



25th ICID International Congress

74th IEC (International Executive Council) Meeting

1-8 November 2023 Visakhapatnam Andhra Pradesh India

INTERNATIONAL WORKSHOP

Nonconventional Water for Irrigated Agriculture - benefits of advanced technologies

At the 25th ICID International Congress/74th IEC Meeting



3 November 2023



**14:00-15:30 hours
(Session 1)**

**16:00-17:30 hours
(Session 2)**



**Room – L1, Raddison Blu
Resort, Vishakhapatnam
(Vizag), India**

Background

According to the World Economic Forum, water quantity and quality have been identified as the biggest threats facing the planet over the next few decades. Due to climate change, water is expected to become increasingly scarce. Fresh water is critical to everyone on this planet, whether for personal use, growing crops, manufacturing products, or washing clothes. At the same time, there is a large volume of nonconventional water being generated on a daily basis, which can only grow with increasing urbanization. Nonconventional water includes treated sewage water, drainage water, non-fresh water (i.e., with a relatively high salt, nutrient, and organic matter content), and reuse of those waters for irrigated agriculture. The FAO and UNEP/WHO all have published guidelines for the safe use of wastewater in irrigated agriculture. Mathematical modeling of irrigation with nonconventional water plays an important role and can provide useful insights into the acceptance of nonconventional irrigation water for greenfield development.

High-value horticultural crops, including fruits, vegetables, flowers, aromatic plants, and herbs, are key components of agricultural development and economic progress in many developing countries. In developed countries, the horticulture industry contributes significantly to the prosperity of people living in rural and regional areas. For example, in Australia, the horticulture sector alone generates over \$15 billion in value and employs over 60,000 people.

This workshop is focused on using nonconventional water more efficiently in irrigated agriculture to achieve a closed-loop future for water. So, there is a greater need for resiliency, efficiency, and smart management. There are already numerous in-situ sensors and remote sensing systems in use in orchards for efficient water, salt, and nutrient management. Precision horticulture is more about managing orchards for uniform growth and production year after year, where smart technology is or will play an ever-increasing role when it comes to making the industry sustainable with minimum or zero footprints.

Workshop Themes

- **Innovative science of nonconventional water irrigation and drainage**
- **Application of sensors and remote sensing for NCWR**
- **Machine learning and artificial intelligence for better decision making for nonconventional water irrigated agriculture.**
- **Environmental, economic, social and cultural aspects of nonconventional irrigation**

This Workshop is being organised under the auspices of the International Commission for Irrigation and Drainage (ICID) in conjunction with the Irrigation Australia (IA).



ICID-CIID

NCWRI-WG WORKSHOP SERIES II

PROGRAMME



Session 1

Dr. Tapas Biswas, Australia (Workshop Chair)

- 14:00 -14:05 Welcome and introduction – Dr. Tapas Biswas, Australia
- 14:05 -14:15 Introductory remark: Dr. Ragab, President of the ICID, UK
- 14:15 -14:30 NCWRI Guidelines framework. Dr Wenyoung Wu, Chair of WG-NCWRI, China
- 14:30 -14:45 Benefits of AquaWatch tools for monitoring and forecasting of nonconventional water resources. Dr. Tapas Biswas
- 14:45 -15:00 Importance of nonconventional water in realising Water and food security in India. Dr Gouranga Kar, Director, CRIJAF, India.
- 15:00 -15:15 Japan's case study on nonconventional water for growing paddy and future strategies for circular economy. Prof. Tasuku Kato, Tokyo Univ. of Agril. & Tech., Japan.
- 15:15 – 15:30 Nonconventional Water Resources – a global perspective. Dr Sasha Koo-Oshima, Deputy Director, FAO Land and Water, Italy
- 15:30 - 15:45 Health Break

Session 2

Dr Wenyoung Wu, China (Workshop Co-Chair)

- 15.45 -16:00 Challenges and opportunities of non-conventional water resources for integrated and sustainable water management in the Arab region. Prof. Redouane Choukarallah, AITTC, MPU, Morocco
- 16:00 -16:15 Long-term effects of contaminants in nonconventional water on irrigated soils. Dr Ma, IWHR, China
- 16:15 – 16:30 Deficit Irrigation Using Sewage Treated Water for Date Palm Production in Riyadh, Saudi Arabia. Prof. A AlOmran, KSU, Saudi Arabia
- 16:30 -16:45 Use of nonconventional water use in agriculture – an Indian case study. Prof. Gorantiwar, MPKV, Maharashtra, India
- 16:45-17:15 Open floor discussion (Prof. Tasuku Kato, Lead)
- 17:15-17:30 Concluding remarks, thanks and close (Dr. Tapas Biswas, Chair)

Workshop Committee

Dr Tapas K Biswas (Chair & organiser), CSIRO, Irrigation Australia, Australian National University, Canberra, Australia (tapas.biswas@csiro.au)

Dr. Wenyong Wu (Co-chair) – China Instt. of Water Res & Hydropower, China (wenyongwu@126.com)

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