ICID•CIID
INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE

INCID
Indian National Committee on Irrigation & Drainage

25TH ICID INTERNATIONAL CONGRESS ON IRRIGATION AND DRAINAGE

75TH INTERNATIONAL EXECUTIVE COUNCIL MEETING

VIZAG 2023

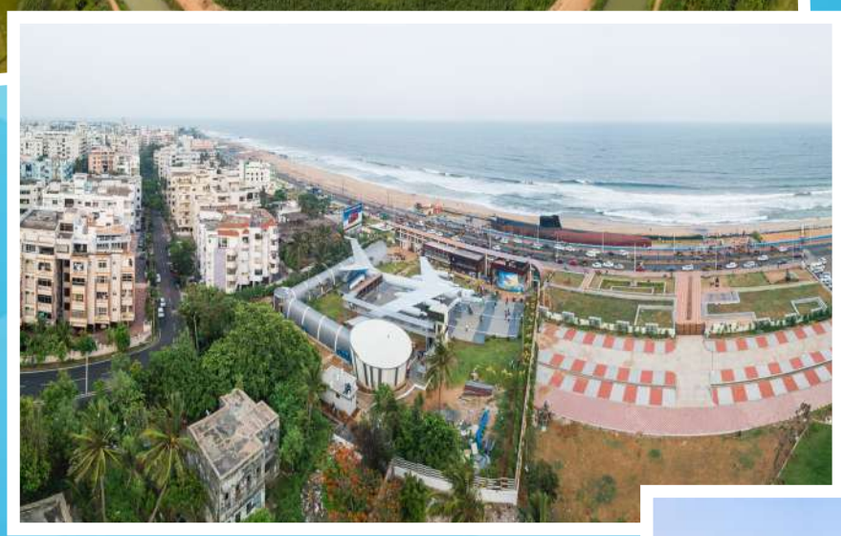
FIRST ANNOUNCEMENT

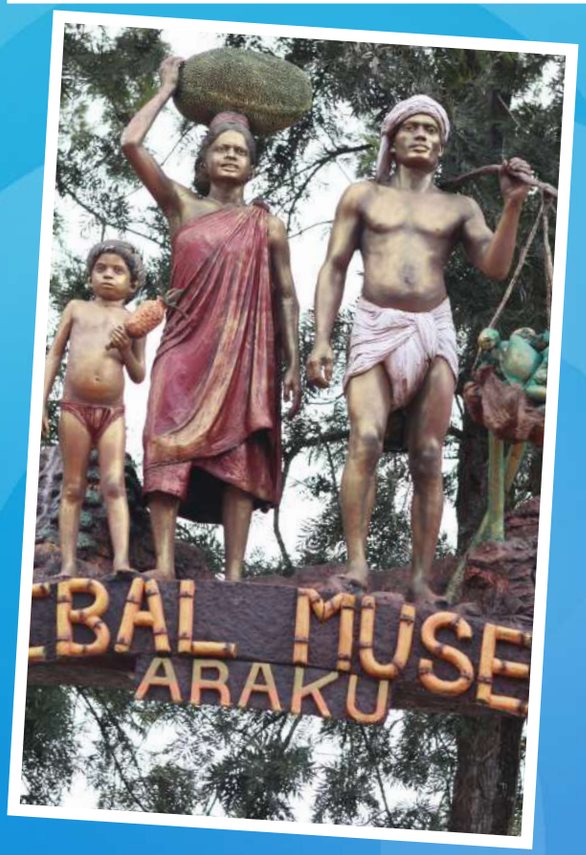
TACKLING WATER SCARCITY IN AGRICULTURE

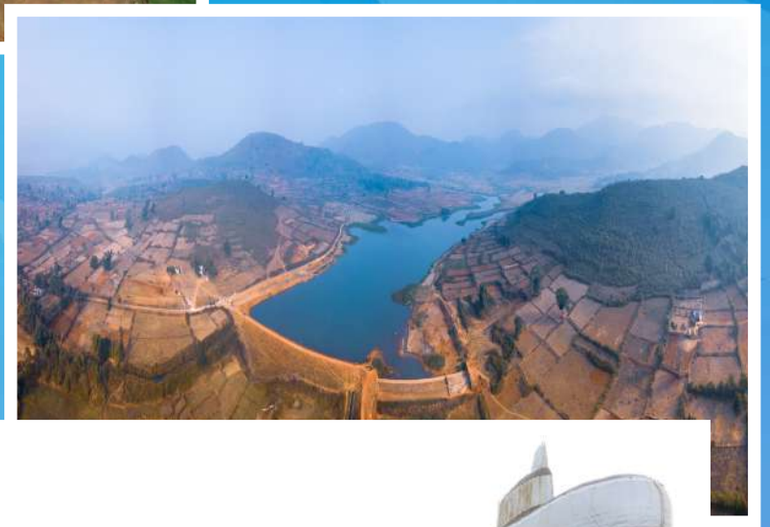
1-8 NOVEMBER 2023
VIZAG/VISAKHAPATNAM
ANDHRA PRADESH
INDIA

Hosted by INCID and Govt of Andhra Pradesh, India

Pictures: Vizag / Visakhapatnam, Andhra Pradesh, India







CONGRATULATORY MESSAGES

Reply to:

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ICID•CIID

International Commission on Irrigation and Drainage • *Commission Internationale des Irrigations et du Drainage*

Dear Friends, Colleagues,

It is my pleasure and great honour to announce that the 25th ICID International Congress on Irrigation and Drainage under the theme: "Tackling Water Scarcity in Agriculture" together with the 75th International Executive Council Meeting will be held in Visakhapatnam, Andhra Pradesh, India from 6th to 13th of November 2023.

On behalf of ICID, I would like to extend my warm invitation to ICID members and all other water scientists and stakeholders throughout the world to join me and attend this flagship global event in India. ICID and the Organizers, are committed to make this event an enriching experience in irrigation and drainage disciplines. India is the founder member of ICID and is the ICID home since 1960. Moreover, India has since been actively associated with ICID activities at national and international level.

India has a very impressive record in hosting successful conferences and this one with no exception will be a memorable event. The Indian National Committee (INCID) hosted the 1st IEC at Simla in 1950, the 1st Congress and 2nd IEC at New Delhi in 1951; the 4th IEC in Bangalore in 1953; the 6th Congress and 17th IEC Meeting in New Delhi in 1956, the 33th IEC Meeting in New Delhi in 1982, the 60th IEC Meeting and 5th Asian Regional Conference in New Delhi in 2009; the 8th International Drainage Workshop in New Delhi in 2000 and the 9th International Micro Irrigation Congress in Aurangabad in 2019.

India has a vast experience to offer in the fields of irrigation, drainage, and water management. ICID and I are thankful to the Hon'ble Chief Minister of Andhra Pradesh Sri Y.S. Jaganmohan Reddy garu, on whose initiative the event is taking place in India in 2023.

Visakhapatnam is a beautiful coastal city of Andhra Pradesh and is home to around 2.3 million people. One of the neatest, nicest and tidiest cities of India. The city is the ninth largest contributor to India's overall GDP ($43.5 billion), oldest shipyard with natural harbour and is headquarter for the Indian Navy's Eastern Command. The South Coast Railway gives access to a diverse range of landscapes surrounding the easily accessible city.

I am confident that the government of Andhra Pradesh and the ICID Indian National Committee (INCID) will not leave any stone unturned for the success of the 75th IEC Meeting and 25th ICID Congress combined with Global Conference and Exhibition. The delegates can be ensured of great hospitality and a rich learning experience. The hosts will be organizing very interesting programmes for the accompanying persons as well as study tours for the participants including places of historic and cultural heritage. India has a rich history and has plenty to offer to its visitors including its famous cuisine, fabric, spices, perfumes and more.

Finally, I would like to extend a cordial invitation to all the prospective delegates for the 25th ICID Congress and 75th IEC meeting combined with the Global Conference and Exhibition in Visakhapatnam, Andhra Pradesh, India. I am looking forward to meeting you there.

Prof. Dr Ragab Ragab
President, ICID

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गजेन्द्र सिंह शेखावत
Gajendra Singh Shekhawat

जल शक्ति मंत्री
भारत सरकार
Minister for Jal Shakti
Government of India

23 JUN 2022

MESSAGE

Water plays a pivotal role in economic, social, and environmental harmony which forms the three pillars of sustainable development.

India is home to about 18% global population and 18% cattle, but has only 4% of the global freshwater resources and has 20 major and composite river basins. Due to increasing demand for domestic, industrial and agriculture use, most river basins are water stressed. This is further accentuated by the fact that water demand is unevenly distributed across the country.

Recognising the importance of holistic water management, visionary Prime Minister of India Shri Narendra Modi brought various activities related to water under one umbrella under the Jal Shakti Ministry in 2019. This has given greater synergy and coherence to water management in India and we have committed investments of more than US $ 140 Billion by 2024 in water sector.

In India, overall irrigation efficiency of major irrigation projects is around 40%. Further, there is an estimated gap of about 20 MHa between irrigation potential created and utilised. To bridge the gap, focussing on convergence of investments in irrigation at the field level so as to expand cultivable area under assured irrigation, to improve on-farm water use efficiency to reduce wastage of water and to enhance the adoption of precision-irrigation and other water saving technologies, various initiatives of Government of India towards sustainable development have been undertaken including Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) – Accelerated Irrigation Benefit Programme (AIBP); Flood Management and Border Area Programme and Rural Infrastructure Development Funds under NABARD.

For facilitating sustainable ground water management, a flagship scheme "Atal Bhujal Yojana" is implemented in identified water stressed areas of the country. The scheme envisages improved source sustainability for Jal Jeevan Mission – an ambitious program to provide Functional Household Tap water Connection to more than 192 Million rural households of the country by 2024, positive contribution to the Government's goal of 'doubling farmers income' and inculcating behavioural changes in community to facilitate optimal water use with emphasis on participatory local water management.

I am very happy to note that ICID's 25th Congress is being hosted in India after 57 years. I compliment CWC, Indian National Committee for Irrigation and Drainage (INCID) and Government of Andhra Pradesh for taking initiative towards hosting this mega-event in India. I am of strong belief that the deliberations of the Congress and International Executive Council Meeting shall pave a way for transfer of knowledge regarding suitable and sustainable technologies to tackle scarcity of water in India.

I wish all the success to ICID, INCID, CWC, and Govt of Andhra Pradesh in future endeavours towards organising the 25th Congress of ICID.

(GAJENDRA SINGH SHEKHAWAT)

जल शक्ति अभियान

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Y.S. JAGAN MOHAN REDDY

AMARAVATI

CHIEF MINISTER
ANDHRA PRADESH

MESSAGE

It gives me immense pleasure that the Government of Andhra Pradesh, on behalf of Indian National Committee, is hosting the historic 25th Congress and 75th IEC meeting of International Commission on Irrigation and Drainage in Visakhapatnam, Andhra Pradesh, India during 6-13, November 2023. I am very thankful to the International Executive Committee of ICID, for accepting our proposal to organize the event here in India after 57 years, as the previous Congress was held in New Delhi in 1966.

Andhra Pradesh is a riverine state with 40 major, medium and minor rivers of which Godavari, Krishna, Vamsadhara, Nagavali and Pennar are major interstate rivers. About 70% of the population of the State depends on agriculture. The State has a heritage of cultivation and irrigation dating back to several centuries. Thanks to ICID for awarding three World Heritage Irrigation Structures (WHIS) awards during 2020 to Cumbum Cheruvu, Porumamilla Cheruvu and KC Canal located in Andhra Pradesh. Out of the 54 irrigation projects taken up under the flagship JALAYAGNAM program, 14 have been completed and the remaining are progressing well. The Polavaram Project on river Godavari, is a National Project, which is the State's life line aimed to complete it early.

Andhra Pradesh has embarked on a new journey of sustainable development with focus on inclusive growth. The Government's "Navaratnalu" and other initiatives have been linked to United Nation's Sustainable Development Goals. In Good Governance Index 2020-21 released by Government of India, the State stood first in Agriculture and Allied Sectors. It is ranked 1st in "Ease of Doing Business" by the World Bank and provides a conducive environment for business to operate and prosper. My Government has secured 1st Rank in the country successively for second time in 2021 evaluated by SKOCH for its best performance in Police and Safety, Agriculture, e-Governance, District Administration and Management and Rural Development.

The state is also ensuring that human and economic development takes place in harmony with environment. The advance estimates of state's economy for 2021-22 shows an overall growth of 16.82 percent at current prices. At a time when education, healthcare, irrigation, agriculture and welfare are being given prominence in my government, the happening of the ICID Congress in Andhra Pradesh is a good coincidence. I extend my warm welcome to the participants across the Globe to visit Andhra Pradesh, the Sunrise State and Rice Bowl of India and the City of Destiny - Visakhapatnam and experience our cultural and rich traditions.

I wish the Congress a grand success adding much to the benefit of water sector all over the World.

(Y.S. JAGAN MOHAN REDDY)

डॉ. आर. के. गुप्ता
अध्यक्ष
तथा पदेन सचिव, भारत सरकार

DR. R. K. GUPTA
CHAIRMAN
***& ex-officio* Secretary**
to the Government of India

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास और गंगा संरक्षण विभाग,
केन्द्रीय जल आयोग
Government of India
Ministry of Jal Shakti
Deptt. of Water Resources,
River Development and Ganga Rejuvenation,
Central Water Commission

MESSAGE

In the core of every developmental activity across the globe water plays a central role in shaping the economy livelihood Water-Food-Energy security, poverty alleviation, and sustenance of environment. The pressure on this natural resource, caused by increasing population, changing lifestyle & food habits urbanisation etc coupled with the climate change impacts is increasing and is already being felt in some parts of India where droughts and flood occur in different parts of the country at different times. This also poses a major challenge to manage water resources in India along with interstate water sharing disputes.

It is imperative to bring in second green revolution by making each drop of water produce more. This has to be achieved through modernizing the existing irrigation infrastructure and providing better irrigation services by utilization of new technologies which are being experimented around the world. ICID with the mission of "working together towards sustainable agriculture water management through inter-disciplinary approaches to economically viable, socially acceptable and environmentally sound irrigation, drainage and flood management" has a vital role to play in supporting its member countries, including India to share these experiences.

The ICID Congress plays a vital role in the capacity development of institutions and individuals alike, by providing an opportunity to interact with professionals spread across the globe in about 80 countries, learn from their experiences, and create a network of dedicated professionals.

First Congress of ICID was held in Shimla in 1951 and 6th Congress was held in New Delhi in 1968. I am happy to note that after a gap of 57 years, the 25th Congress is proposed to be held in Visakhapatnam (A.P.) in November 2023 on account of initiatives taken by Indian National Committee on Irrigation and Drainage (INCID) and Government of Andhra Pradesh. The 25th Congress – a mega event is expected to have a footfall of about 1200 delegates from various institutions spread across the world.

I express my sincere thanks to Government of Andhra Pradesh for setting aside a fund of Rs 5 Crores to meet the expenses towards preparation, promotion, and other logistics for the event.

I wish all the success to ICID, INCID, CWC, and Government of Andhra Pradesh in future endeavours towards organising the 25th Congress of ICID with the hope that deliberations held in different technical sessions of the Congress would be a great learning experience for all, in the field of irrigation & drainage and technological advancements undertaken in different parts of the world in these areas.

(Dr. R. K. Gupta)
Chairman INCID & Chairman CWC

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INTERNATIONAL COMMISSION ON IRRIGATION AND DRAINAGE (ICID)

The International Commission on Irrigation and Drainage (ICID), established in 1950 as a leading scientific, technical, not-for-profit organization working internationally in the field of irrigation, drainage and flood management to promote 'sustainable agricultural water management.' ICID strives to promote policies and programs to enhance sustainable development of irrigated agriculture through a comprehensive water management framework. ICID is committed to enhance the worldwide supply of food and fibre for all people.

ICID as a knowledge sharing platform is dedicated towards improving the status of agricultural water management (AWM) practices including rain-fed agriculture, supplemental irrigation, deficit and full irrigation. The other core areas of activity focus on the drainage of agricultural lands and the management of extreme climate induced disasters, such as floods and droughts. <**http://www.icid.org**>

MEMBER COUNTRIES

Sl. No.	National Committees	Acronym	Year of Joining
1.	Afghanistan	AFGICID	2018
2.	Australia	IACID	1952
3.	Bangladesh	BANCID	1973
4.	Burkina Faso	CNID-B	2014
5.	Canada	CANCID	1956
6.	China	CNCID	1983
7.	Croatia	CRCID	1993
8.	Egypt*	ENCID	1950
9.	Estonia	ESTICID	2001
10.	Fiji	FIJICID	2010
11.	Finland	FINCID	2000
12.	France	AFEID	1953
13.	Georgia	GENCID	2018
14.	Hungary	HUCID	1955
15.	India*	INCID	1950
16.	Indonesia*	INACID	1950
17.	Iran	IRNCID	1955
18.	Iraq	IRQCID	2006
19.	Ireland	IRCID	1978
20.	Italy*	ITAL-ICID	1950
21.	Japan	JNC-ICID	1951
22.	Kazakhstan	KAZCID	2006
23.	Malawi	MALCID	1967
24.	Malaysia	MANCID	1958
25.	Mali	AMID	2005
26.	Mexico	MXCID	1951
27.	Morocco	ANAFIDE	1959
28.	Myanmar	MNCID	1962
29.	Nepal	NENCID	1973
30.	The Netherlands*	NETHCID	1950
31.	Nigeria	NINCID	1970
32.	Pakistan	PANCID	1953
33.	Philippines	PNC-ICID	1956
34.	Portugal	PNCID	1954
35.	Romania	CNRID	1992
36.	Russia	RUCID	1955
37.	Saudi Arabia	SACID	1977
38.	Slovenia	SINCID	1992
39.	Somalia	SONCID	2017
40.	South Africa	SANCID	1993
41.	South Korea	KCID	1969
42.	Spain	CERYD	2021
43.	Sri Lanka*	SLNICID	1950
44.	Sudan	SNCID	1964
45.	Tajikistan	TajNCID	2014
46.	Thailand*	THAICID	1950
47.	Turkey*	TUCID	1954
48.	Ukraine	UACID	1996
49.	United Kingdom	IWF/ICID. UK	1951
50.	United States of America	USCID	1951
51.	Uzbekistan	UzNCID	1994
52.	Vietnam	VNCID	2018
53.	Zambia	ZACID	1966
	Committee		
54.	Chinese Taipei	CTCID	1969

Associate Members: Algeria, Austria, Brazil*, Bulgaria, Chad, Czech Republic, Ethiopia, Germany, Greece, Guyana, Israel, Kenya, Kyrgyz Republic, Lithuania, Macedonia, Madagascar, Mozambique, Niger, Poland, Serbia (erstwhile Yugoslavia*), Slovak Republic, Switzerland*, Syria, Tanzania, Tunisia, Uruguay, Zimbabwe.

For more information, please visit: https://icid-ciid.org/member/national_committees

INDIAN NATIONAL COMMITTEE ON IRRIGATION AND DRAINAGE (INCID)

The Indian National Committee on Irrigation and Drainage (INCID) was originally constituted in 1950 along with the International Commission on Irrigation & Drainage (ICID). INCID is India's representative national committee under ICID.

INCID was re-constituted by DoWR, RD&GR in Aug'2019 with members from central government (CWC, CGWB, ICAR, Ministry of agriculture, Ministry of Jal Shakti, etc), State Water Resources/ Irrigation Departments and, NGOs, private sector, Academic institutes, WALMIs/ IMTIs, Professional Society etc.

Chairman, CWC head INCID and CE (EMO), CWC is its Member-Secretary, and Remote Sensing Directorate, CWC serves as INCID secretariat.

The Objectives of the INCID include:

1. Stimulating and promoting the development and application of irrigation, drainage, river training, and flood control techniques within India.
2. Integrating the efforts of Central Government, State Governments, academic institutions, and private sector in the field of agriculture water management; and
3. Co-operating with the International Commission on Irrigation and Drainage (ICID) for the distribution and interchange of information concerning irrigation, drainage, river training, and flood control between the National Committees of the participating countries.

CENTRAL WATER COMMISSION (CWC)

Central Water Commission is a premier Technical Organization of India in the field of Water Resources and is presently functioning as an attached office of the Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, Government of India. The Commission is entrusted with the general responsibilities of initiating, coordinating and furthering in consultation of the State Governments concerned, schemes for control, conservation and utilization of water resources throughout the country, for purpose of Flood Control, Irrigation, Navigation, Drinking Water Supply and Waterpower Development. It also undertakes the investigations, construction and execution of any such schemes as required. The functional domain of CWC includes:

(a) Appraisal of Water Resources Projects
(b) Basin Planning and Management
(c) Civil & Structural Design of WR Projects
(d) Flood Forecasting/ Hydrological Observation
(e) Monitoring of Water Resources Projects
(f) Dam Safety
(g) Hydrology
(h) Hydro-Mechanical Design of WR Projects
(i) River Management
(j) Survey and Investigation of WR Projects
(k) Water Disputes Resolution
(l) Water Management

INTERNATIONAL CONGRESS ON IRRIGATION AND DRAINAGE

ICID has been organizing its flagship International Congress on Irrigation and Drainage since 1951. The first ICID Congress was held in 1951 at Delhi and so far, ICID has organized 24 Congresses across the globe <**https://icid-ciid.org/event/detail/25**>, the 24th ICID Congress was held in October 2022 at Adelaide, Australia.

The Congress focus on the upcoming issues that need to be addressed in irrigation, drainage and flood management. The Congress also provides a platform for reviewing a number of contentious issues concerning the future of irrigation water vis-à-vis increased demands for competitive uses of water.

The 25th ICID International Congress on Irrigation and Drainage and the 75th International Executive Council Meeting is being is organized by the Government of Andhra Pradesh and the Indian National Commission on Irrigation and Drainage (INCID) on the main theme '**Tackling Water Scarcity in Agriculture'** during **1-8 November, 2023** at Vizag (Visakhapatnam), India. During the Congress, the papers will be presented and discussed answering the Questions 64 and 65. For more <https://icid25congress.in/>.

In addition, Special Sessions, Symposiums, Roundtable, Training Workshops, large number of side events etc. will also be held as part of this mega event.

25th International Congress on Irrigation and Drainage
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 25th 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.

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 rainwater-harvesting systems. Adopting under-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.

Q.64.1 Reinforcing conventional sources of irrigation water

- 64.1.1 Increasing the reliability of water supply in irrigation systems,
- 64.1.2 Rainwater harvesting and management, including rainwater conservation and on-farm storage,
- 64.1.3 Supplementing with sub-surface water through groundwater replenishment and recharge

Q.64.2 Tapping non-conventional sources of water

- 64.2.1 Water budgeting by farmers
- 64.2.2 Wastewater (treated and semi-treated sewage) in Irrigation with Good Agricultural Practices,
- 64.2.3 Managing saline and alkaline water for higher productivity

Q.64.3 Empowerment of farmers

- 64.3.1 Enabling participation through legal instruments – Coperatives, Water User Associations
- 64.3.2 Agriculture Extension Services for irrigation water management,
- 64.3.3 Capacity development through Information Education and Communication

QUESTION 65: Which 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 higher 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.

Q.65.1 Improving management of existing facilities

- 65.1.1 A closer look into the concepts of Water Productivity and Irrigation Efficiency
- 65.1.2 Using real time forecasts on soil moisture, and Extended Hydrological prediction
- 65.1.3 Reducing water flows to sinks - irrecoverable deep percolation and surface runoff - and reusing return flows,
- 65.1.4 Efficient distribution of available water with minimum losses.

Q.65.2 Improved Agronomic practices

- 65.2.1 Timely application of irrigation water
- 65.2.2 Controlling non-beneficial evaporation
- 65.2.3 Minimizing salinization of return flows

Q.65.3 Efficient application of irrigation water

- 65.3.1 Reducing non-returnable losses of irrigation water
- 65.3.2 Pressurised irrigation through piped conveyance systems at farm levels
- 65.3.3 Using technologies such as SCADA, sensor technology and precision application

SEMINAR: National policies for safe re-use of wastewater in irrigation

Sustainable strategies for resilient agriculture under water scarcity conditions require not only the conventional interventions such as planning new infrastructure, improving maintenance, rehabilitation and re-engineering of existing systems, and modifying processes in existing systems and the demands of water users but also tapping wastewater. The increasing water scarcity situation in many parts of the world calls for the introduction of

new efficient technologies and recycling and reuse of wastewater, particularly in agriculture. Wastewater (raw, diluted or treated) is a resource of increasing global importance, particularly in urban and peri-urban areas due to growing wastewater volumes.

Urban wastewater consists of blackwater (excreta, urine and associated sludge), greywater (kitchen and bathroom wastewater), water from commercial establishments and institutions, including hospitals, Industrial effluent and Stormwater and other urban runoff. Unfortunately, eighty per cent of wastewater is released into the environment without adequate treatment impacts human health, and the environment and has economic consequences.

With proper management, wastewater use can contribute significantly to sustaining livelihoods, food security and the quality of the environment. Without proper management, wastewater use poses serious risks to human health and the environment. Wastewater already irrigates approximately 20 million ha of cropland around the world, particularly in low-income dry areas. It provides a reliable freshwater source year-round with high nutrient value sources such as N, P, K, Ca, Mg, and organic matter – those results in savings in fertilizer, saving in groundwater pumping costs and provides ecological services. In addition, the indirect benefits include the prevention of pollution of rivers, canals and other surface water in a low-cost and hygienic way.

About ten per cent of the world's population uses food produced using wastewater. According to a survey conducted by the UN-Water project on the Safe Use of Wastewater in Agriculture 2013 in 62 countries, 42 use polluted water for agriculture. Four out of five cities use wastewater for agriculture, especially in urban and peri-urban areas (based on a survey of 53 cities), mostly untreated or semi-treated. For example, between 0.14 MCM/yr to 1642 MCM/yr (based on data from 34 countries), 10-100% of generated wastewater is already being used in the Middle East and Northern Africa.

Indiscriminate use of poor-quality water for irrigating crops deteriorates the productivity of soils through salinity, sodicity and toxic effects. In addition to reduced productivity, the use of poor-quality water deteriorates the quality of products and also limits the choice of cultivable crops Farmers and their families, the communities residing near the fields being irrigated through wastewater and the consumers of the products are exposed to various degree of health risk. The benefits of wastewater farming far outweigh the drawbacks.

The reuse of wastewater has not received much attention by the policy-decision makers perhaps because of the lack of viable models with necessary research and technology support. Strong policies and legal framework at the national and state levels and sufficient trained manpower in the urban local bodies are required. The situation is likely to get worse unless there is urgent action to manage wastewater better. Reducing unregulated discharge of wastewater and securing safe water is among the most important interventions for improving global public health and achieving sustainable development.

World Health Organisation guidelines for wastewater reuse and Stockholm Framework for Health Risk Management provides a guide to the nations to put in place clear policy on the use of wastewater supported by laws and regulations for its implementation. A suitable legal and regulatory framework is required in each country for the safe use of wastewater.

During the 25th ICID Congress with the theme "Tackling water scarcity in Agriculture" being held in Vishakhapatnam in November 2023, a Seminar on "National Policies for safe use of wastewater in Irrigation" is being organized to enable the National Committees to share their experience in making safe use of wastewater in Agriculture. NCs will be requested to present a country report on the extent of utilisation of this water source, the safety measures being used to prevent its possible ill-effects and the various legal instruments that are being used for the purpose in their respective countries. International partners such as FAO, UNU-NWEH, UNEP, WHO and IWMI would also share their experiences.

SYMPOSIUM: Tackling Climate Change - Role of Storages for Irrigation

ICID Vision 2030 for a water-secure world free of poverty and hunger through its mission to facilitate prudent AWM is its contribution towards fulfilling the objectives of seven, out of the seventeen, Sustainable Development Goals (SDGs) of the UN. The fact that global food production has kept pace with the population over the decades has given rise to a new complacency and has de-prioritized agriculture water management in many countries. Food security, in all its aspects: production, distribution, affordability and accessibility remains a major global challenge as is evident from the events that have unfolded in the last decade or so.

Variability of rain across the seasons, particularly in arid and semi-arid areas of the world often results in drought-like situations that impact agriculture productivity. The storage of water enables the removal of mismatch between variable rain availability and supply providing water as per the crop requirement. At the same time, more water is demanded round the year for raising multiple crops and extending irrigated agriculture. For this purpose, reservoirs are designed to carry over storage to the next season as well. Storages mega to micro, ameliorate such conditions and serve similar purposes.

Climate change is bound to accentuate the production equation of food security. Climate change will increase rainfall variability and average temperatures, affecting both the supply and demand in agriculture water management. In some parts of the world, annual precipitation will decline, decreasing river flows and groundwater recharge. In other places, total precipitation may increase but it will fall over shorter periods with greater intensity so that dry spells are longer. Higher temperatures will increase evaporation so that crops will use more water. This means larger volumes and more frequent use of supplemental water is called for. With increased uncertainty, higher demand and greater competition, water storage is one of the major components of a multipronged approach for adapting agriculture to climate change.

Storages - in the form of ponds, lakes, tanks, small, medium and large dams and groundwater, have played a vital role in stabilizing food production around the world since time immemorial. Future water resources management must also prudently make use of storage for reallocation of water between users and increasing water productivity wherever possible. There is no doubt that storage infrastructure is imperative for securing reliable supplies of water for agriculture and other uses. All storage options are potentially vulnerable to the impacts of climate change. For example, less rainfall and longer dry periods mean that conservation measures for soil water may fail to increase soil moisture sufficiently for crops. Groundwater recharge may be reduced if infiltration decreases. Many near-coast aquifers will be at risk from saltwater intrusion as a result of sea-level rise. Ponds,

tanks and reservoirs may not fill enough to support agriculture or may be at risk of damage from more extreme floods.

The diversity of landforms and the climate are well known around the world. Each country offers useful insights into developing agriculture and water policies. This Symposium on "Tackling Climate Change - Role of Storages for Irrigation", organized by the Indian National Committee along with the 25th ICID Congress will provide an opportunity for the participants to understand the issues related to climate change, the role played by various types of storages in agriculture water management and rural development, and the issues faced in India.

Call for Papers and Guidelines

The abstracts/ papers are invited from the policy makers, professionals, academicians, researchers, experts, and scientists from private and government sectors through ICID Technical Management Portal link to be announced by **1 January 2023** on Congress website <**https://icid25congress.in>**. The tentative deadlines are:

(a) Submission of 'Extended Abstracts' (500-600 words): **31 March 2023**

(b) Notification of Acceptance of Extended Abstracts: **30 April 2023**

(c) Submission of Full papers: 31 May 2023

(d) Notification to Authors (oral/poster/presentation): **30 June 2023**

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://icidevents.org/techmanagement/

(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 by strictly following the guidelines as provided on the Congress website.

VENUES OF THE PAST ICID CONGRESSES

Congress No.	Venue	Period
1	New Delhi, India	11-16 January 1951
2	Algiers, Algeria	12-17 April 1954
3	San Francisco, USA	30 April - 06 May 1957
4	Madrid, Spain	29 May- 04 June 1960
5	Tokyo, Japan	14-21 May 1963
6	**New Delhi, India**	**4-13 January 1966**
7	Mexico City, Mexico	9-19 April 1969
8	Varna, Bulgaria	17-27 May 1972
9	Moscow, USSR	28 July - 02 August 1975
10	Athens, Greece	24 May - 04 June 1978
11	Grenoble, France	31 August 06 September 1981
12	Fort Collins, USA	28 May - 02 June 1984
13	Casablanca, Morocco	21-26 September 1987

Congress No.	Venue	Period
14	Rio de Janeiro, Brazil	30 April - 04 May 1990
15	The Hague, The Netherlands	04-11 September 1993
16	Cairo, Egypt	15-22 September 1996
17	Granada, Spain	11-19 September 1999
18	Montreal, Canada	21-28 July 2002
19	Beijing, China	10-18 September 2005
20	Lahore, Pakistan	13-18 October 2008
21	Tehran, Iran	15-23 October 2011
22	Gwangju, Republic of Korea	14-20 September 2014
23	Mexico City, Mexico	8-14 October 2017
24	Adelaide, Australia	03-10 October 2022*

* Due to COVID-19 pandemic, the 24th ICID Congress was rescheduled from 18-22 September 2020, Sydney, Australia.

Glimpses of the 6th ICID Congress, New Delhi, India, 1966.

ABOUT HOST CITY: VISHAKHAPATNAM / VIZAG

Visakhapatnam's history stretches back to the 6th century BCE. The present city was built around the 11th and 12th centuries. The control over the city: Chola Dynasty, Gajapati Kingdom, Vijayanagara Empire , the Mughals, French and British from 1804 till India's independence in 1947. It is one of the clean cities of India. The city is ninth largest contributor to India's overall GDP ($43.5 billion). It is the oldest shipyard with natural harbour. It is the headquarters for he Indian Navy's Eastern command and South Coast Railway Zone.

Visakhapatnam is one of the main tourism destinations in the state of Andhra Pradesh. The city is famous for beaches, caves and the Eastern Ghats as well as wildlife sanctuaries. About 30% of the city is covered with greenery.

Major landmarks in the city include Dolphin's Nose, lighthouse, Kailasagiri, Beach Road, VMRDA Park, Visakha Museum, RK Beach (Rama Krishna Beach), Rushikonda Beach and Mangamaripeta Beach and Matsyadarsini (an aquarium). The INS Kursura Submarine Museum and Anti-submarine warfare (ASW) aircraft TU 142 Aircraft Museum opposite to each other is the only one of its kind in the world, conceptualising the hunted and hunter of the wars. Indira Gandhi Zoological Park in the city has variety of wildlife species. Erra Matti Dibbalu (Red sand dunes) are situated between Visakhapatnam and Bheemunipatnam are one of the geo-heritage sites in the country. This tourist spot is now protected and preserved as a heritage site. The other tourist points are Vuda City Central Park, Borra Caves, Kambalakonda Wildlife Sanctuary, Araku Valley, Katiki falls, Tenneti park, victory at sea war memorial, Bojjannakond and Ross Hill Church etc.

Some of the religious sites are also of great importance like Simhachalam temple of Lord Narasimha 16 km (9.9 mi) north of the city, and Sri Kanaka Maha Lakshmi Temple. Recent archaeological excavations of Buddhist shrines revealed Buddhist dominance in this area and these are recognised as heritage sites that include Boudharamam, Saligudam, Sankaram and Devipuram etc.

Climate

Visakhapatnam has a tropical wet and dry climate. The annual maximum temperatures ranges between 26-43°C (78.8–109.4°F), with the maximum in the month of May and the minimum in January; the minimum temperatures ranges between 17–27°C (63-81°F). It receives rainfall from the South-west and North-east monsoons and the average annual rainfall recorded is 1118.8 mm (44.05 in).

SPONSORSHIP AND EXHIBITION OPPORTUNITIES

The 25th ICID Congress and the 75th IEC Meeting is providing a special opportunity where businesses can promote their own goods and services to approximately 1500 participants. This will be the largest business event relating to agriculture water management particularly for irrigation and drainage hosting after a gap of 57 years. In addition, ICID's first international event organized in South India (Visakhapatnam) with patronage of the Andhra Pradesh Government. This mega event will give an opportunity to experience the newest skills and products simultaneously and also allow the exchanging of information from worldwide experts in these fields.

The event provides a unique opportunity for participants to network and share their knowledge and expertise related to sustainable agriculture. This includes water management, irrigation, drainage, livestock and crop production – all important aspects that support stable agriculture production with the goal of improving water and food security. The delegates represent a range of government and non-government organisations including policy makers, program managers, scientists, agri-business representatives and not-for-profit development organisations.

To make events like this a grand success, we rely on the generous support of organisations and industry.

EXHIBITION OVERVIEW

- Date: 2-5 November 2023 (Tentative) 10:00 am – 5:00 pm
- Organizers: National Organizing Committee for the 25th ICID Congress & 75th IEC Meeting
- Venue: Exhibition Hall, Radisson Blu Resort, Visakhapatnam, Andhra Pradesh, India
- Scale: Approx. 50 booths to be installed.

HIGHLIGHTS

- Meet various industry-leading products and service companies relating to agriculture, water, and environments
- Consult with industry experts
- Gain valuable face time with thousands of attendees

BENEFITS

- Publicize exhibitor companies on the official Congress website.
- Publicize exhibitor companies on the Congress Mobile App.
- Listing of exhibitor companies in the official directory of the 25th ICID Congress & 75th IEC Meeting.
- Exhibition (the official directory will be included in the registration bag for all the participants)

NATIONAL ORGANIZING COMMITTEE FOR THE 25TH ICID CONGRESS & 75TH IEC MEETING

1	Er. Kushvinder Vohra (present designation Member (WP&P), CWC)	Chairman
2	Mr. Shashibhushan Kumar Principal Secretary, Water Resources Department, Govt. of Andhra Pradesh	Member
3	Chief Engineer (EMO), CWC	Member
4	Dr. K. Yella Reddy Hon. Vice President ICID & Dean, ANGR Agricultural University, Guntur, Andhra Pradesh	Member
5	Er. D. Ranga Reddy Chief Engineer, KGBO, CWC, Hyderabad	Member
6	Er. M. Raghuram Superintending Engineer, HOC, Godavari Circle, CWC, Hyderabad	Member
7	Er. B. A. Chivate Director (Technical), ICID	Member

8	Dr. A. Vishnuvardhan Reddy Vice-Chancellor, ANGR Agricultural University, Guntur, Andhra Pradesh	Member
9	Er. C. Narayana Reddy Engineer-in-Chief (Irrigation), Water Resources Department, Govt. of Andhra Pradesh	Member
10	Er. Bhupinder Singh, (Present designation – Director (WP&P), CWC)	Member
11	Er. Sunil Kumar, (present designation – Director (BP-1), CWC)	Member
12	Er. N.N. Rai (present designation – Director Hyd. (S), CWC)	Member
13	Er. Rishi Srivastava Chief Engineer, BPMO, CWC	Member
14	Er. R. Giridhar Director, CWC	Member Secretary

TOURS

STUDY TOURS

Tatipudi Reservoir

On the River Gosthani in Andhra Pradesh, there is a dam called Tatipudi Reservoir. It serves as the city of Visakhapatnam's water supply reservoir. The Thatipudi Reservoir Project, which spans the Gosthani River, was built between 1963 and 1968. The Project's main objectives are to provide drinking water to Visakhapatnam City and irrigate 15,378 acres (62 km2) in total in the Vizianagaram District. The reservoir's storage capacity is roughly 3 tmcft, and the Project uses 3.325 tmcft of the water that is available. The 15,378-acre (62 km2) Ayacut in the Vizianagaram District's Gantyada, S.Kota, and Jami Mandals has been stabilized.

Dowleswaram Barrage

The Godavari River empties its water into the Bay of Bengal after flowing nearly fifty miles from the Dowleswaram Barrage. Rajahmundry is a city situated on the left bank of Godavari River. Upstream, where the river is divided into two streams; the Gautami to the left and the Vasistha to the right, forms the joining line between the West Godavari and the East Godavari districts. The dam alignment crosses two mid-stream islands.

The original Dowleswaram Barrage was built by a British irrigation engineer, Sir Arthur Thomas Cotton and completed in 1850. The barrage was constructed in four sections, which allowed flood passage during the construction period. The Dowleswaram Barrage was 15 feet high and 3.5 km long.

Cotton's many projects averted famines and stimulated the economy of southern India. Before this barrage was constructed many hectares of land has been flooded with water and was unused. The water would be worthlessly going into sea. But when Sir Arthur Thomas Cotton had built the barrage, those unused lands were brought into cultivation and the water was stored and used. The Cotton Museum was constructed on behalf of Cotton's memory. It is a tourist attraction in Rajahmundry.

SIDE EVENTS

Side events are an opportunity for individuals or groups to bring together a range of stakeholders to focus on one's own specific area of interest in the format of their choice.

TECHNICAL TOURS

Several technical tours will be arranged for participants about irrigated agricultural development in Andhra Pradesh.

ACCOMPANYING PERSON'S TOURS

Several touristic tours will be arranged for accompanying persons during the meeting.

REGISTRATION

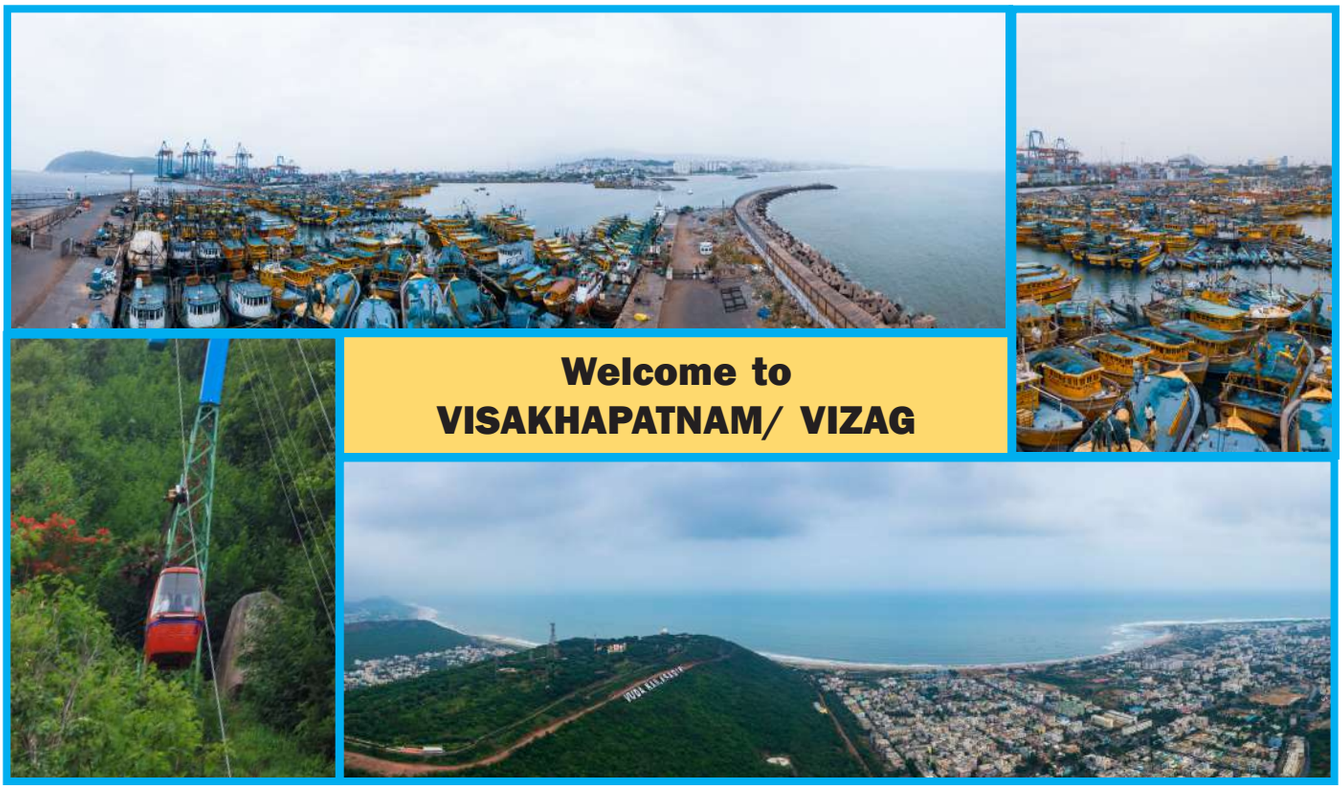
Participants are required to express their interest using the online form to be launched shortly to help the organizers to contact, when the payment system is ready for Registration. Early Bird Registration Discount available for advance booking of registrations.

The On-line Registration will be activated on the Congress website <**www.icid25congress.in**> by **1 March 2023**.

To receive an early bird discounted fees, please register no later than **30 June 2023.**

How to Register

Participants can easily register on website <www.icid25congress.in>. After completing the registration form, a confirmation letter will be sent directly to the participant with Username and Password by the Secretariat. In second step, participant can enter the portal and make their payment by credit card or wire-transfer (INR and USD).



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Central Water Commission

Organized by:

International Commission on Irrigation and Drainge

Indian National Committee on Irrigation and Drainge

Acharya N.G. Ranga Agricultural University

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