



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



Project funded by  
the European Union

*Water is too precious to waste*

**ECONOMIC VALUATION OF WATER POLLUTION:  
SWIM-SM Suggested Priorities and Key Activities**  
SWIM Launching Workshop, 7 December 2011, Brussels

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# Why An Economic Valuation of Water Resources

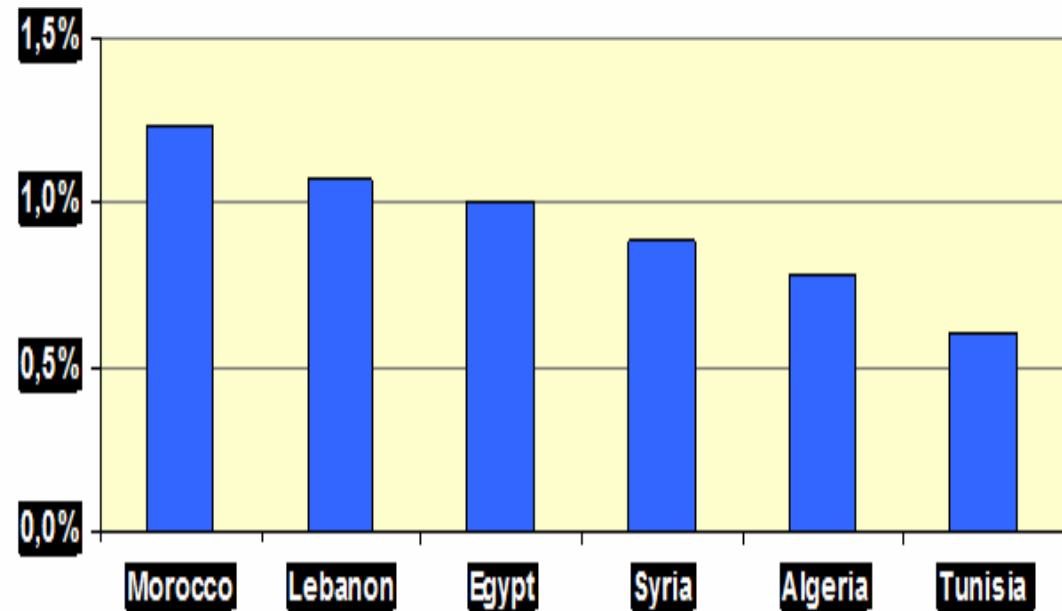
- Limited water supply is unevenly distributed across each of the Partners Countries and intensively used. This has resulted in serious challenges such as increasing degradation and risk of depletion.
- Much of the past interventions have been on investments without a systematic evaluation of the benefits achieved, and without consideration of other investments' alternatives that would generate both economic and environmental benefits.
- It is important to distinguish between the costs due to the inherent scarcity of the resource, and the *increased* costs due to non-optimal use of the resource.

# The Cost of Water Degradation was Estimated

by the Mediterranean Environment Technical Assistance Program (METAP)

EC- financed Project on:  
Social and Economic Benefits of Enhanced Environmental Protection for ENP countries and Russian Federation  
(under publication)

Cost of Water Degradation in MNA



Sarraf et al, Cost of Environmental Degradation, METAP/World Bank 1999-2005

## However, these estimates are limited

- These estimates in terms of orders of magnitude were useful to alert policymakers about the seriousness of the water degradation problem.
- They cannot be used directly to provide an OPERATIONAL response as they did not include the costs and benefits of possible solutions to the watershed degradation problem which would affect the NON OPTIMAL USE of THESE RESOURCES.

# Additional Economical Analysis is required

- Identify and estimate the impacts of water problems on affected uses.
- Estimate the remediation costs for reducing the impacts.

	Agriculture	Fishery	Domestic, sanitation, health	Hydropower	Industry	Tourism	Environment
Salinity							
Waterlogging							
Contamination*							
Sedimentation							

# Why is this important for the Partners Countries : To Make Informed Decisions

- It will provide
  - An overview of the economic aspects of watershed management problems in selected PCs;
  - A useful mechanism to rank the relative social costs of various forms of degradation and cost of remediation;
  - A valuation of the overall benefits linked to different response alternatives (in the selected watershed);
  - An economic analysis of these response alternatives;
- It will improve the investment opportunities of the government at the governorate/watershed/basin and sub-national levels to effectively curb environmental degradation

# Why SWIM-SM should be involved

Because SWIM-SM is required to address:

- **Water Governance and Mainstreaming ;**
  - This pillar will associate the stakeholders and interest groups with the identification of the water issues, and development of remediation plans
  - It will mainstream the environmental costs into the water ,agriculture and irrigation sectors
- **Capacity building**
  - This pillar will build capacity on environmental valuation techniques and methodology
- **Application of water management plans**
  - This pillar will enable costs and benefits to be reflected into water management plans that are prepared by the PCs
  - It will stimulate south-south exchange of information and results particularly in terms of taking decisions based on economic benefits and
- **Development of Communication and Awareness Raising**
  - This pillar will raise awareness concerning the impacts of economic implications of water pollution , and the costs necessary to remediate the degradation of the ecosystem.

# Objective

- The overall objective of the Pillar is to identify with national and local decision makers concrete actions to improve the investment opportunities of the government at national or basin level in order to effectively curb environmental degradation
- This Pillar will address the impacts of water salinity, contamination, water-logging, dam sedimentation and overexploitation of groundwater on the major economic sectors in selected basins



# Economic Valuation of Water Pollution Abatement Interventions

## Specific Objectives

- To update the estimates on the annual costs of water degradation;
- To identify in 1-2 basins in three PCs two priority remedial actions for highly polluted water;
- To build capacity in selected PCs on environmental valuation and;
- To involve stakeholders in the particular basins through consultation to build consensus and dissemination of results at the watershed /basin level.

## TASKS

- Update the Cost of water degradation at the national level
- Estimate the cost of water degradation due to water pollution at the Basin level.
- Cost Benefit or Cost Effectiveness Analyses of Remedial Actions and Preparation of Investment Plans for 1-2 basins in 3 PCs;
- Building the capacity of the decision makers at the sub-national/basin level and the Universities with regards to the methodologies used;
- Validation and dissemination of the Investment Plans at the Watershed/Basin Investment Plans.

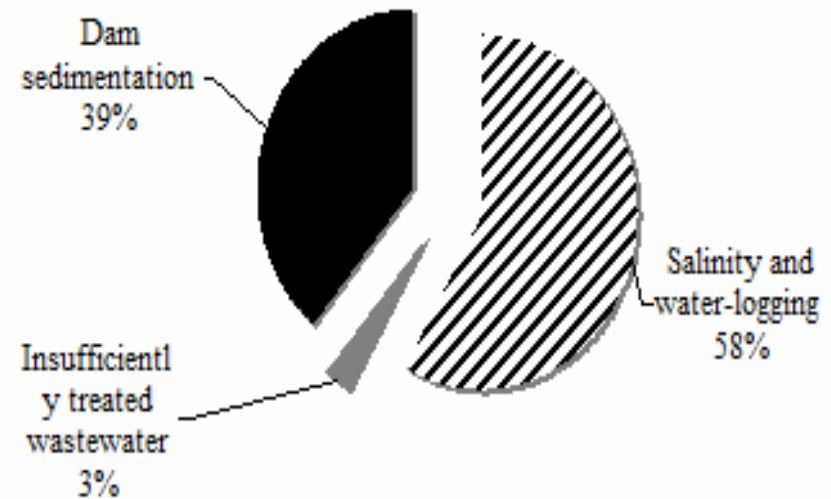
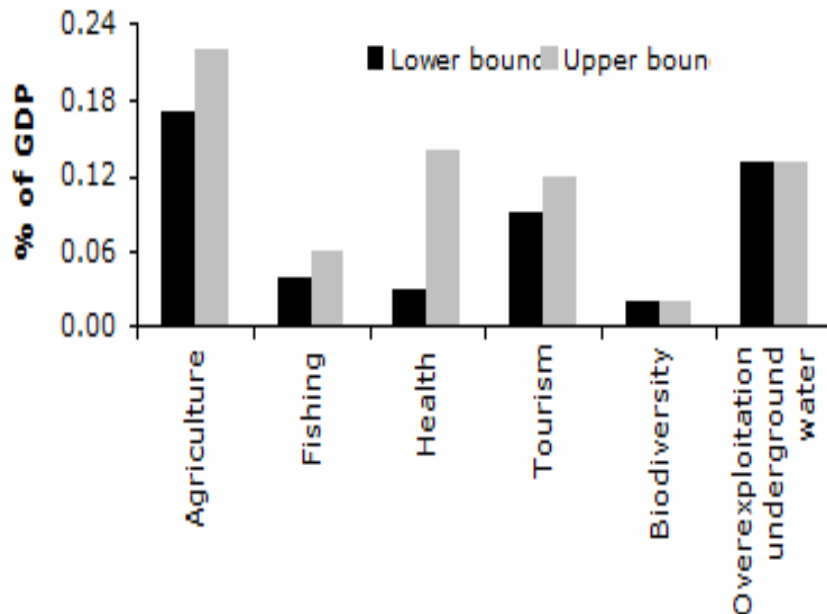
# Methodology

- The cost of water degradation is a measure of the loss in a nation's welfare due to water degradation and depletion. As such, it includes losses at three levels:
  - social, e.g. premature death, pain and suffering from illness due to inadequate quality of drinking water
  - economic e.g. reduced soil productivity due to irrigation with saline water, lower energy production due to dam sedimentation.
  - environmental, e.g. reduced recreational value for lakes and beaches due to water contamination
- It places a monetary value on the consequences of such degradation. This often implies a three-step process:
  - quantifying water degradation (e.g. monitoring water quality).
  - quantifying the impacts of degradation on different water uses (e.g. reduced agricultural production due to water salinity and waterlogging)
  - estimating the impacts in monetary terms (e.g. estimating the cost of soil productivity losses).

# Example: Tunisia

Annual Cost of Water Degradation: 0.6% of GDP or 203 million TD in 2004.

## Impact on Agriculture



# SWIM -SM Proposal For Implementation for the Year 2012

- Update Cost of Water Degradation in two proposed countries : Lebanon and Morocco
- Cost/benefit analyses of investments for mitigating water pollution in selected river basins in four countries (Lebanon , Morocco, Tunisia and Israel)
- Documenting Existing Practices used by Morocco and Tunisia using economic valuation for decision making in the water sector
- Regional training on the economic valuation of river pollution
- Terms of reference were already prepared and awaits EC approval
- Selection of consultants is on going

مع خالص شكري  
وامتناني

Thank you  
for your attention

Merci pour  
votre attention



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