



Sustainable Water
Integrated Management (SWIM) -
Support Mechanism



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Water is too precious to waste

**EXPERT GROUP MEETING ON CUMULATIVE ENVIRONMENTAL IMPACTS OF
DESALINATION ON THE MEDITERRANEAN. Brussels 23 June 2014.**

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Factors for Opting to Desalination Options in SWIM Countries



➤ Desalination in SMCs should be considered only after less expensive options including recycling and conservation are exhausted.

➤ Prior opting to desalination option an opportunity cost analysis including societal cost need to be undertaken to compare cost of desalination versus:

1. Cost of water conservation, reuse, recycling, modern irrigation techniques, etc.
2. Cost of water resources reallocation (eg. agriculture to supply).
3. Cost of improving compliance and enforcement with water legislations (non-revenue water, pollution control, etc.)
4. Cost of activating economic instruments such as incentives/disincentives, application of service cost recovery, etc.
5. Reduction in virtual water exports (rice, cotton, cane sugar, etc.)

FACTORS TO BE CONSIDERED

Effective opportunity cost analysis should take into account the following:

- 1- Socio-economic & environmental cost and benefits of desalination should include externalities such as:**
 - (1) Cost of potential environmental health, and
 - (2) Ecological and environmental costs of air emissions, brine discharge, etc.

2- Job creation is an important element in any type of investment, this is particularly important to factor in when calculating the benefits of technical and allocative efficiency. This is due to the potential number of jobs that are likely to be created in the chain of activities associated with different options.

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- A successful desalination project should manage to recover its running costs & depreciation. This necessitates that the water pricing reflects the real costs of water supply. On the other hand, access to safe drinking water should be available & affordable to all.
 - The main challenges facing financial sustainability of desalination in many SWIM PCs are:
 1. The low income of consumers.
 2. Limited financial resources.
 3. High investment costs required for such projects.

ELEMENTS OF AN OPPORTUNITY COST

1- Technical efficiency

Before opting to desalination, the foregone benefits (opportunity cost analysis) for investment in desalination versus other options need to encompass:

- (1) Improving water governance,
- (2) Developing better legislative framework,
- (3) Enhancing monitoring & enforcement capacities
- (4) Application of Incentive-disincentive system,
- (5) Improving public awareness on water conservation
- (6) Involving the public & participation,
- (7) Human resource development, etc.



(8) Reducing NRW.

(9) Construction of storage and recycling facilities,

(10) Application of modern irrigation techniques,

(11) Promotion of wastewater treatment, reuse and recycling,

(12) Restoring natural ecosystems that promote water conservation and provides purification services.

Allocative Efficiency

Prior opting to desalination, opportunity cost analysis should consider allocative efficiency that entails the reallocation of water resources among competing sectors to maximize the socio-economic returns without jeopardizing the quality of the natural environment.

- **Virtual water** is an important tool that should be utilized in assessing **technical and allocative efficiencies**.
- Selecting low-water content products to grow locally and import high-water content products optimizes the use of available water resources and increases water availability in the country.

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1. Desalination should be considered only after less expensive technical efficiency (demand management interventions) & allocative efficiency (efficiency with which society allocates its water resources among sectors for sustainable socio-economic development) are exhausted. Options such as water conservation, reallocation among sectors, water transportation, changing crop patterns, innovative irrigation techniques, reduction of NRW, etc. should be considered first.
 2. Opportunity cost analysis, including the socio-economic & environmental externalities, should be used as a analytical tool to select among different alternatives.
 3. In case desalination is decided, it has to be subject to EIA study according to the national policies & guided by the internationally recognized criteria & procedures.

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Thank you
for your attention

Merci pour
votre attention



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