



SWIM- Sustain Water MED: *Network of Demonstration Activities for Sustainable Integrated Wastewater Treatment and Reuse in the Mediterranean*

SWIM-Sustain Water MED
Demonstration Project in Jordan

Regional Training Course

***Decentralized Wastewater
Treatment and Reuse***

Organized and conducted by:

Al-Balqa Applied University (BAU)

In close cooperation with:

International Union for the Conservation of Nature (IUCN)

November 3-7, 2013 in Amman - Jordan





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1. General

This training course is the second milestone of SWIM-Sustain Water MED's capacity development programme. It aims to provide a theoretical and practical overview of the principles, technologies, and benefits of decentralized wastewater treatment and reuse (DWWTR). The training course is designed and organized by the project partners in Jordan, the Al-Balqa Applied University in close cooperation with the GIZ and the International Union for Conservation of Nature (IUCN) in Amman-Jordan. The training targets individuals and organizations from the government, private sector as well as civil society and academia. Participants are expected to be directly involved in strategic or technical matters pertaining to DWWT technology and its applications in adaptive integrated water resources management (AIWRM).

2. Training Objectives

This training aims to provide a comprehensive overview of the principles, technology, and benefits of DWWTR, in order to enable participants to assess the feasibility and based on the assessment advocate for DWWTR strategies in their respective countries. Further, the training intends to introduce and promote Decentralized Wastewater Management (DWWM) as a management strategy toward AIWRM. Through the training, the participants will learn how to identify the various components of a DWWM system, explore the latest DWWTR technologies, including their design, operation and maintenance aspects and exchange experiences on different national standards and guidelines. Lastly, participants will receive an overview of how to plan and conduct environmental, health and socioeconomic impact assessments.





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3. Training Plan

The training will be conducted over a span of five full working days, from November 3-7, 2013. The training is composed of five modules and will take place in Amman, Jordan. Information on logistics (i.e. accommodation) will be communicated in due time.

4. Target group

The target group includes professionals from the governmental and private sector as well as civil society and academia. Potential applicants are expected to have good knowledge in water resources, wastewater or related engineering and environmental backgrounds. Individuals with managerial background are also welcome. The language of the training will be in Arabic and English with simultaneous translation into French. Training material will be available in French and English language. Adequate language skills are therefore required. The potential target groups include:

- Ministries: Water, Water Utilities, Agriculture, Environment, Health, and Energy
- Municipalities and NGOs
- Educational Institutions; Universities and Research Centers
- Beneficiaries of the SWIM Sustain Water MED pilot projects

5. Training Methodology

A wide range of teaching methodologies will be used including visual learning material, exercises, group work, field visits, and reading material. Teaching material will cover interconnected topics such as wastewater engineering, treatment technologies, AIWRM, environmental impact assessments (EIA), as well as computer applications.





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6. Training Modules and Schedule

The training covers the following modules:

- Concept and principles of DWWTR (i.e. centralized vs decentralized, cluster and semi-decentralized wastewater alternatives)
- Wastewater characterization and site selection
- Technology and reuse methods; selection and design
- Standards and guidelines
- Socio-economic, health and environmental impact assessments

Training schedule and activities are summarized in Table 1

Table 1: Training schedule and activities

Day	Topics	description
Day 1	Introduction to DWWM	Participants will learn to differentiate between different scales of wastewater treatment systems over a wide range of solution arrays.
	Wastewater characterization	Physical, chemical and biological characterization of wastewater will be explained in the context of DWWM.
	Criteria for site selection	Participants will learn how to identify areas that require sanitation systems based on DWWM.



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Day 2	Technology selection	Different downscaled technologies will be highlighted, identified and characterized.
Day 3	Technology Design	Engineering design of decentralized technologies will be discussed. In addition, operation and maintenance of these technologies will comprise a considerable part in the training.
Day 4	International standards and guidelines and health aspects	What guidelines are available, how they are differentiated?
	WW reuse, technologies and guidelines	Means to dispose of the treated wastewater will be discussed. Different kinds of reuse options available on the market will be presented.
Day 5	EIA	EIA processes and components will be discussed.
	Socioeconomics	Cost benefit analysis of DWWT will be discussed based on socioeconomic context
	Field visit	Excursion to the research and demonstration site at Fuhais - Jordan

