Egyptian-Jordanian Exchange Workshop
Decentralized Wastewater Treatment and Reuse

August 20-21, 2014
Dead Sea-Jordan

Summary Report

Workshop Objectives

The Egyptian-Jordanian Exchange Workshop aimed at enabling an exchange of experiences between Jordanian and Egyptian policy makers on the topic of decentralized wastewater management (DWWM). A special emphasis was placed on challenges and lessons learnt regarding technical, socio-economic and political aspects. Acknowledging the rich pool of expertise present at the workshop, the Open Space method was chosen to encourage participants to choose and discuss the topics that they esteemed most relevant within the context of DWWM.
The workshop also aspired to building cooperation bridges between wastewater management specialists from both countries in order to continue the exchange as strategies in both countries roll out.

Workshop Introduction

In his opening speech, Dr. Ismail Al Baz, senior project manager, briefly stated SWIM achievements, while placing special focus on the recently built treatment plant at the headquarter of the Jordanian Public Security Directorate. Afterwards, the floor was given to Eng. Ali Subah, the Assistant Secretary General for Technical Affairs of the Ministry of Water and Irrigation, who, in a few words, described the Jordanian sanitation strategy. Engineer Subah affirmed that Jordanian policy makers recognize decentralized sanitation as a sustainable and feasible approach for the management of domestic wastewater produced especially in areas where centralized solutions are not feasible, such as for some semi urban and rural communities. Engineer Subah also addressed the challenges facing the implementation of DWWM, especially those related to social aspects.

In an attempt to guide participants to discuss concrete solutions for the upscaling of DWWM in Jordan and Egypt, the workshop facilitator, Dr. Kassab launched the exchange session with a brief presentation highlighting a general definition of DWWM, broad challenges and opportunities as well as several case studies from Jordan and Egypt. As a basis for discussion, Dr. Kassab summarized the constraints into these four groups:

- Managerial and operational constrains,
- Institutional constraints,
- Eonomic constraints, and
- Social constraints.

Common understanding of Decentralized Wastewater Management (DWWM)

In the spirit of the Open Space methodology, participants were requested to select the topics of discussion they esteemed most relevant to both country contexts. However, before proceeding participants agreed to first come to a common understanding as to what DWWM actually stands for and what it comprises.

Different criteria were suggested by participants. However, participants eventually agreed that it is very difficult to identify criteria that can be adopted over the whole region and it was conformed that a sanitation system can be considered a decentralized system if:

"The generation, collection, treatment and reuse of wastewater are carried out within the boundaries of a community"

Participants further agreed on the following criteria that qualify a sanitation system as 'decentralized':

- It serves a population of less than a 1000 capita or a population of 1000-5000 capita.
- The chosen treatment technology is simple and low cost
- The treatment plant is located close to the source of wastewater generation.
- The system is managed by a local community.
- The area serviced is not connected to a centralized WWTP
- The collection system incorporates a minimum number of wastewater lifting stations.
- On-site reuse options exist.

Key topics in DWWM

Following a discussion on the definition of DWWM, participants identified five thematic areas pertinent to the upscaling of DWWM in both countries;

1. Technical aspects: Treatment technology selection, capital and operation costs, land availability, operation complexity and sludge production and handling.

2. Operation and maintenance (O&M) aspects: Responsibility for operation and maintenance, skills for O&M, secure funds for O&M development for operational manual for most widely used treatment technologies.

3. Regulation and legislations: Effluent quality for discharge into water courses or reuse, fragmentation of responsibilities and WWTP site selection.

4. Capacity Development for plan, design and operation of decentralized systems.

5. Sustainability plan: Measures needed to secure sustainability

Extensive discussions took place to select the most critical topics among the above chosen ones. Eventually, participants decided that all suggested topics could be grouped into two main umbrella headlines:

- Topic 1: Operation and Management

- Topic 2: Institutional arrangement

Accordingly, participants were divided into two groups to discuss the challenges, opportunities and key players encountered within each topic.

Group discussions

Operation and management group

Discussions within this group resulted in stating four main challenges:

i. Financial resources for capital investments and operation costs.
ii. Delineation of responsibilities and authorities of different parties associated with decentralized sanitation, e.g. ministries, utilities, municipalities, NGOs, local community, etc.
iii. Availability of technical, operational and managerial skills.
iv. Operational upsets due to illegal discharge of industrial wastewater, olive mill wastewater, slaughterhouse wastewater and septage.

Nevertheless, opportunities to face these challenges present themselves in:

- Soft loans
- Community participation
- Municipality funding for operation and maintenance
- Investments in reuse projects and potential energy recovery

→ For limited financial resources

- Participatory planning for early development of responsibility framework.
- Involvement of private sector, NGOs and municipalities.

→ For indistinct delineation of responsibilities

- Strong capacity building and technical training programs

→ For limited availability of technical, operational and managerial skills

- Enforcement of the law, penalties

→ For operational upsets

Participants identified key stakeholders for this field as follows:

For Jordan: Ministry of Water and Irrigation, the Water Authority of Jordan, the Jordan Valley Authority, municipalities, the private sector and international development agencies

For Egypt: The Holding Company for Water and Wastewater (HCWW), national organizations for potable water and sanitation and municipalities.

Institutional arrangements

Discussions within this group resulted in stating five main challenges:

- Lack of coordination
- Conflict between legislations.
- Need for institutional capacity building.

- Absence of documented local technical experiences.
- Requirements for full environmental impact assessment for each project regardless of the scale.

As for the opportunities available to face these challenges, group members identified the following:

- Availability of applicable technologies that are characterized by low capital and operational cost, simplicity in operation and applicability at small and medium scales.
- Availability of local expertise in construction.
- Political willingness for proper implementation of DWWM.
- Technical, managerial and financial support from international development agencies.
- Existence of national cross-sector platforms.

Key stakeholders to involve in this field are:

- Ministry of Water and Irrigation
- Ministry of Agriculture
- Ministry of Health
- Ministry of Environment
- Municipalities
- Private sector (technology providers)
- NGOs
- International development agencies
- Farmers' unions

Furthermore and in an attempt to set general guidelines for sustainable decentralized sanitation projects, group members ascertained on the following points:

- The necessity for knowledge and experience exchange, on local and regional levels.
- Development of workable legislative framework.
- Development of national multi-sector steering groups.
- Enhancement of scientific research on decentralized sanitation.
- Intensification of local market support.
- Simplification of EIA requirements.

Workshop evaluation

At the beginning of the workshop, participants were asked to state their expectations for the workshop and share them. Expectations can be summarized as follows:

- Experience exchange on DWWM technical aspects.
- Experience exchange on decentralized sanitation legislative, regulative and monitoring aspects.
- Experience exchange on pilot and full scale decentralized projects.

Feedback from participants showed that although the discussions and workshop exercises touched upon all of the above aspects, more exchange meetings to further

delve into these topics in more detail are needed and were welcomed by all. Strong recommendations were given for organizing a follow up workshop to proceed with discussions on legislative and managerial aspects and to exchange full and pilot scales experiences.

*Side note from the project: The conference 'Sustainable Integrated Wastewater Management in the Mediterranean', which will be held on the 1-2 of December in Sharm El Sheikh will provide a platform for further discussions in this field. For further information, please consult the project's website at: http://swim-sustain-water.eu/