into consideration the necessary economic instruments to encourage investment in water conservation and efficiency and affordability.

Task 3: Capacity Building

- ❑ The purpose of this task is to provide technical training of practitioners as well as sensitization of policymakers and other stakeholders in the use of CAWRD.
- ❑ Training will consist of theoretical and application of CAWRD and will include 2 -4 case studies on the four basins
- ❑ Two sub-regionals workshop will be organized
 - One for the Maghreb countries in French
 - One for the Mashrek countries in English

Capacity Building (ctd)

- ❑ The target audience includes:
 - ❑ Government staff working on water resources issues with relevant expertise,
 - ❑ Trained economists and environmental/water specialists.
 - ❑ Academics (including post-graduate students) and researchers

- ❑ This capacity building will be carried out in collaboration with the Marseilles Center for the Mediterranean Integration as well as with the Capacity Building/Mediterranean Environment Program (CB/MEP) of Horizon 2020

Beneficiaries of the Consolidated Phase

The Beneficiaries are :

- ❖ **The decision makers and senior technical staff at the Ministry of Energy and Water Resources, Ministry of the Environment and Ministry of Finance**
- ❖ **Senior technical staff of the basin agencies**
- ❖ **Mayors and staff of the municipalities included in the basins**
- ❖ **University professors and Researchers in environment, water and economics**
- ❖ **Local NGOs**

Illustrative Schedule

Months/activity		1	2	3	4	5	6	7	8	9
Policy Paper on Basins	Data collection and Analysis									
	Draft Final Report									
	Final report									
Capacity Building	Preparation of case studies and training materials									
	Consultation workshops in Maghreb and Mashrek									
	Final Report									
Water/Environment Nexus	Data Collection									
	Data Analysis									
	Daft Final Report									
	Final Report									

مع خالص شكري
وامتناني

Thank you
for your attention

Merci pour
votre attention



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