



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



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Water is too precious to waste

NON-CONVENTIONAL WATER RESOURCES MANAGEMENT: SWIM-SM Suggested Priorities and Key Activities

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WHAT ARE NCWRs?

1. Adequately treated domestic, municipal & industrial WW for agriculture, reforestation, beautification, etc.
2. Recycling of agricultural runoff.
3. Rain water harvesting.
4. Desalination of brackish near-surface ground waters (mostly inland) or seawater on coastlines.
5. Cloud seeding.
6. Inter-basins transfer including towing glaciers from North Pole, importing water via pipelines, Medusa Bags, tankers or barges.

WHAT ARE THE CHALLENGES TO NCWR IN PCs?

Policy constraints: NCWRs are not usually part of national water policies in PCs.

Institutional constraints: There is a multiplicity of ministries & agencies involved in treated wastewater use, desalination, etc, with conflicting objectives & overlapping responsibilities.

Legal constraints: There is lack of appropriate regulatory framework to institutionalize the use of non-conventional water resources in a comprehensive manner.

Technical Constraints: The technical capacities related to programming, planning, implementing & operating NCWRs projects are limited.

Social Constraints: The social dimension for acceptability by users is overlooked.

Economic Constraints: Weak incentives for PPP, financing, etc.

Environmental Constraints: The environmental, health impacts & associated risks aren't carefully studied or mitigated in many of the PCs.

WHAT WAS THE RECOMMENDATION OF PCs?

- During fact finding missions, most PCs expressed serious interest in NCWR as a key solution to resolve the water crisis & restore demand-supply balance.
- All PCs were aware of the NCWR options, however, they identified WW reuse including groundwater recharge & desalination as their main focus of interest.
- PCs recommended SWIM-SM to focus its support on desalination & WW treatment & reuse in rural areas through technical assistance, policy guidance, capacity development & awareness.
- SWIM-SM reacted by adopting the PCs views & developed a thematic pillar entitled “NCWR”.

I - WASTEWATER TREATMENT & REUSE

- Traditionally, WW collection, treatment & discharge were considered as an environmental health protection issue in PCs.
- Due to water scarcity in PCs, WW reuse (either raw, inadequately treated or treated) is widely used by farmers for irrigation regardless of its environmental & occupational hazards.
- SWIM overall strategy is:
 1. To minimize the environmental impacts of WW reuse by promoting Best Available WW Treatment Technologies.
 2. To maximize the safe WW reuse including ground water recharge & the inclusion of adequately treated WW into the national water budget.
- In order to achieve acceptability & ensure applicability, SWIM-SM plans to give adequate consideration to the socio-economic, technical, cultural, educational & environmental specificities of the PCs.

II- DESALINATION

1. In order to maintain an adequate level of water supply most of SWIM PCs have ambitious investment plans to fill the water demand/supply gap through desalination.
2. Nevertheless, desalination should be considered only after all WDM options & best water management practices are totally exhausted.
3. Due to its environmental impacts, desalination of seawater based on fossil fuels in particular, is neither sustainable nor economically feasible (as fossil fuels are depleting & becoming more expensive).
4. Desalination isn't the ultimate solution to water scarcity, it remains as one piece of water resources management puzzle that should be addressed as a component of national water resources management within an IWRM context.

WE NEED TO THINK OUT OF THE BOX

- Desalination requires a change in paradigm by using sustainable energy resources & controlling environmental impacts.
- Fortunately, most PCs have a dazzling potential for solar energy. Solar energy such as CSP, PV cells, etc. to power seawater desalination are tested & appear to be techno-economically feasible.

OBJECTIVES OF THE NCWR PILLAR

- To assist the SWIM PCs in:
 1. Enhancing the policy, institutional & legal framework for the management of NCWRs within IWRM context.
 2. Strengthening the institutional capacity & public participation for the planning & management of these resources.

Components of NCWR pillar Include

1. Strategy formulation for the use of NCWRs.
2. Improving the legal framework in order to anchor the use of NCWRs.
3. Developing the institutional framework for NCWRs for its management with stakeholders' participation,
4. Enhancing the environmental & social safeguards for the use of NCWRs.
5. Developing capacity & awareness to increase knowledge on technologies & promote social acceptance.



PROPOSED ACTIVITIES FOR FIRST YEAR

WP1: Water governance & mainstreaming,

Activity 1:

1. Targeted technical assistance for the elaboration of a WW Strategy or Action Plan for Egypt & Morocco.
2. Provision of support to the 2 countries for identifying missing elements in their WW Strategy through the preparation of a gap analysis & recommendations report.
3. Organisation of a one day national consultation meeting involving all stakeholders in each country.

Expected output: Targeted elements of WW strategy in the 2 countries advanced with a view of sharing knowledge among SWIM countries as follow-up.

WP1: Water governance & mainstreaming,

Activity 2:

1. Organise one Workshop (16 September, in Greece) to discuss the draft concept note prepared by SWIM on for sustainable NCWR management, including desalination using renewable energy (done), and
2. Convene a Regional Expert Group Meeting to advise on the state of knowledge of desalination in the Med & its commercial application using renewable energy, as well as the measures for averting environmental impacts.
 - Expected output:
 1. Enhanced Concept Note on NCWR with participants' input,
 2. A conceptual report on state of art, commercial application & environmental impacts of sustainable use of desalination using renewable energy elaborated

WP2: Capacity Building

- Regional training on innovative & adaptable technologies for treated WW reuse, including the recharge of aquifers & sustainable desalination by:
 1. Convene 4-day regional training in Tunisia targeting 24 technical staff from PCs on WW BAT & organize one day field trip (5th. day)
 2. Convene 4-day sub-regional training in Israel for 21 technical staff from Jordan, OPT & Israel on NCWR & organize one day field-trip (5th. day)
- NB: These activities will be in coordination or joint organisation with H-2020 CB/MEP for potential combination and/or increase in the number of beneficiaries of trainings.

WP3: Application of water management plans

- Assessment of BAT, technical & economic potentials related to WW reuse including aquifer recharge & desalination at regional level & their potential application at national level:
 1. Conduct an assessment on the above issues & provide recommendations on how to integrate the NCWR into the water management plans.

Expected output: practical & easy-reference document on BATs, their use & applicability

WP3: Continued

- Preparation of sector(s)' guidelines on the applicability of the above-mentioned BAT within national water plans.
- Based on the BAT assessment, sector-specific guidelines on treated WW including aquifers recharge, desalination & utilization of treated WW in agriculture will be prepared to provide direct input to existing or evolving national water plans & benefiting from the regional exchange of experiences.

WP3: Continued

- Actively participate with substantive inputs in the Regional Conference on Advancing NCWRs Management in the Mediterranean.
(Done)
- Organise back-to-back the SWIM-SM Workshop on Sustainable Use of NCWRs.
(Done)

WP 4: Identification of good practices & success stories in the region & elsewhere

1. Documentation of successful interventions in selected countries with regard to increased efficiency & effectiveness of WW reuse.
 - Expected output: Successful interventions in Egypt, Israel, Jordan, & Morocco are documented.

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وامتناني

Thank you
for your attention

Merci pour
votre attention



*For additional information please contact:
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