



**CONCEPT NOTE ON DESALINATION
ACTIVITIES PROPOSED FOR SWIM-SM 2014 PLAN OF ACTIONS**



1 PREAMBLE:

Water resources are heavily exploited in PCs, with rapid population growth, environmental degradation, climate change impacts; it is no longer possible to satisfy water demand by attempting to increase supply. It became evident that non-conventional water resources are an absolute necessity if countries are to bridge the gaps between supplies and demands. Further to plans for the full exploitation of treated wastewater reuse, desalination using RESs emerged as a techno-economically feasible option that needed further investigation.

Within such context, SWIM-SM developed and implemented its 2012 plan of action to include the following:

1. A review of the Best Available Technologies (BAT) suitable for countries of the region with a special focus on desalination for rural areas. The main objective was to produce a report reviewing and compiling the BAT that can be catered to the specificity of countries of the region to supplement water supplies to remote communities either on the coastline or inland using Renewable Energy Systems (RESs).
2. Establishment of a Core Desalination Group (CDG). In an effort to ensure the quality and credibility of its views and orientation, SWIM-SM formed the CDG composed of internationally renowned experts to advise SWIM-SM with the involvement of National desalination experts on the validity and integrity of SWIM-SM produced reports and to suggest policies options to pave the way for a more sustainable desalination in the region.
3. Convened an Expert Group Meeting in 2012 in Athens to review, discuss and validate the findings of SWIM-SM assessment on the subject, to advise SWIM-SM on state-of-the art development in the field of desalination using RESs and to discuss with SWIM-SM team and National desalination experts regional orientation towards desalination in addition to future activities in support of promoting sustainable desalination in the region.
4. Produced a report on the economic aspects of desalination entitled "Economic considerations for planning desalination in South Mediterranean Countries". The report aimed at compiling information for raising awareness of decision makers in PCs on less expensive alternatives to desalination and developed a guideline to conceptually undertake an opportunity cost analysis prior to planning and deciding on desalination projects within a strategic IWRM framework.

In 2013 SWIM is implementing the following activities:

1. Organization of a capacity development workshop on modeling the cost of desalination 2013 in Oman, in collaboration with MEDRC, to predict the cost of desalination based on scale and technologies used. (Completed)
2. Assessment of potential cumulative environmental impacts of desalination plants conglomerating around the Mediterranean in synergy with MED-POL. (Underway)



3. Convene a regional Expert Group Meeting in Athens on Potential Cumulative Environmental Impacts of Desalination Plants on the Mediterranean Sea to substantiate and verify the outcomes of activity 3.4.1. In synergy with UNEP-MAP, MED-POL, H2020, MEDRC.(Planned for February 2014 after completion of assessment of cumulative environmental impacts).

2 ORIENTATION FOR 2014:

Based on the outcomes of the 2012 & 2013 activities, views and recommendations of the CDG in addition to priorities identified by national experts during the expert group meeting held in Athens on 12 & 13 of June 2012, and the preliminary data available from the assessment of cumulative environmental impacts of desalination underway, SWIM-SM is able to orient itself to make a valid contribution in addressing the needs of its PCs in its future plan of actions for the year 2014.

This orientation is intended to ensure continuity by taking stock from results and recommendations emanating from first two years program implementation and through synergy with partner organizations dealing with the issue to guarantee complementarities. Importantly, the guidance expressed by National Focal Points (NFPs) at different occasions including the SWIM-SM Steering Committee Meetings and the opinion of EU Delegations (EU-Del) at the national level were considered in proposing the 2014 plan of actions to include desalination activities of concern to the region.

3 OBJECTIVES OF PROPOSED DESALINATION ACTIVITIES FOR 2014.

The overarching objective of the desalination activities proposed for the year 2014 is to advance sustainable development through sustainable desalination within an IWRM context after exhausting all water demand management options.

Specific objectives for 2014 activities can be listed as follows:

1. Achieve a consensus by convening a high-level techno-political policy dialogue, possibly in Brussels, to debate the prospects of desalination around the Mediterranean Sea basin in light of on-going and future plans as well as expert's opinion on potential cumulative environmental impacts of seawater desalination in collaboration with MED-POL, EBD, UfM, etc.
2. Build capacity of seawater desalination officials on state-of-the-art practices in desalination using renewable energies through 3 days training workshop followed by 2 days study tour in an advanced desalination center using Concentrated Solar Power (CSP) in Europe.

4 PROPOSED ACTIVITIES:

In order to materialize the abovementioned objectives, SWIM-SM is proposing to undertake the following activities:



ACTIVITY I: Convene a high-level techno-political policy dialogue in Brussels to debate the prospects of desalination on the Mediterranean Sea.

Objectives: The main objective of the activity is to reach a consensus by convening a high-level techno-political policy dialogue, possibly in Brussels, to debate the prospects of desalination around the Mediterranean Sea basin in light of on-going and announced desalination plans in the region as well as regional and international expert's opinion on potential cumulative environmental impacts of seawater desalination.

Approach: This regional policy dialogue will take stock from the 2012 & 2013 assessments, data and results achieved by SWIM-SM program. The dialogue shall be attended by high-ranking water policy makers, high-level representatives of national environmental authorities, national planners, SWIM-SM Core Desalination Group (CDG), national experts, parliamentarians, up to four regional NGOs with expertise on the involved subjects and 4 academicians from relevant disciplines. This activity will be coordinated and synergized with relevant regional and international organizations such as MED-POL, Union for the Mediterranean's (UfM), European Bank for Development (EBD), European Investment Bank (EIB), World Bank (WB), Middle East Desalination Research Center (MEDRC), European Desalination Association (EDA), International Desalination Association (IDA), etc.

In addition to the nine SWIM-SM PCs, the regional dialogue might be enlarged to include European countries on the Mediterranean Sea such as Spain, Greece, Cyprus, France, Malta, etc. with plans to desalinate Mediterranean seawater as well as experts from the Gulf countries and Australia that have vast experience on the subject.

The dialogue will encompass the following issues:

I- Available water resources & demand characteristics in the Med Region, and management options

For any plan for desalination in a specific country or area, there is a need for a comprehensive evaluation of the available water resources, as well as an evaluation of the water demand characteristics at the proposed site(s) as a first step, with the aim of ensuring that all options are exhausted prior to deciding on desalination. The added value of promoting environmentally and financially sustainable non-conventional water resources management options before and or while employing desalination solutions will be discussed. The on-going and planned national desalination plans in countries of the region will be also presented.

II- Candidate desalination processes based on available water resources and Renewable Energy Sources adaptable to the region:

This session shall entail technical discussions to indicate appropriate policies to employ the most compatible desalination technology and the type of renewable energy sources.

III- Sustainability of desalination with special focus on cumulative impacts on the marine environment:



To discuss policies for the inclusion of the cumulative environmental impacts (primarily from the discharge of brine to the Med Sea) resulting from planned desalination plants in National Strategic Environmental Impacts Assessment policies including the use of renewable energy sources available in the region.

IV- Regional desalination policies:

To discuss the need for a regional desalination vision and to define the approach that should be used to formulate this vision including the identification of potential partners, structure & functions of the organizing entity.

V- Identification of capacity development needs:

To discuss capacity development needs to ensure sustainability of desalination practices in the region.

ACTIVITY II: Convene a capacity development workshop (3 days) followed by a study tour (2 days) on state-of-the-art practices in desalination using renewable energies.

Objectives: The main objective of this activity is to build the capacity and expose desalination decision makers on state-of-the-art practices in desalination using renewable energies through 3 days training workshop followed by 2 days study tour in an advanced desalination center using Concentrated Solar Power (CSP) in Europe (most likely Spain).

Approach: The capacity building workshop and study tour shall be attended by water policy makers, representatives of national environmental authorities & two regional NGOs. This activity will be coordinated and synergized with relevant regional and international organizations such as MED-POL, MEDRC, etc.

The capacity building will start by 3 days training workshop in a reputable institution in a European Country (Spain) recognized for its advancement in developing and applying desalination using CSP and other renewable energies. The three days workshop shall be followed by two days study tour in the country to demonstrate the maturity and operation of the sustainable desalination systems in operation using different renewable energy technologies with a focus of desalination technology. The workshop will provide the necessary understanding, why CSP has an outstanding meaning for future sustainable sea water desalination utilizing renewable energies. It will also include sustainable desalination aspects such as planning, management, technology, legal issues, funding models, etc. Prior to addressing CSP desalination issues, technical subjects such as energy demand of desalination (RO, MSF), energy demand in perspective, environmental implications of energy use, air pollution and thermal pollution and impact mitigation shall be addressed.