

# WEBINARS SERIES ON RAINWATER HARVESTING

May – December 2022

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## INTRODUCTION

Water scarcity is a critical challenge in countries and regions with arid and semi-arid conditions and fast-growing water demands. This is mostly the case in all of the countries across the Near East and North Africa (NENA) Region, where food demand and food insecurity continue to grow widening the water supply-demand gap in most countries. Furthermore, the anticipated impact of climate change in the NENA region is indicative towards an increased intensity in rainstorms and flashfloods, while the total amount of annual precipitation rates show declining trends.

Rainwater Harvesting (RWH) is considered a valuable water source, particularly in arid and semi-arid areas across the world, where (i) a large portion of the soil moisture is lost through evapotranspiration and (ii) most rainfall events are of intensity higher than the soil infiltration rates, resulting in less water available to plants and higher soil erosion with runoff flowing towards non-beneficial sinks.

RWH can be considered both a practice and a technology for harvesting and retaining rainwater for beneficial use. It is seen as a valuable, relatively simple, and low-cost approach that can be adapted to provide several benefits in agriculture, as well as in rural, urban and peri-urban areas.

During the last 20 years, interest has been renewed in RWH as one of the most effective climate adaptation strategies to cope with water scarcity, thus reducing the pressure on the limited freshwater resources and increasing rainfed crop productivity.

This webinar series aims to provide an overview of RWH applications and illustrates, with country examples, the diversity of approaches. It will try to demonstrate the options to unlock the potential of rainwater harvesting applications in the NENA region by highlighting the role of rainwater management in overcoming the current challenges in achieving water security. It will also shed the light on the need for of innovations in economics, social consensus and supportive laws and regulations to ensure a widespread uptake of RWH technologies in the NENA region.

### Main Conveners:

FAO/WEPS-NENA project & Water Scarcity Initiative (WSI) with: ICARDA, ICID and FAO *inter*-Regional Technical Platform on Water Scarcity (iRTP-WS)

### Contributing Partners:

Acacia Water, ACSAD, AOAD, ESCWA, IFAD, INRAA, MetaMeta, University of Florence, Università degli Studi di Firenze and WOCAT

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## MAIN OBJECTIVES

- 1 Exploring and upgrading principles, methods and techniques in Rainwater Harvesting across various countries and regions;
- 2 Building capacity in planning, designing, implementing and operating RWH systems;
- 3 Enhancing guided decisions on the selection of a single or a blend of various RWH techniques, for diverse projects and setups;
- 4 Promoting a community of practices on RWH among the countries of the NENA Region and beyond;
- 5 Providing the participants with a complete and advanced set of documentation on the various topics treated during the webinar series.



## TARGETED AUDIENCE

The targeted audiences in this webinar series are mainly practitioners, decision-makers, researchers, rural and city planners, academics and their students interested in understanding the role of RWH systems in achieving **SDG 6, SDG 2 & SDG 11**.

The webinars will be accompanied by suggested readings ahead of the webinar date, to allow the participants to read basic material and get prepared for an effective attendance and discussion. Each webinar will be translated, recorded and will remain available on the dedicated website along with the reading materials. Translation will be provided in at least French and English.

## MAIN OBJECTIVES

The webinar series is expected to start by late May in the form of 10 logical and consecutive main webinars that, comprehensively, provide clarity and complete answers to lingering questions and doubts regarding the adequacy and accuracy of the use of the RWH applications in different contexts. The sessions will be regularly organized every week or every two weeks under the following modules:

### Module 1 Introduction to RWH

This module comprises of two main sessions on "Setting-the-scene" and "Showcasing Global and Regional RWH Applications for Agro-Ecosystems and Cropping Systems". These sessions will provide an overview of RWH systems, the objectives of RWH and its main applications, the classification and suitable conditions for RWH by showcasing various regional and international RWH applications for Agro-ecosystems and cropping systems.

### Module 2 RWH Processes

#### *Soil, water and landscape modelling*

This module will examine the use of RWH practices and modelling for determining the land and soil suitability of surface runoff harvesting. It will also explore how local RWH interventions can impact soil and water processes and transform landscapes.

### Module 3 Mapping the Potential for RWH

#### *Technical and socio-ecological tools and approaches for RWH mapping and upscaling*

This module aims to explore the potential of RWH practices by examining the different approaches for mapping and upscaling suitable sites for RWH structures, through the utilization of land and water suitability frameworks, remote sensing tools and socio-ecological variables.

### Module 4 Main Guidelines for Planning and Designing RWH Systems

#### *Technical, socio-economic and environmental considerations in planning and designing RWH system*

This module will mainly address the technical, socio-economic and environmental considerations that should be taken into account while designing RWH systems. It aims to shed the light on several participatory approaches and guidelines that can facilitate and advance the implementation of RWH projects.



## **Module 5** Ways to Operate and Maintain RWH Systems

### *Technical and socio-economic considerations in RWH O&M*

This module covers the operation and maintenance challenges of rainwater harvesting systems. It will discuss the approaches to O&M in the context of RWH systems and explore the extent to which O&M influences the sustainability of rainwater harvesting systems.

## **Module 7** Addressing climate variability impacts through RWH

### *The role of RWH Systems and water buffering in climate change adaptation, and biodiversity and ecosystem enhancement*

This module describes how the development of RWH systems helps to address the impact of climate change. This module will draw on a review of ACSAD experiences in implementing rainwater harvesting projects in the MENA region from a climate change perspective. Discussions will continue with a reflection on the effects of RWH on biodiversity enhancement and ecosystem services. The role of RWH on water buffering at the catchment level and how it can transform landscapes and livelihoods will be further explored.

## **Module 9** Gender Mainstreaming in RWH Applications

### *Gender equality and women empowerment in RWH systems*

This module discusses how gender mainstreaming in RWH projects contributes to gender equality and women empowerment. This module also highlights the extent to which gender mainstreaming in RWH systems strengthens livelihood security of rural communities.

## **Module 6** RWH for Flood Risk Management

### *Practices and effectiveness of RWH Systems in flood prevention and mitigation*

This module explores the role of RWH to control flood risks and use them productively in rural areas. Several approaches are presented (e.g. road water harvesting, flood spreading) and their effectiveness to control floods is further discussed. Case study elements in the MENA region are included in the presentations.

## **Module 8** RWH for Smallholders

### *Socio-economic benefits and risks of RWH - livelihood transformation*

This module will particularly cover the role of RWH in sustaining smallholders' livelihoods. It will highlight the role of rainwater harvesting in strengthening the livelihood security of rural communities and building their resilience to climate change. The discussions will draw from various case studies from the MENA region.

## **Module 10** Operationalizing RWH policies

### *Creating an enabling policy environment and ways to operationalize RWH policies*

The webinar explores how policy development and the governance of land and water resources can influence the development of rainwater harvesting systems at the country level. Several case studies from the MENA region will be presented during this webinar and will help formulate key recommendations to create a conducive environment for the development of RWH systems.



# SAVE THE DATE & REGISTER

for the first sessions of the webinar series

## Module 1: Introduction to RWH

### M1/S1: Setting the Scene

**Date:** Tuesday, 31<sup>st</sup> May 2022

**Time:** 01:00 PM - 02:30 PM (GMT +2)

**Speakers:** Rima Mekdaschi-Studer, WOCAT and Theib Oweis, ex-ICARDA

**Register:** [Setting the scene](#)

### M1/ S2: Showcasing Global and Regional RHW Applications for Agro-Ecosystems and Cropping Systems

**Date:** Tuesday 7<sup>th</sup> June 2022

**Time:** 01:00 PM - 2:30 PM (GMT +2)

**Speakers:** Kunlun Ding, ICID – China and Abdelmadjid Boulassel, INRAA – Algeria

**Register:** [Showcasing global and regional RWH](#)

## Module 2: RWH Processes

### M2/S1: Soil, Water and Landscape Modelling

**Date:** Tuesday, 21st June 2022

**Time:** 01:00 PM - 02:30 PM (GMT +2)

**Speakers:** Ajit Govind, ICARDA-Egypt & Hanspeter Liniger, WOCAT

**Register:** [Soil, water and landscape modelling](#)



## Module 3: Mapping the Potential for RWH

### M3/ S1: Technical and Socio-ecological Tools and Approaches for RWH Mapping and Upscaling

**Date:** Tuesday, 5th July 2022

**Time:** 01:00 PM - 02:30 PM (GMT +2)

**Speakers:** Feras Ziadat, FAO –NSL (to be confirmed) and Luigi Piemontese, University of Florence

### M3/ S2: Mapping the RWH Potential in the MENA Region

**Date:** Tuesday, 12th July 2022

**Time:** 01:00 PM - 02:30 PM (GMT +2)

**Speakers:** Ajit Govind, ICARDA Egypt and Anne van der Heijden, Acacia Water

## Module 4: Main Guidelines for Planning and Designing RWH Systems

### M4/S1: Technical and Socio-economic Considerations in Planning and Designing RWH Systems

**Date:** Tuesday, 19th July 2022

**Time:** 01:00 PM - 02:30 PM (GMT +2)

**Speakers :** Sarah Daniel, ESCWA; Giulio Castelli and Elena Bresci, Università degli Studi di Firenze

### M4/S2: Planning and Designing of RWH Systems and Structures

**Date:** Tuesday, 26th July 2022

**Time:** 01:00 PM - 02:30 PM (GMT +2)

**Speakers:** Giulio Castelli and Elena Bresci, Università degli Studi di Firenze and Theib Oweis, ex-ICARDA

This activity is implemented within the regional project "Implementing the 2030 Agenda for water efficiency/productivity and water sustainability in MENA countries" under the umbrella of the Water Scarcity Initiative. This regional project is implemented by the Food and Agriculture Organization of the United Nations and funded by the Swedish International Development Cooperation Agency (SIDA).

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