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FAO TRACK at Cairo Water Week

14–15 October 2024



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14–15 October 2024



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Technical Session / Activity	Day	Time
Opening Session	14 October	9:30 – 9:55
Technologies for Sustainable Water Management: Insights and Case Studies from NENA Region Countries	14 October	9:55 – 11:00
Enhancing Water Resilience using a data-driven approach.	14 October	11:30 – 13:00
Multidimensional Approaches Towards Enhancing Water Planning	14 October	14:00 – 15:30
Advancing Water Resilience and Management in the NENA Region	14 October	16:00 – 17:30
PART I-A: Promoting Innovative Strategic Orientations for Advancing Science Based Decision Making in Desalination for Agriculture Development (DAD). (Panel Discussion)	15 October	9:30 – 11:00
PART I-B: Promoting Innovative Strategic Orientations for Advancing Science Based Decision Making in Desalination for Agriculture Development (DAD). (Countries Case Studies)	15 October	11:30 – 13:00

Technical Session / Activity	Day	Time
PART II-A: From Waste to Resource: Advanced frameworks for Integrating Treated Wastewater in Modern Agricultural Practices. (Countries Case Studies)	15 October	14:00 – 15:30
PART II-B: From Waste to Resource : Advanced frameworks for Integrating Treated Wastewater in Modern Agricultural Practices. (Panel Discussion)	15 October	16:00 – 17:30
Other FAO Sponsored Activities		
Best Water Conservation Practices Competition	14 October	Room: Louvre 5 (14:00 – 15:30)
Innovative Irrigation and Agriculture in Kafr El-Sheikh – Field Trip	15 October	Full Day
High Level Joint Water-Agriculture Technical Committee Meeting – League of Arab States	16 October	Full Day
Young Water Inventors Competition	17 October	Room: Iceland (11:30 – 13:00)



Opening Session

The FAO Track will be inaugurated with opening and welcoming remarks by the Assistant Director-General of the FAO Regional Office for the Near East and North Africa, the Ambassador of the Netherlands, and the Egyptian Minister of Water Resources and Irrigation. This will be followed by an introductory presentation on the FAO Track by the Delivery Manager of the FAO Regional Initiative on Water Scarcity.

Moderator: Mr. Mohamed Al-Hamdi, FAORNE

Date: 14 October 2024

Time: 9:30 – 9:55 (Cairo Time)

FAO TRACK Opening	Time
Opening and Welcoming Remarks by Mr. AbdulHakim Elwaer, FAO Assistant Director- General and Regional Representative for the Near East and North Africa	5 minutes
Opening by HE. Ambassador of Japan (tbc)	5 minutes
Opening by HE. Prof. Dr. Hani Sewilam, the Minister of Water Resources and Irrigation of Egypt (tbc)	5 minutes
Presentation on the Regional Water Scarcity Initiative (WSI) and the FAO Track, Mr. Mohamed Al-Hamdi, FAORNE	10 minutes



FAO Track Day-1 Theme: Water Resilience for Sustainable Development

*Sub-Theme: Technology and Data
(Technical Sessions 1 and 2)*

Technical Session 1: Technologies for Sustainable Water Management: Insights and Case Studies from NENA Region Countries

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Background and Rationale

Countries in the Near East and North Africa (NENA) region face significant water scarcity challenges, intensified by the climate change impacts, rapid population growth, unsustainable water management and agricultural practices, and limited access to data for informed decision-making. Addressing these issues is crucial for ensuring food and water security.

This session aims to showcase technology-based interventions from FAO projects, implemented in the NENA region, which aim to contribute to sustainable water use and improved agricultural productivity. These interventions seek to improve the livelihoods and resilience of vulnerable communities by increasing agricultural production and transitioning from less efficient conventional irrigation practices to modern smart irrigation practices while considering collective farming systems. The session will provide valuable insights into leveraging advanced technologies and practices to enhance water management and agricultural production in the NENA region, thus reinforcing climate adaptation and sustainable development efforts.

Technical Session Objectives

- Demonstrate technological advancements and methodologies used in three projects across the NENA region countries, focusing on modern irrigation techniques, information technology and climate-smart water management practices.
- Showcase country projects' practices and interventions in Tunisia and Egypt, emphasizing their impact on enhancing water use efficiency and agricultural productivity. This will be demonstrated through the following presentations:

- » *Presentation 1: This presentation will showcase the progress of an FAO Dutch-funded project utilizing information technology and FAO WaPOR spatial database, in Tunisia, for monitoring terrestrial soil water balance and agricultural land productivity. The project aims at enabling more informed decision-making for improved agricultural practices and efficient water management.*
 - » *Presentation 2: This presentation will demonstrate the efforts of an FAO Dutch-funded project aiming to enhance agricultural productivity and improve the livelihoods of smallholder farmers in Assiut, Sohag, and Qena Governorates in Egypt. This will be achieved through the adoption of modern irrigation technologies and Climate-Smart Water Management (CSWM) practices, along with Land Use Consolidation (LUC) to counter the effects of land fragmentation.*
 - » *Presentation 3: This presentation will illustrate the progress of an FAO Japanese-funded project in Egypt which aims to improve agricultural productivity and sustainability. This will be achieved through scaling up modern irrigation technologies such as solar-powered pumps and hybrid low-energy irrigation systems, climate-smart water management (CSWM) practices, and good agricultural practices (GAP).*
- Promote Knowledge Sharing through facilitating the exchange of information and experiences among participants, enabling them to learn from the best practices and lessons learned from the featured projects, through an open discussion with the presenters.

Moderator: Mr. Mohamed Abdallah, FAORNE

Date: 14 October 2024

Time: 9:30 – 11:00 (Cairo Time)

Agenda

Presentations and Interventions - 9:55 – 11:00			Presenter/Moderator	Time
Welcome and Opening Remarks			Mr. Mohamed Abdallah, FAORNE	5 minutes
Presentation: Utilizing Data technologies for Improving Water Use Efficiency and Food Security.			Mr. Hesham Aboelsoud, FAO	15 minutes
Presentation: Enhancing Agricultural Productivity and Livelihoods in Egypt through Land Use Consolidation, modernization of irrigation techniques, and Climate-Smart Water Management Practices.			Mr. Khalid Chatila, FAO-Egypt	15 minutes
Presentation: Enhancing Crop Yields and Food Security in Egypt through Modern Irrigation Technologies and Climate-Smart Practices.			Ms. Naglaa El-Bendary, FAO-Egypt	15 minutes
Q/A			Moderator: Mr. Mohamed Abdallah, FAORNE	15 minutes



Technical Session 2: Enhancing Water Resilience using a data-driven approach

Background and Rationale

Achieving food and water security in the NENA region through sustainable water management and agricultural practices requires informed decision-making backed by data. Reliable data is essential for guiding sustainable water use in agriculture and for addressing land and water productivity gaps. Establishing baselines and monitoring progress towards these goals requires the use of data from field-level observations, remote sensing, and analysis-ready sources.

Leveraging these data resources is crucial for enhancing the knowledge and building the capacity of stakeholders, including government officials, Water Users Associations (WUAs), and farmers, for effective decision-making. Field and remote sensing data can help identify high and low-performing areas, assess actual productivity versus potential productivity, analyze the root causes of productivity gaps, and evaluate feasible solutions within the local context. Selecting feasible solutions is a complex process that demands data on the interconnections within the water-energy-food nexus, where water use efficiency, energy consumption, and food production are closely linked.

Session Objectives

- Develop the audience understanding of how data-driven methodologies can inform sustainable water management and agricultural practices in the NENA region countries, with a focus on enhancing agricultural water productivity, and optimizing the use of resources considering water-energy-food nexus.
- Explore the benefits and challenges of using remote sensing data and field-level observations for monitoring water productivity, identifying gaps, and guiding climate-smart agricultural interventions. This will be demonstrated through the following presentations:

- » *Presentation 1: This presentation will demonstrate an "On-farm Water-Energy-Food Carbon-Footprint Nexus Index" that is developed by ICARDA to assess the interconnections and trade-offs between water, energy, food production, and carbon emissions in wheat farming. The index, which was applied in Egypt, is part of broader efforts to understand and optimize the use of resources, and to identify areas where improvements can be made to achieve more sustainable farming practices.*
 - » *Presentation 2: This presentation will highlight key achievements of an FAO project in Sana'a, Yemen. It will focus on how stakeholders have utilized a validated remote sensing-based methodological framework to monitor current productivity levels across various crop production systems. The presentation will also cover the assessment of observed versus potential water productivity levels, aiming to identify and analyze the underlying causes of productivity gaps, and to evaluate the options and viable solutions to close the productivity gaps in the local context*
 - » *Presentation 3: This presentation will introduce the progress achieved towards designing an innovative tool to assess irrigation systems' performance by combining in-situ data with remote sensing technologies. The tool supports monitoring of irrigation efficiency, identifying issues and implementing corrective actions to enhance water service provision and agricultural productivity. Traditional irrigation performance assessment focuses on water balance, water service, and maintenance, environmental, and economic indicators, while remote sensing performance assessment looks at production and actual water consumption.*
- ➔ Facilitate interaction and knowledge exchange among technical experts, government officials, and participants on leveraging data and insights for informed decision-making for sustainable water use and enhanced agricultural water productivity.

Moderator: Mr. Mohamed Abdallah, FAORNE

Date: 14 October 2024

Time: 11:30 – 13:00 (Cairo Time)

Agenda

Presentations and Interventions – 11:30 – 13:00		Presenter/Moderator	Time
Welcome and Opening Remarks		Mr. Mohamed Abdallah, FAORNE	5 minutes
Presentation: On farm WEF carbon footprint nexus assessment (New index developed by ICARDA)		Mr. Mohie Omar, ICARDA	15 minutes
Presentation: Empowering Water Users Associations (WUA) and National Institutions: Leveraging Remote Sensing Tools for Improved Water Management in Sana'a.		Mr. Saad AlHousali, FAO Yemen	15 minutes
Presentation: Development of an Irrigation Performance Assessment Tool leveraging in-situ and remote sensing-based data.		Mr. Sami Ouechtati, FAO Iraq	15 minutes
Q/A			15 minutes
Panel Discussion: How can data platforms and use of data technologies contribute to enhancing water resilience to climate change in the NENA Region? Success stories, challenges, and recommendations.		Mr. Belal Elleithy, Earth Observation Data General Manager, Egyptian Space Agency (EgSA) Mr. Mohamed El-Kholy, Director of Soil, Water and Environment Research Institute (SWERI) Mr. Hatem Hussein, Director of the Planning Department at the Ministry of Water Resources, Iraq	20 minutes
Wrap up and closing			5 minutes



Technical session 3: Multidimensional Approaches Towards Enhancing Water Planning

Background and Rationale

The Near East and North Africa region is facing an increasing gap between water supply and demand due to several factors such as population growth and increasing food demand. In a water scarce context, accentuated by adverse effects of climate change, countries of the region are facing several challenges hindering their efforts towards achieving water and food security. Sustainable agricultural development is closely dependent on efficient and integrated water planning approach combining dimensions related to policy, financing and the interdependence of water, energy, and food.

Adequate policies and strategies at the regional and national levels play a pivotal role in supporting countries achieving the Sustainable Development Goals. Cross sectoral policy coherence paves the way to better coordinated efforts between development actors and countries enabling an efficient response to their needs and requirements. Institutional coordination and coherence between partners are important for policy coherence. At the regional level, the Arab League engages in High-Level exchanges, through its intergovernmental processes, where countries design and endorse sectoral strategies. Adapted financing mechanisms play a key role in economic development. Investing in the water sector has impacts on the other sectors, inter alia, the agricultural sector. Thus, innovative financing solutions adapted to the region can enable prioritizing actions for improved water planning. Designing a water finance strategy requires a participatory, inclusive, and gender-based investment planning process that generates benefits across sectors providing social benefits.

Technical Session Objectives

This session will discuss how a multidimensional approach including policy, financing, and technical aspects, contributes to achieving integrated water planning at the regional and national levels and addressing the importance of coordinated efforts to enable equitable access to water. The objectives of the session are:

- To highlight the role of cross-sectoral policy coherence in supporting countries' efforts for enhanced strategic water planning.
- To explore how innovative financing solutions, adapted to the regional context and mainstreamed into national strategies, can support countries efforts in resource mobilization for an improved integrated water planning.
- To discuss how the nexus approach and the interdependence of water, energy, and food can support decision makers in water planning.

Moderator: Mr. Ahmad Mukhtar, FAORNE

Date: 14 October 2024

Time: 14:00 – 15:30

Agenda

Items	Speaker	Time
Opening and Welcoming Remarks	Ahmad Mukhtar, FAORNE	5 minutes
Presentation: The Role of Cross-Sectoral Policy Coherence in Supporting Countries' Efforts for Enhanced Strategic Water Planning	Hammou Laamrani, ESCWA	15 minutes
Presentation: Innovative Financing Solutions adapted to NENA Countries and Mainstreamed into National Strategies: How can these solutions support countries efforts in resource mobilization for an improved integrated water planning	Amgad El Mahdi, GCF	15 minutes
Presentation: From Satellites to Decisions: Innovations Supporting Water-Energy-Food nexus planning in MENA	Youssef Brouziyne, IWMI	15 minutes
Q/A		15 minutes
Panel Discussion: Improved water planning through coordinated efforts: How a multidimensional approach including policy, financing, and technical aspects contributes to achieving integrated water planning at the regional and national levels.	Walid Hakiki, Head of planning sector, Ministry of Water Resources and Irrigation, Egypt. Aziz Idrissi, Director at the Ministry of Equipment and Water resources, Morocco. Hatem Hussein, Director at the Ministry of Water Resources, Iraq	20 minutes
Wrap up and closing	Ahmad Mukhtar, FAORNE	5 minutes



Technical Session 4: Advancing Water Resilience and Management in the NENA Region

Background and Rationale

water scarcity, climate change, and conflicts, amongst other factors, have exacerbated vulnerability of local communities in the Arab region. Difficulty to access water has deteriorated livelihoods leading to increased food insecurity. Water is used unsustainably in particular groundwater resources. According to the world Bank, in some countries, more than half of current withdrawals exceed water availability. Arab countries are facing the challenge of enhancing water resilience to ensure sustainable agricultural production.

Water resource managers face the challenge of making complex planning and management decisions in a changing environment characterized by a high level of uncertainty. The growing gap between water demand and supply for food production requires new approaches of water management to ensure efficient use of water and equitable access to agricultural production.

Water savings towards improving water allocation, access to irrigation facilities, community based early warning systems, role of water user associations in effective water management towards enhancing resilience at the community level, reduced water-related conflicts are all possible solutions to enhance vulnerable communities' resilience.

This session will explore how countries can strengthen water security through water management accessible and adapted techniques and approaches to prevent water crises' effects on food security.

Technical Session Objectives

This session will discuss water resilience and management in the context of water scarcity in the NENA region and how countries are rethinking water management to achieve water and food security. The objectives of the session are:

- ➔ To rethink water allocation through innovative water saving techniques.
- ➔ To explore how improved water management can contribute to enhancing community resilience.
- ➔ To discuss how effective is the role of water user associations in water management and their contribution to enhance community resilience.

Moderator: Mr. Hichem Charieg, FAORNE

Date: 14 October 2024

Time: 16:00 – 17:30 (Cairo Time)

Agenda

Items	Speaker	Time
Opening and Welcoming Remarks	Hichem Charieg, FAORNE	5 minutes
Presentation: Rethinking Water Allocation: Innovative Water Saving Techniques in Egypt	Ashraf Ghanem, FAORNE	15 minutes
Presentation: Enhanced Community Resilience in Yemen through Improved Water Management (Access to Irrigation Facilities / Reduced Water-Related Conflicts / Community based EWS) <i>[Funded by Germany]</i>	Fazal Khakwani, FAO Yemen	15 minutes
Presentation: Water user associations and water management towards enhancing communities' resilience	Sara MarjaniZadeh, FAOSEC	15 minutes
Q/A		15 minutes
Panel Discussion: Water management in a context of water scarcity in the NENA region: How countries are rethinking water management to achieve water and food security?	Panelists: Abdelhamid Mnajja, Director at the Ministry of Agriculture, Tunisia. Salem Darwich, Advisor to the Minister at the Ministry of Water Resources, Lebanon. Thair AL-Momani, Secretary General Assistant for Technical Affairs at the Ministry of Water Resources, Jordan	20 minutes
Wrap up and closing	Hichem Charieg, FAORNE	5 minutes



FAO Track Day-2 Theme: Promoting Innovative Sustainable Use and Management of Non- Conventional Water Resources for Agricultural Development

*Sub-Theme: Water Desalination Sessions
(Technical Sessions 1 and 2)*

PART I-A: Promoting Innovative Strategic Orientations for Advancing Science Based Decision Making in Desalination for Agriculture Development (DAD). (Panel Discussion)

Background and Rationale

This one-day session aims to bring together policymakers, stakeholders, experts, and practitioners from industry, private and research sectors from the NENA region to review the latest developments of sound policies, innovative solutions and quality measures for the use of non-conventional water resources (NCWR), with a special focus on desalination and the use of treated wastewater in agricultural. It will discuss sustainable innovative implementation practices and considerations using cutting edge NCWR.

Exploring advanced solutions to cope with water scarcity, the session will delve into complex design and operational challenges of desalination and treated wastewater projects covering ecological, socioeconomic, sustainability, finance, water and health nexus, policy frameworks and renewable energy integration. Additionally, during the session, a number of presentations and panel discussions will be organized, and participants will engage in interactive exercises.

Expected Outcomes:

To help the countries meet their future water challenges and upscale their existing plans on the use of NCWR, the session seeks to foster a collaborative dialogue among industry experts, policymakers, private sectors, investors, and researchers, in promoting sustainable water resource management and overcoming operational hurdles in the utilization of NCWR in the Arab region. It will conclude with the following outcomes:

- Enhanced understanding of the latest technologies and innovations in non-conventional water solution for agriculture development under water scarce condition and climate change context including desalination and treated wastewater for agriculture.
- Improved insight into the health, environmental, and socio-economic impacts of non-conventional water resources.
- Increased capacity for identification of sustainable finance, investments, and renewable energy opportunities in agricultural development projects.
- Strengthened Networking opportunities for collaboration and knowledge exchange among participants on non-conventional water solution for agriculture development.

Technical Session Objectives

This panel will open dialogue on strategic orientations to foster informed decision for safe and sustainable use of desalinated water resources in agriculture sector and explore the multifaceted decision-making considerations for implementing desalination for agriculture development projects to achieve food security. Discussions will address also, circular economy, energy consumption, environmental impact, water quality, infrastructure, social acceptance, sustainable finance, and climate resilience.

Moderator: Mr. Mohamed Al Hamdi, FAORNE

Date: 15 October 2024

Time: 09:30 – 11:00 AM (Cairo Time)

Agenda

Presentations and Interventions	Presenter/Moderator	Time
Day Objective and Expected Outcomes	Moderator: Mr. Mohamed Al Hamdi, FAORNE	5 min
Unlocking the Potential of Desalination in MENA for Agriculture	Mr. Jauad El Kharaz, Former Executive Director of the Regional Center for Renewable Energy & Energy Efficiency (RCREEE)	15 min
Panel Discussion:	Mr. Hammou Laamrani, ESCWA.	60 min.
	Mr. Amgad Elmahdi, Green Climate Fund-GCF	
	Mr. Safwat Abdel-Dayem, National Water Research Center (NWRC-Egypt)	
	Ms. Shannon K. McCarthy, International Desalination and Reuse Association.	
	Mr. Ayman Ayad, EU	
Wrap up and closing	10min.	



PART I-B: Promoting Innovative Strategic Orientations for Advancing Science Based Decision Making in Desalination for Agriculture Development (DAD). Countries Case Studies

Technical Session Objectives

The objective of this session is to enhance common understanding by sharing knowledge and exploring the opportunities and challenges of the latest technological innovations in Desalination for Agricultural Development (DAD), addressing their potential to enhance water efficiency and crop yields. It will examine the ecological impacts of desalination on soil and ecosystems, presenting actions for mitigating negative effects. Through technical presentations, participants will gain insights into sustainable good agricultural practices and successful case studies to promote the responsible integration of desalinated water in agriculture development.

Moderator: Ms. Heba Al Hariry, FAORNE

Date: 15 October 2024

Time: 11:30 – 13:00 (Cairo Time)

Agenda

Presentations and Interventions	Presenter/Moderator	Time
Session Objective and Expected Outcomes	Moderator: Ms. Heba Al Hariry, FAORNE	10min.
The Future of Using Desalination for Agriculture Development in GCC Countries	Mr. Mohamed Abdel Hamyd Dawoud, Advisor Environment Quality, Environment Agency – Abu Dhabi	10min.
Case Study from Malta	Mr. Manuel Sapiano, Chief Executive Officer of the Energy and Water Agency (EWA)	10min.
Q/A		10min.
Case Study from Egypt	Dr. Mohamed Shaban M. Abusalama, the director of the Drainage Research Institute (DRI), National Water Research Center (NWRC) in Egypt	10min.
Case Study from Morocco	Mr. Redouane Choukr-Aallah, Water Expert.	10min.
Case Study from Tunisia	Mr. Mnajja Abdelhamid, Director General of DGGR and SONEDE Ministry of Agriculture, Water Resources and Fisheries – Tunisia	10min.
Q/A		10min.
Wrap up and closing		10min.



PART II-A: From Waste to Resource : Advanced frameworks for Integrating Treated Wastewater in Modern Agricultural Practices. Countries Case Studies

Technical Session Objectives

This session aims to explore the regulatory frameworks governing the use of treated wastewater in agriculture, emphasizing quality assurance and safety standards. It will cover the development and enforcement of regulations, best practices for monitoring and compliance, and the role of policymakers in ensuring public health, gender considerations and environmental protection. The session will also address sanitary safety planning and the safe use of treated sludge, highlighting strategies for mitigating health risks and maximizing the benefits of sludge as a valuable agricultural resource. Participants will learn about successful implementation examples and the importance of robust regulatory frameworks in promoting the sustainable and safe reuse of wastewater and sludge for irrigation.

Moderator: Ms. Heba Al Hariry, FAORNE

Date: 15 October 2024

Time: 14:00 – 15:30 (Cairo Time)

Agenda

Presentations and Interventions	Presenter/Moderator	Time
Session Objective and Expected Outcomes	Moderator: Ms. Heba Al Hariry, FAORNE	5min.
Scene setting: The State of Treated Water Reuse in the Arab Region and 2030 Strategic Vision for Treated Wastewater Reuse in Egypt	Mr. Khaled Abu Zied, CEDARE	15min.
Case Study on Water and Health Uzbekistan and Tajikistan	Ms. Sara MarjaniZadeh, FAOSEC	10min.
Sanitary Safety Planning Framework for the Arab Region	Ms. Maha Halalsheh, FAORNE	10min.
Q/A		10min.
Wastewater Reuse & Sludge Applications in Egypt.	Dr. Rifaat Abdel Wahaab Sector, Head the Holding Company of Water and Wastewater, Egypt	10min.
The use of treated wastewater in Agriculture in Palestine	Eng. Emad Khelif, Ministry of Agriculture, Palestine	10min.
Q/A		10min.
Wrap up and closing		10min.



PART II-B: From Waste to Resource : Advanced frameworks for Integrating Treated Wastewater in Modern Agricultural Practices. (Panel Discussion)

Technical Session Objectives

This Panel will explore advanced strategies for effectively integrating the safe use of treated wastewater into farming practices with the aim of enhancing water resource sustainability. It will examine cutting-edge treatment technologies, health and safety standards, and the economic benefits of wastewater reuse. Participants will gain insights into overcoming implementation challenges and maximizing agricultural productivity through innovative wastewater management frameworks and protocols.

Moderator: Ambassador Shahira Wahbi. Water and food security expert

Date: 15 October 2024

Time: 16:00 – 17:30 (Cairo Time)

Agenda

Presentations and Interventions	Presenter/Moderator	Time
Panel Discussion:	Ms. Dr. Rola Al Imam, WHO	60 min
	Mr. Alain Meyssonier, Mediterranean Water Institute	
	Ms. Nisreen Lasheen, Arab Organization for Agricultural Development (AOAD)	
	Javier Mateo- Sagasta, IWMI	
Q/A		15 min.
Summary of key takeaways from both parts	Mr. Ahmed Mukhtar, FAORNE	15 min.



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