





WES INFO BULLETIN REGIONAL TRAINING AND STUDY TOUR ON OPTIMAL IRRIGATION MANAGEMENT

March 2024







Overview

The EU funded 'Water and Environment Support (WES) in the ENI Southern Neighborhood region' Project organised a Regional Training focusing on optimal irrigation management and practices (RW-7-REG) and a Study Tour (ST) in Bari, Italy.

A total of thirty key stakeholders participated in this regional Activity. The duration of the Training was 5 days, from the 12th till the 16th of June 2023 (including two days in the field).

Agriculture consumes more than 70% of the available water resources throughout the Mediterranean and the largest part of freshwater resources withdrawals, while both food and water demands are on the increase due to rapidly increasing population and changes in lifestyle.

Water availability is significantly affected by climate change and variability, while stormwater and wastewater are increasing.

Overexploitation of water resources, particularly groundwater, is beyond the sustainability limits in the WES project countries. The irrigation agencies and/or water users associations (WUAs) must implement comprehensive strategies for the management of limited water resources.

These strategies should focus on helping farmers improve their irrigation practices to conserve water and improve yield, allocating irrigation water in a more efficient, reliable, and equitable ways, and ensure the economic sustainability of the irrigation schemes and the WUAs.

Methodology and Implementation

Objectives

The purpose of this Regional Activity was to build the capacity of the Partner Countries (PCs) on optimal irrigation management and practices using appropriate irrigation methods for improved irrigation efficiency and water productivity and highlighting the benefits of using treated wastewater and rainwater harvesting.

The Training was combined with the Study Tour in Bari Italy, an advanced country in this field, providing examples of hands-on practices followed.

To achieve the training objectives, a highly dynamic, interactive, facilitated, and participatory approach was adopted, making use of **professional learning tools** such as:

- Presentations by trainers and by the participants;
- Facilitated round table discussions;
- Personal and/or national perspectives;
- Break-out sessions engaging the participants in group discussions and group work with the Water Experts who steered and facilitated these discussions, with the aim to apply what they have learnt during the training;
- Videos to facilitate understanding by the participants;
- Hands-on exercises;
- Study Tour to enhance the learning process and expose the participants to success stories in the management of irrigation systems at the irrigation scheme and on-farm levels under water scarce conditions.
- > The Training also considered pressing interests identified during the sessions.
- Pre and Post Training assessment provided specific feedback on the impact of the training on the understanding of fundamentals and concepts and knowledge acquired in the field.







Main Topics

Throughout the training event, participants were introduced to:

- A. Optimal management of collective irrigation systems, water allocation and distribution and its impact on productivity, in order to:
 - 1. Understand the importance of irrigation water use efficiency in the context of water resources management at the collective irrigation scheme/network level.
 - 2. Know the concepts of water management at the collective irrigation scheme/network level, including irrigation water allocation and distribution (water delivery schedule) and its impact on water productivity at the farm level.
 - 3. Know the concepts of planning, designing, and operating collective pressurized irrigation distribution systems to provide reliable, adequate, timely and equitable irrigation water supply as it relates to on farm water productivity.
 - 4. Get introduced to the main considerations for the optimal design of collective irrigation systems.
 - 5. Learn about the concepts and the importance of hydraulic analyses of collective systems to provide optimal services to farmers.
 - 6. Learn about the specific considerations associated with irrigation using treated wastewater reuse.
 - 7. Learn about available tools that allow for an optimal design and analysis of collective pressurized irrigation systems.
- B. Optimal on-farm irrigation management and its impact on irrigation efficiency and water productivity, in order to:
 - 1. Understand the importance of irrigation efficiency in the context of water resources management at the farm level.
 - 2. Know the concepts of water efficiency and productivity in agriculture and the links between the different definitions used in the literature to express water efficiency at different scales (collective irrigation schemes, farm level).
 - 3. Learn about the parameters/considerations affecting the variability in the water efficiency of a crop.
 - 4. Get introduced to the different technologies used for optimal irrigation at the farm level including the use of smart irrigation.
 - 5. Learn about the specific considerations associated with irrigation using treated wastewater reuse focusing on technical and environmental aspects.
 - 6. Get introduced to the tools available for efficient irrigation water management, estimating yields and developing irrigation schedules at the farm level.
 - 7. Get introduced to the applications of renewable energies in on-farm irrigation.

In addition, the ability of the trainees was further enhanced notably through:

- 1. Implementation of rapid exercises in addressing practical problems.
- 2. Promotion of north to south and south to south exchange and experience sharing through:
 - a. Presenting practical examples also from a European context, as needed.
 - b. Facilitating the exchange of experiences between participating practitioner and discussing real situations in their own countries.
 - c. Cross-fertilisation between the WES Demo projects and this Project on the subjects related to optimal irrigation management and treated wastewater reuse with a view to promote preservation of water resources under increasing water scarcity.







- d. Dissemination of related WES Demo projects results and outcomes to date.
- 3. Field visits to show case examples of experience in optimal irrigation management at both the collective irrigation scheme/network and farm levels including the use of smart irrigation technologies and treated wastewater reuse, in addition to the utilisation of renewable energy in irrigation at the farm level.

Conclusions

According to the quiz that was provided before and after the training and the extensive discussions held during this activity, the participants showed sufficient knowledge about some of the concepts covered during the training. They also clearly expressed their satisfaction with the Training and all the topics covered during the 5 days:

- ✓ Water management at the scheme level;
- On-farm irrigation management;
- ✓ Safe reuse of non-conventional water resources in agriculture.

Nevertheless, according to the training evaluation sheets filled by the participant, the trainees indicated that they gained a lot of new information and concepts about irrigation management at both on-farm and scheme levels, smart irrigation and its applications, and the use of treated wastewater for irrigation.

Indeed, the gained knowledge is to be transmitted to local technicians and farmers.

Useful Link

https://www.wes-med.eu/activities_type/rw-7-reg-st-study-tour-and-trainings-of-water-userassociations-on-optimal-irrigation-management-and-practices-using-appropriate-irrigation-methodsfor-improved-irrigation-efficiency-and-soil-fer/

WES Project

The EU funded Water and Environment Support (WES) is a regional project designed to contribute to the implementation of an integrated approach to pollution reduction and prevention, in line with the Union for the Mediterranean agendas and the Barcelona Convention. WES is also meant to contribute to a more efficient management of scarce water resources in the ENI Southern Neighbourhood region.

The project aims to do so by increasing the capacity of stakeholders that are involved in pollution reduction and water management and support them in formulating and implementing the environmental and water policies.

WES supports the shift to a more sustainable consumption and production model, promotes an integrated and efficient management of water, combats plastic pollution and marine litter and fosters dialogue on key environmental and sustainable development issues. In this way, WES also supports mutual understanding, cooperation, and peace in the region.

For any further information on WES project, please visit: And follow us for all the latest updates via: DISCLAIMER:



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