



Webinar on “Challenges for Hydrological Science in Arid and Semi-Arid Regions”

14 January 2025
1:00 pm – 3:00 pm (Cairo Time)

Organized by
Arab Water Academy (AWA) / Arab Water Council (AWC)

Concept Note & Agenda

Introduction:

Arid and semi-Arid areas represent some 30% of the global land area and are home to rapidly growing populations. Water management is a major challenge, exacerbated by increasing water scarcity and increasing flood risk. For effective management, a sound understanding of the hydrology of these regions is essential, together with appropriate modeling tools. However, despite decades of effort, the hydrological community is still faced with fundamental and unresolved scientific challenges, and Arid areas remain a graveyard for hydrological models. This talk reviews these science and modeling challenges, based on experience worldwide, but particularly from the Middle East.

Realizing the importance of this crucial topic, the **Arab Water Council (AWC)** and the **Arab Water Academy (AWA) (which is affiliated to AWC)** are pleased to invite you to our upcoming webinar on 14 January 2025 under the title: **“Challenges for Hydrological Sciences in Arid and Semi-Arid Regions”**. Our keynote speaker in this webinar. **Prof. Howard Wheeler** FREng, FRCS, is an emeritus Professor, at Imperial College London, UK, and Canada Excellence Research Chair Laureate, University of Saskatchewan, Canada.

Key Topics Cover:

Science and modelling challenges specific to hydrological processes in arid areas, including precipitation, evaporation, infiltration, wadi flows, transmission losses and groundwater recharge, with examples from Northern Oman, SW Saudi Arabia, S America, Southern Africa and the SW USA.

Potential Focus Areas in the Webinar:

Research needs and opportunities for progress in hydrological science for arid areas, including focussed field experimental studies, integration of surface and groundwater research, incorporation of new remote sensing datasets and improved models for flood, water resource and water quality applications.

Why Attend?

Due to the Arid and semi-arid regions, face significant water scarcity due to low rainfall and high evaporation rates, attending a webinar on "**Challenges for Hydrological Science in Arid and Semi-Arid Regions**" is valuable for several reasons, especially if you are a student, researcher, or professional in hydrology, environmental science, climate studies, or related fields. Here's why it matters:

- The state of the art in the Hydrology of Arid Zones.
- Hydrological Modeling in Arid Zones.
- Climate Change Challenges in the Hydrology of Arid Zones will be modified by Prof. Howard.
- Integrated Water Resources Management (IWRM) in Arid Zones.
- The webinar can help you understand how hydrological science contributes to managing scarce water resources effectively, ensuring sustainable usage.
- Also, these regions are highly vulnerable to climate change, with more frequent droughts and altered rainfall patterns, for that the webinar will discuss how hydrological science addresses these changes and develops strategies for adaptation and resilience.
- Attending the webinar could introduce you to cutting-edge tools and approaches being used in Arid and semi-arid hydrology.
- The webinar will explore case studies and solutions that tackle these practical issues.
- Webinars often provide opportunities to connect with experts, researchers, and peers working in similar fields. This can lead to collaborations, access to new resources, or mentorship.
- The webinar could discuss how scientific research informs policy, particularly in regions with competing demands for limited water resources.

By participating in the webinar, you'll gain knowledge, tools, and connections that are crucial for tackling the unique hydrological challenges of these fragile ecosystems.

Registration:

To register to attend the webinar, please fill in the form below before 9 January 2025 to secure your spot:

Form Link : <https://forms.gle/LMJJwkBMNebdwzZd9>

The webinar link will be sent to your email

- **Date:** Tuesday 14 January 2025
- **Time:** 1:00 pm – 3:00 pm (Cairo Time)
- Platform: Zoom,

We look forward to your participation in this timely and important discussion. Together, we can work towards a resilient and sustainable future.

Webinar Language:

The webinar language is English and the translation is not available.

Bio of Prof. Howard Wheeler FEng, FRCS:



Professor Howard Wheeler is Canada Excellence Research Chair Laureate in Water Security at the University of Saskatchewan, Canada, where he founded the Global Institute for Water Security, and Emeritus Professor of Hydrology at Imperial College London, UK. He is a Fellow of the Royal Society of Canada, the Royal Academy of Engineering, UK, and the American Geophysical Union. Scientific awards include the IAHS-UNESCO-WMO International Hydrology Prize and the Prince Sultan bin Abdulaziz International Prize for Water. He has led national research

programs in the UK and Canada, advised states, provinces and governments on flood, water resource and water quality issues, and appeared as an expert before the International Court of Justice in three international water disputes.

Dr. Wheeler has worked extensively in the Middle East and was co-founder of UNESCO's GWADI Arid zone water program. He was also vice-chair of the World Climate Research Programme's Global Energy and Water Cycle Exchange (GEWEX) project. In 2023 he was awarded the Order of Bernardo O'Higgins for services to the Republic of Chile.

Detailed Agenda:

Moderator: Prof. Dr. Abdin Salih , Director of AWA

Tuesday 14 January 2025

Time	Agenda Item
1:00 – 1:15 pm	Opening Remarks By: H.E. Prof. Dr. Mahmoud Abu-Zeid President, Arab Water Council
1:15 – 2:15 pm	“Challenges for Hydrological Science in Arid and Semi-Arid Regions” Prof. Howard Wheeler Emeritus Professor, Imperial College London, UK, and Canada Excellence Research Chair Laureate, University of Saskatchewan, Canada.
2:15 – 2:20 pm	Participants Group Photo
2:20 – 2:30 pm	Commentator Prof. Gamal Abdo Director of Water Research Center -University of Khartoum
2:30 – 2:50 pm	Open Discussion
2:50 – 3:00 pm	Closing and Wrap-Up Way Forward By: Prof. Dr. Abdin Salih Director of AWA