Food and Agriculture Organization of the United Nations

ICBA

IME

IWMI International Water Management Institute

World Health Organization

Webinar Series for Unlocking the Potential of Treated Wastewater and Drainage Water for Agriculture Development

Webinar # 4: LATEST ADVANCES AND PERFORMING TECHNOLOGIES IN WATER TREATMENT AND STORAGE

Wednesday - December 16th, 2020
11:00 AM – 12:30 PM (Tunis, Tunisia time)

Concept note and Agenda

Draft 2

Introduction

The Near East and North Africa region has the lowest reserves of freshwater resources in the world. Water availability has been decreasing by two thirds over the last 40 years. Due to this growing water scarcity, impacts of climate change, and increasing water demands, the region is expected to experience economic losses estimated at 6 -14% of GDP by 2050. By that time, 60% more freshwater resources will be needed to satisfy the growing global demand for food.

In this context and within the framework of the Regional Water Scarcity Initiative (WSI), FAO and its partners are continuing to support - more than ever before - countries in the region in addressing their most pressing challenges: assessing food and water security for sustainable economic and social development. To prevent acute water shortages, the use of non-conventional[1] water resources for agricultural production is emerging as a priority for most countries.

[1] Rainwater storage, desalination, treated wastewater

FAO Sub-regional Office for North Africa, 1 Rue du Lac Winnipeg, Tunis, Tunisia. FAO-SNE@fao.org

So far, the potential of non-conventional water resources remains untapped. The role of these resources in strengthening water security in the region is undervalued. Indeed, countries in the region have different levels and potential of use of these resources.

The use of non-conventional water resources in countries experiencing shortages in the Conventional water resource management is a most important and necessary imperative. An important component of non-conventional water resources is the reuse of treated wastewater «REUSE ".

Around the world, we have noticed that the use of REUSE makes it possible to make up for water deficits in all sectors and particularly in irrigation, groundwater recharge and even the production of drinking water.

The champion countries in the REUSE are Spain, USA, Australia, Israel and Namibia.

In the Mediterranean, other countries have made the use of REUSE a priority, such as Tunisia, Jordan, Morocco and Palestine. In Spain, the Region of Murcia is a Mediterranean example, but also a global one, where the rate of REUSE use exceeds 98%.
The use of non-conventional water resources in countries experiencing shortages in Conventional water resource management is the most essential and necessary imperative. An important component of non-conventional water resources is the reuse of treated wastewater «REUSE ".

For the Maghreb countries, only 20% of treated wastewater is currently reused. The amount of drainage water resources is insufficiently recorded and reused in the region. Figures for drainage water resources and their reuse rate at the national level are often missing.

Within this framework, FAO and its partners - ICBA, IWMI, WHO, and IME - joined forces to organize a webinar series for improved regional cooperation between countries in the field of non-conventional water reuse for agricultural development. These webinars will enhance knowledge and information on the safe use of treated wastewater and drainage water in agriculture. Some of them will focus on policy dialogue for strategies and initiatives promoting non-conventional water reuse in the region.

As the new paradigm of transforming the wastewater treatment plants from waste producers to a new source of valuable assets and energy is progressing, impulsed by new technologies and sound governance schemes. The importance of considering fundamental concepts referred to circular economy and optimization of the natural resources in the water use cycle since the design phase of the water project becomes more and more important.

Discussion questions

Contrary to the three previous webinars, the webinar #4 will focus on technical aspects covering the whole chain: *collection, treatment, storage up to the reuse of non-conventional water* with an integrated approach that involves all stakeholders for safe and productive reuse of treated wastewater and drainage water to boost agricultural production. It will be articulated around case studies presenting the new technologies and latest advances in the field with emphasis on quality control and for use mainly in agriculture such as : treatment of brackish well water for agricultural irrigation, tertiary treatment of urban wastewater for use in agricultural irrigation, tertiary treatment of industrial wastewater for its reintroduction into the process, industrial uses for the production of water that does not require a very low salinity, de-hardening or decarbonization of water, dephosphatation or elimination of sulfates and other divalent compounds.

This webinar #4 will be discussing on the latest advances in the full-scale reuse of treated wastewater and the drainage water around the region and the world.

The following questions will be discussed:

- ✓ ***How to build a sustainable reuse project in the rapid evolution of the regulatory context?***
- ✓ ***How to manage complex interdisciplinary tasks in a REUSE project?***
- ✓ ***How to take into account and evaluate social aspects and acceptability?***
- ✓ ***What are currently, the technological key points in an irrigation REUSE project?***
- ✓ ***How emerging pollutants (chemicals, EDCs, medecines, microplastics, …) and bacterial or virus contamination have to be controlled in a REUSE project?***

One or (two) keynote speakers will share their experiences and set the stage for a broader discussion on the topic. They will highlight some successful 4 or 5 national case studies.

Audience

Webinar #4 is designed for national multidisciplinary teams, including policymakers and stakeholders from ministries of agriculture, water, environment and health and other authorities, research and development sectors, civil societies, and private sector entities involved and interested in the non-conventional water sector.

Technical specifications – Registration

Webinar #4 will use Zoom technical platform with simultaneous translation provided (French/English). All needed materials, documentation, and presentations will be made available to all registered participants.

Participants will have the opportunity to ask questions, make comments, and share relevant information and material through a chat function.

Webinar #4 will be recorded and made available along with the associated materials and documents on the web pages of FAO, WHO, IWMI, ICBA, and IME.

Registration in advance for this webinar #4 is compulsory. The zoom link will be sent automatically upon registration.

Agenda

Wednesday December 16th, 2020	
11:00 - 11:10	Moderator of Webinar #4: **Mr. Alain Meyssonnier**, President of the Institut Mediterraneen de l'eau ((IME) Opening remarks: **Dr. Maki Abdourahman** (FAO SNE) **Mr. Alain Meyssonnier** (IME)
11:10 - 11:40	**Introductive Speech** Reuse's project: from the idea to the sustainable project in a rapidly changing regulatory context **by Nicolas Condom, President of Ecofilae (tbc)**
11:40 -12:10	**Case studies** • France: "Development of drainage water treatment equipment" **by Mr.Thierry Jalabert, IME** • Spain: "REMEMBRANE: a new technology developed for desalination - European R&D Project" **by Mr. Valentin Veiga, TYPSA Grupo, Spain** • Tunisia: "Development and scale-up of technologies for the treatment of municipal and textile wastewater and drainage canal water - MADFORWATER project" **by Mr. Atef Jaouani, University of El Manar, Tunisia** • Turkey: "New Paradigm in nitrogen removal from wastewater" **by Ms. Bilge Alpaslan Kocamemi, Marmara University, TurkeyPanelist (tbc).** • **Contribution of Netherlands Water Partnership (tbc)**
12:10 -12:25	**Questions and answers with Panelists**
12:25 -12:30	Wrap up: **Mr. Faycal Chenini** (FAO SNE)

Keynote Speakers

photo	**Mr Nicolas Condom**
photo	Speaker 2 (Short biography)

Panelists

	**Mr. Thierry Jalabert** is a senior engineer with more than 20 years of experience in sanitation and water quality. He began his career in 1990 as a Calculation and Methods Engineer, then Project Manager of the Master Plan for the Distribution of Drinking Water in Safi, Morocco. He joined Société des Eaux de Marseille (SEM) in 1994 as Head of the Environment and Waste Division. More recently, Mr Jalabert was Technical Advisor to the International Department of SEM. As an expert in sanitation and water quality, Mr Jalabert has acquired a wide range of skills in terms of studies and assistance to project owners, advice and organisation, master plans and operational assistance.
(Photo)	**Mr. Valentin Veiga** is a senior mechanical engineer with more than 20 years of dedicated experience in water treatment plants and pipeline water projects. He has worked in the design, construction, and commissioning of large water international EPC projects, with a wide international experience in countries like Saudi Arabia, India, Mexico, Perú, EAU, China, Argelia or Chile. Since 2012, he is Head of the Water Treatment and Pipping Section of TYPSA, one of the largest Civil Engineering Consultancy Companies in Spain, where he has worked in the design and construction supervision of relevant international projects especially in seawater desalination plants and wastewater treatment plants.
(photo)	**Prof. Atef Jaouani, University of Tunisi El Manar, Tunisia** (Short biography)
	**Ms.Bilge Alpaslan Kocamemi** is an Associate Professor in Department of Environmental Engineering at Marmara University in Istanbul, Turkey. She received her B.S and M.S degree in Environmental Engineering from Marmara University and Ph.D in Environmental Technology from Boğaziçi University in Istanbul, Turkey. Her research interests lie in the area of biological wastewater treatment with focus on nitrogen and phosphorus removal from sewage. She is the scientific advisor to a project group conducting a SARS-CoV-2 surveillance work in wastewater nationwide as per the instructions from the Turkish Ministry of Agriculture and Forestry. She is also a member of COVID-19 Scientific Committee of Turkish Ministry of Agriculture and Forestry.