



## Call for papers

### 25<sup>th</sup> International Congress on Irrigation and Drainage of ICID

1-8 November 2023, Vishakhapatnam (Vizag), Andhra Pradesh, India

The International Commission on Irrigation and Drainage (ICID) was established on 24 June 1950 at New Delhi, India. ICID is a leading scientific, technical, and professional international not-for-profit network of experts from the fields of irrigation, drainage, and flood management working together with the mission 'Sustainable Agriculture Water Management'.

ICID is a knowledge sharing platform dedicated to issues related to entire spectrum of agricultural water management practices ranging from rain-fed agriculture to supplemental irrigation, land drainage, deficit irrigation to full irrigation, etc. In addition, drainage of agricultural lands forms the core theme of our activities. Floods and drought; the two extremes of increasingly variable climate as a result of potential climate change, also form the focus of activities. [*For more details log on to <https://icid-ciid.org>*]

ICID has been organizing its flagship triennial event International Congress on Irrigation and Drainage since 1951. The 1st ICID Congress was held in 1951 at Delhi and so far, ICID has held 24 Triennial Congresses. The **25<sup>th</sup> International Congress on Irrigation and Drainage and the 74<sup>th</sup> International Executive Council meeting** is being organised by Indian National Committee of ICID (INCID) on the theme '**Tackling Water Scarcity in Agriculture**' from **01-08 November 2023 in Vishakhapatnam (Vizag), Andhra Pradesh, India**. ICID triennial Congresses focus on the upcoming issues that need to be addressed in irrigation, drainage, and flood management. The Congresses also provide a platform for reviewing a number of contentious issues concerning the future of irrigation water vis-à-vis increased demands for competitive uses. The aim of the Congress is to provide a platform for irrigation and drainage professionals and the broad range of other stakeholders to share their knowledge and experience in sustainable agriculture water management focusing on irrigation management and its related/integrated aspects.

#### **CONGRESS THEME: Tackling Water Scarcity in Agriculture**

Water use within agricultural systems, primarily irrigation, account for almost seventy to eighty per cent of global water withdrawals. With rising temperatures intensifying demand, in combination with more frequent and severe weather extremes impacting production, water scarcity in agriculture is posing a challenge to food security. Among other global trends, population growth and related increases in demand for agricultural and forestry products to provide food, fodder, fibre and fuel put further pressure on water resources.

Freshwater shortages have already begun to constrain socio-economic development in some regions. In many areas, competing uses for water from agriculture, industry, and municipal users further constrain the availability of water for agriculture. Bioenergy production and use put the additional onus on the water resources while an increased intensification of agriculture and water pollution poses an additional challenge. It is not surprising that seven out of seventeen Sustainable Development Goals (SDGs 1, 2, 3, 6, 13, 15 and 17) of UN Agenda 2030, are directly or indirectly influenced by the way we manage our agricultural water.

Increasing water productivity, within the agricultural water management domain, is analogous to achieving water savings (while maintaining yields), which can occur at the plot level and/or at the irrigation-system level, with or without adopting new technologies. With a diminishing share of water for agriculture, food security is feasible only with an increase in agricultural productivity, the efficient use of available water and increasing exploitation of new and non-conventional sources of water.

International Commission on Irrigation and Drainage (ICID) strives for a water-secure world free of poverty and hunger through its mission to facilitate prudent agriculture water management. "Enabling Higher Crop Productivity with Less Water and Energy" is the most cherished goal of ICID Vision 2030. Through its tri-annual Congresses ICID, provides a forum to exchange the knowledge, information and technology solutions that are



needed to tackle water scarcity. The 25<sup>th</sup> Congress, therefore, focuses on the possible solutions of tapping alternative water resources and increasing water productivity through on-farm interventions to tackle agriculture water scarcity.

Theme of 25<sup>th</sup> ICID Congress 'Tackling Water Scarcity in Agriculture' is expected to address the theme in the form of two questions.

## CONGRESS QUESTIONS

### QUESTION 64: What Alternative Water Resources could be Tapped for Irrigated Agriculture?

The spatial and temporal variabilities in precipitation and water availability call for harnessing the blue water component for different uses. Most irrigation systems operate at levels below the achievable efficiency and have enormous scope to improve their productivity and efficiency. Water use and management in agriculture cross many scales: crops, fields, farms, delivery systems, basins, and the nations. Farmers as end-users and the main actors in on-farm water management, need enabling conditions in which they are willing to take initiative for improvement in productivity.

In addition to the water withdrawn from surface sources, irrigation requirements of plants can be met through rainwater, greywater, recycled wastewater, and groundwater. Rain-fed agriculture continues to contribute to about 40 per cent of global food production and most of its problems are often associated with high-intensity rainfall with large spatial and temporal variability. The dry spells need to be overcome through supplemental irrigation with the help of alternative rainwater-harvesting systems etc. Adopting deficit-irrigation is also a strategy that can be highly beneficial in water-scarce conditions.

As one of the key alternative water resources, wastewater can be used in agriculture to compensate for water shortages, particularly in peri-urban areas. Wastewater irrigation has long development history and has undergone different phases in developing and developed countries that desires appropriate safety practices.

### SUB-QUESTIONS:

#### Q.64.1 Developing and Reinforcing Conventional Sources of Irrigation Water.

- (a) Increasing the reliability of water supply in irrigation systems (including storages, long distance water transfer, etc),
- (b) Supplementing with sub-surface water through groundwater replenishment and recharge and conjunctive use with surface water

#### Q.64.2 Tapping Non-Conventional Sources of Water

- (a) Wastewater (treated and semi-treated domestic and industrial wastewater) in Irrigation with Good Agricultural Practices,
- (b) Managing saline and alkaline water for higher productivity

#### Q.64.3 Empowerment of Farmers

- (a) Enabling participation through legal instruments – Cooperatives, Water User Associations
- (b) Agriculture Extension Services for irrigation water management,
- (c) Capacity development through Information Education and Communication
- (d) Water budgeting by farmers

### QUESTION 65: What On-Farm Techniques can Increase Water Productivity?

Substantially increasing productivity, not only in terms of physical outputs but also in economic terms is essential to meet the goals of poverty alleviation, food security and water security. Water productivity is



dependent on, among others, water management practices and agronomic practices. Productivity at different levels of the irrigation system needs to be critically analysed to effectively guide policy interventions and practices vital to achieving the desired objectives. Interventions that close the “yield gap” between a farm’s current yield and its potential yield, are especially beneficial in regions where hunger is most acute.

There are several different approaches by which farmers can improve water productivity. Options include those related to plant physiology, which focuses on making transpiration more efficient or productive, agronomic practices, which aim at reducing evaporation, and on-farm agricultural-engineering approaches, which aim at making water application more precise and more effective. Resource conserving techniques such as laser land leveller for field preparation, and ridge-furrow method form part of such a wide spectrum of options. Emerging technologies present a vista of new opportunities such as precision agriculture, biotechnology, sensor technology, bioinformatics, climate-smart agriculture, robotics, drones, artificial intelligence, etc.

### **SUB-QUESTIONS:**

#### **Q.65.1** Improving Management of Existing Facilities

- (a) A closer look into the concepts of Water Productivity and Irrigation Efficiency
- (b) Using real time forecasts on soil moisture, and Extended Hydrological prediction
- (c) Reducing water flows to sinks - irrecoverable deep percolation and surface runoff - and reusing return flows,
- (d) Efficient distribution of available water with minimum losses, including Public Private Partnership (PPP) in this area.

#### **Q.65.2** Improved Agronomic Practices and Research / Innovation

- (a) Timely application of irrigation water
- (b) Controlling non-beneficial evaporation
- (c) Minimizing salinization of return flows
- (d) Closer look at appropriate regional cropping pattern, especially considering the appropriateness of virtual water transfer involved

#### **Q.65.3** Efficient Application of Irrigation Water

- (a) Reducing non-returnable losses of irrigation water
- (b) Pressurised irrigation through piped conveyance systems at farm levels
- (c) Using technologies such as SCADA, sensor technology, and precision application

There are many ‘Side Events’ planned for the Congress, however, collection of papers for them will be handled by the Organizers of the side event.

### **SCHEDULE OF SUBMISSION OF ABSTRACTS/FULL PAPERS**

The abstracts/ papers are invited from the policy makers, professionals, academicians, researchers, experts, and scientists from private and government sectors as per following deadlines.

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|---|----------------------|
| (a) Submission of ‘Extended Abstracts’ (500-600 words): | <b>15 April 2023</b> |
| (b) Notification of Acceptance of Extended Abstracts:   | <b>10 May 2023</b>   |
| (c) Submission of Full papers:                          | <b>31 May 2023</b>   |
| (d) Notification to Authors (oral/poster/presentation): | <b>15 June 2023</b>  |



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## ONLINE PAPER SUBMISSION

- (a) Online 'Extended Abstract' submission is now open. New Users are expected to create their own account. The procedure for creating a new account is available at [https://congress.icidevents.org/Register\\_Modify.aspx](https://congress.icidevents.org/Register_Modify.aspx)
- (b) Please note that only the 'Extended Abstracts' of the papers are required in first stage of submission to enable peer review by an International Review Committee. **PLEASE DO NOT SUBMIT THE FULL PAPERS AT THIS STAGE** as they would not be reviewed now.
- (c) Upon receiving acceptance letter from ICID Central Office, authors are required to provide/upload an electronic version of the full length papers in Microsoft Word format (**file size limited to 10 MB**) by strictly following the guidelines available at <https://congress.icidevents.org/PaperSubmissionProcess.aspx>

## CONTACT COORDINATES

### For all paper related queries

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### For Participation in the Congress

Visit <https://icid25congress.in/index.html>

