International Commission on Irrigation and Drainage

News Update

A Water Secure World Free of Poverty and Hunger through Sustainable Rural Development

March 2020

From Secretary General's desk...

Dear Colleagues,

I am writing this message with a heavy heart considering the global crisis of COVID-19 spread to almost all countries of the world and on behalf of ICID fraternity would like to offer our heartfelt condolences to the families of the victims around the world. It's a global crisis and also the time to show our solidarity with affected countries and people. It is heartening to note that the number of recoveries far outweigh the number of fatalities and it offers hope that soon we will be able to overcome this deadly virus and stay out of danger through international cooperation. Many countries have urged their citizens to maintain safe distances from each other and make full use of electronic media to continue to communicate.

There are important lessons to be learned from this sudden virus outbreak for our sector. The outbreak has demonstrated the increasing interconnectedness of the world. For recovery, we will have to bring back our systems of food production and consumption along with the other agricultural products all of whom rely on water as ingredient. It is quite possible that the recovery will have to be internal resources based as the global resources are already under strain while managing the present livelihoods and health interventions. Most of our developing world, will, therefore, have to rely on efficient and responsive agriculture water management for resetting our products base to provide our populations with adequate support in terms of food security at reasonable costs to ameliorate the erosion of incomes. There has been a large scale loss of jobs in industrial and urban worlds which have led to those job-dependent migrants back to their rural homes and will increase the load on the agriculture productivity for sustaining additional hands. Though I would not suggest that we panic, but, definitely we should be alert and prepared for such global crises. To mitigate the adverse impacts of such global pandemics having negative impacts on global economy, we need to assess our capacities in terms of scientific understanding, water infrastructure, governance, management, technology and most importantly the training of humans involved in the sector at all levels. While a single country or organization may not have all these capacities, international cooperation through professional networks such as ICID do offer a way forward to develop them.

As you may have become aware that on-going and upcoming ICID events such as 5th African Regional Conference in Morocco and the 24th ICID Congress in Australia have been postponed temporarily in the light of the outbreak and consequent government advisory to avoid crowding of people in one place, we need to rely more on electronic channels for real-time communication and enhanced cooperation. In this regard, ICID has launched the Beta-version of new ICID website for your feedback and suggestions, which can be accessed through **http://www.icid-ciid.org.** So, I request you all to help us improve it further. We can also utilize our home bound times by providing webinars and e-discussions on the topics of interest. I invite our experts from our Irrigation and Drainage community to propose such knowledge dissemination initiatives which we can try to support through our resources at ICID. Also, from the year 2020 onwards all nominations for ICID awards and recognition of water heritage sites and systems shall be accepted only through online. You will find the link to this on-line nomination system from both the old and new ICID websites. Similarly, ICID will be using more and more video conferencing and webinar services to carry on its mission and activities.

Due to restricted movement internationally and domestically, this month we were not able to participate in several relevant events and also most events were either postponed or cancelled, therefore we are releasing a light version of ICID News Update for this month. Hope things will get back to normal soon through strengthening of our resolve to tackle climate-change and its negative impact on food, fiber and energy due to water scarcity.

Colleagues, I wish you to stay safe to stay forever!

With best wishes,

Ashwin Pandya
Secretary General

ICID presents on Hydrological aspects of Climate Change

The International Commission on Irrigation and Drainage (ICID) participated in the Roorkee Water Conclave (RWC) jointly organized by the Indian Institute of Technology (IIT), Roorkee and the National Institute of Hydrology (NIH), Roorkee on "Hydrological Aspects of Climate Change," to promote awareness on water resources management.

The three-day conclave (February 26th-28th 2020) was the first of a biennial event of IIT-Roorkee that began this year. The Inter-governmental Panel on Climate Change (IPCC) predicted that the world temperature is likely to increase by 2 to 4 degrees centigrade over the next 100 years.

Climate change can impact the components of the hydrologic cycle, causing changes in the precipitation characteristics, evapotranspiration, surface runoff, snow and glacier melts, recharge of the groundwater, etc. These changes can affect the storage of water in surface and subsurface reservoirs and accelerate the frequency of floods and droughts. Rational adaptation strategies need to be adopted to minimize the adverse impacts of climate change on the country's water resources and ensure its sustainable development and management, to deal with the global challenge of climate change and its effects on water resources.

Secretary-General, Er. A.B. Pandya made a presentation on 'Sound Data Foundation for Water Security' during the technical session. His presentation focused on how data science can play a vital role in the decision-making process of holistic water resources management to ensure water security, particularly in the context of river basin development and transboundary issues.

Reliable data is essential for better forecasting, monitoring, and implementing control processes based on water resources and topography of the case in question. A comprehensive assessment calls for water quality data, ecological and environmental data, climate data, energy data, economic data, and social data as inputs. Presently, administrative boundaries determine water resources planning. However, water availability has not kept pace with the increasing demand for water due to urban growth.

Data collection involves data based on physical measurements for water discharge, data based on observations for assessing water quality, estimated data for quantitative assessment; and, reported data from secondary sources. A proper monitoring system needs to be combined with an efficient information system, followed by a sound operation and planning system culminating in capacity development for the effective use of data. Er. Harish Kumar Verma, Executive Director of ICID, accompanied SG Pandya for the Roorkee Water Conclave.

Assessment of Srisailam and Sardar Sarovar Dams in India

Secretary-General, Er. A.B. Pandya, visited Srisailam Dam in Kurnool district of Andhra Pradesh from 5th -7th March 2020 and Sardar Sarovar Dam near Navagam in Gujarat from 16th 18th March 2020 to help assess the state of the dams, the maintenance levels and suggest remedial measures for proper management and sustainability of these dams. During the discussions with the authorities, it was unveiled that the poor draining soil adversely affects the agricultural productivity in the command area of Sardar Sarovar Dam in Gujarat.

ICID presented at the National Water Academy, India

Er. Harish Kumar Varma, Executive Director, ICID, made a presentation on the activities of ICID at the invitation of National Water Academy, Pune on 4th March 2020. The presentation for Water Engineering Services Officers was well received. In addition to the activities of ICID, his presentation also covered global issues of water and food security. National Water Academy is part of the Central Water Commission of the Government of India, the apex water authority of the country. It was created in 1988 to impart training to in-service engineers of central/state organizations involved in the development and management of water resources.

ICID participates in Workshop on 'Water Security and Sustainable Development in National Capital Territory of Delhi'

The Indian Institute of Technology (IIT), Delhi, and the School of Planning and Architecture (SPA), Delhi jointly organized a workshop on 'Water Security and Sustainable Development in National Capital Territory of Delhi' for stakeholders at IIT Delhi on 13 March 2020. Dr. Sahdev Singh, Director-Knowledge Management, and Ms. Prachi Sharma, Knowledge Officer of the International Commission on Irrigation and Drainage, participated in the workshop.

The workshop was part of the five-year research project on 'Water Security and Sustainable Development Hub' funded by UK Research and Innovation (UKRI) through Global Challenges Research Fund (GCRF) to implement the United Nations Sustainable Development Goals (SDGs). India is one of the twelve such hubs created in the world in 2019.

The workshop adopted a three-pronged approach to deal with the challenges, and this reflected in the three-panel discussions slated for the day on 'Identification of Urban Water Security Issues,' 'Infrastructure Issues' and 'Management Issues.'

Dr. Sahdev Singh was a panelist for the panel discussion on 'Identification

of Urban Water Security Issues.' The panel discussion focused on two issues:

(i) What does 'Urban Water Security' mean to you?

(ii) What are the associated constraints to be considered?

Some of the notable points that emerged during the discussion include: (i) taking a fresh look at the issues concerned; (ii) viewing the challenges in the perspective of the ecosystem and socio-economic framework and resolving them accordingly; (iii) adopting a systematic approach to water use and wastage management; (iv) practicing the 3 R's: Reduce, Recycle, Reuse to ensure water security, and, (v) addressing water pollution issues.

In addition to these, infrastructural issues such as water supply, groundwater, storage, canals, meteorological, and data considerations; and, other management issues also came up during the subsequent panel discussions.

The research project intends to create a framework for planning, monitoring, and periodic assessment of the project to address technical, environmental, and social issues. It also wants to encourage community participation and support in negotiating policy improvement by communicating the outcome of research to policymakers. The research on NCT of Delhi will take into its fold, all departments related to water supply, sewerage networks, drainage systems, flood control, etc. It will carry out a water audit to engage with all stakeholders to ensure water security for the NCT of Delhi in a sustainable way.

Vice President visits Central Office of ICID

Vice President of the International Commission on Irrigation and Drainage (ICID) and Dean, Faculty of Agricultural Engineering and Technology, ANGR Agricultural University, Guntur, Andhra Pradesh, Dr. Yella Reddy, visited the central office of ICID in New Delhi on 27th February 2020. Dr. N Trimurtulu, Dean of Agriculture, accompanied him on this trip. They stopped by on their way to Ludhiana to review the progress of their students undergoing training programs at the Post Harvest Institute of Engineering Technologies. Dr. Reddy met the officials of the ICID central office and discussed his initiatives to promote ICID activities in Andhra Pradesh. He also had a brief discussion about the upcoming 2023 ICID Congress.

International Classroom for MOOC on Drainage in Agriculture

The Wageningen University (WUR), Netherland invited Dr. Yella Reddy, Vice President of the International Commission on Irrigation and Drainage (ICID) from India along with experts from Egypt, Belgium, Ethiopia, France, Morocco, and the Netherlands for a workshop to develop a Massive Open Online Course (MOOC) on 'Drainage of Agricultural Lands' during March 9th-13th, 2020. Prof. Dr. Henk Ritzema from WUR was the coordinator of the workshop.

Dr. Reddy has gained vast experience in the Irrigation, Drainage and Water Management research in

Andhra Pradesh through the Indo-Dutch Network Project. He was also associated with the Andhra Pradesh Water Management Project for which the WUR had collaborated with ANGR Agricultural University. With this kind of experience, he should be able to make significant contributions to this course.

Dr. Reddy visited UNESCO's IHE Delft Institute for Water Management on 10th Mar 2020 and met the VPH Laszlo Hayde and VPH Dr. Mrs. Charlotte. He made a presentation on 'Adoptive Measures at Farm Level for Improved Water Management' and interacted with the students and faculty to discuss various issues related to water management.

Concluded Webinar on Solar Powered Irrigation Systems

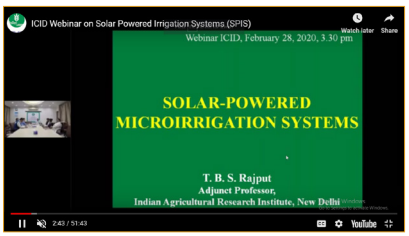
Dr. T B S Rajput, Adjunct Professor at the Indian Agricultural Research Institute (IARI), New Delhi, presented a webinar on Solar Powered Irrigation Systems (SPIS) on 28th February 2020 from the International Commission on Irrigation and Drainage (ICID) central office in New Delhi. Dr. Neelam Patel, Principal Scientist, and In-charge, Centre for Protected Cultivation Technology, Indian Agricultural Research Institute (IARI), New Delhi joined in as the expert panelist for the webinar.

Advocating for the use of SPIS for irrigation, Dr. Rajput, said that solar energy is not only a free source of energy but also a clean and environment-friendly source of energy. It provides a reliable source of energy at reduced operating costs. It is a viable alternative to diesel and electric pump sets that add to global warming through high emission levels. Since solar energy is abundantly available for free, it provides insurance against fluctuating fuel prices. Some cell-module-solar-panels come with an auto-rotate function which moves according to the movement of the Sun. The use of SPIS for micro-irrigation is a winning combination as it is more productive and is not affected by power cuts and fuel shortages. Most parts of India have clear sunny weather for 250-300 days a year. On average, we can produce solar energy to the tune of 4kwh/sq. meter per day. The solar energy potential of India is about 5 trillion kwh per year. SPIS works well with the water-saving technique of drip irrigation. SPIS is compatible with the surface, subsurface, and floating pumps.

Dr. Rajput narrated three success stories of SPIS. The first one relates to a canal-based project of Talwara in Punjab. The project generates 930 HP of solar power, which lifts the water from the canal and stores it in a reservoir from which it goes for irrigation. The second story is about small farmers of the Alwar district of Rajasthan who acquired SPIS under a state government scheme and used it for Kharif onion crop successfully during the lean season. And, the third success story relates to a farmer from Haryana who offered his land for building a tank and trained local farmers to carry out paddy cultivation with drip irrigation powered by SPIS from that tank.

Dr. Neelam Patel spoke of the significant progress that India has made in water resources development. However, 50% of land owned by small farmers depends on rainfed agriculture. As most of them do not have assured water supply or access to any power grid, SPIS provides an excellent option.

In the question-answer session, Mr. Manoj wanted to find out how

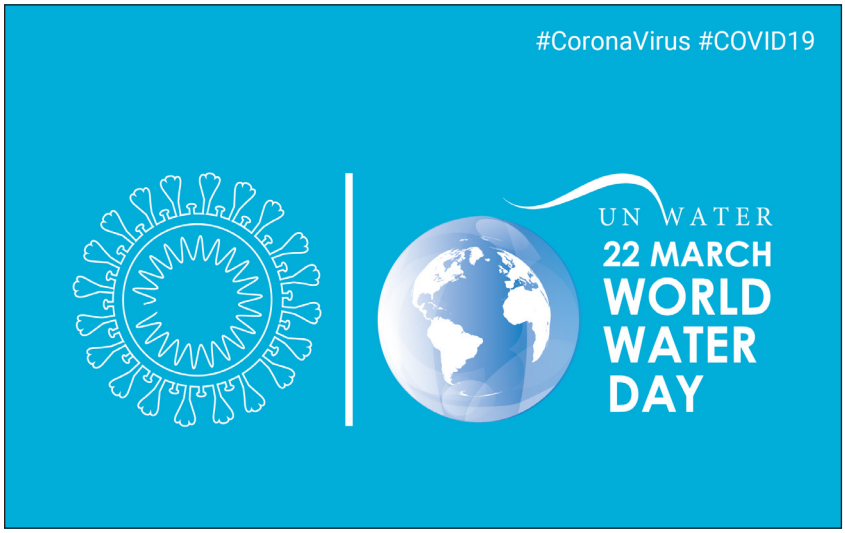


to discourage the over-extraction of groundwater through pump sets. Responding to this question, Dr. Rajput said that currently, farmers are using 10/15/20 HP diesel or electric pump sets to draw water from wells for surface irrigation. But the government allows SPIS with a maximum capacity of 5 HP, which automatically reduces the quantity of water extraction. Also, SPIS cannot be used during the night as it operates on sunlight. That way, it restricts the over-extraction of groundwater through pump sets. Taking a question from Mr. Mario regarding capacity required for a 1 hectare farmland, Dr. Neelam Patel recommended a 5KW pump set for flood irrigation. But she added that a 3 KW pump could irrigate 1 hectare land by integrating the SPIS with a drip irrigation system. Successful implementation of SPIS requires a conducive policy environment, locally adaptable business model, the adequate capacity of farmers, extension workers, and water management professionals.

News from Cooperating International Organization

UN-Water: COVID-19: World Water Day face-to-face Observances Postponed

The face-to-face events for the World Water Day scheduled for 22nd March 2020 and thereabouts in Geneva, Rome, Paris, and New York were postponed by UN-Water, because of the global spread of the COVID-19 virus as per guidance from the World Health Organization. However, a dedicated web page was created for the occasion where organizations and stakeholders could find advice on how to keep meetings and workplaces safe, thereby helping to limit the spread of the coronavirus. The United Nations will continue to address this global issue by providing timely situation reports, technical guidelines, and other advisories.



FAO: Traditional Farming System in Brazil Added to Global Agricultural Heritage List

The UN Food and Agriculture Organization (FAO) recognized a conventional farming system practiced in the Southern Espinhaço Mountain Range of the Minas Gerais State in Brazil as Globally Important Agricultural Heritage Systems (GIAHS). The GIAHS recognition went to a Brazilian site for the first time for this traditional farming system. This recognition acknowledges the local people's activities such as gathering, processing, and conservation of native flowers in the common-use highlands; herding of livestock along traditional migration routes; a collection of fruits, seeds, medicinal plants in the natural environment in ways that play important roles in regulating the rainfall of the region. These mountains are home to some 90 species of crops, including vegetables, fruit trees, tubers, etc. The local communities have developed unique skills and practices to maintain genetic resources and enhance the agrobiodiversity of the region. With this, FAO has granted GIAHS recognition to 59 contenders in 22 countries.

Election of Coordinator and Joint Coordinator of IYPeF

The International Commission on Irrigation and Drainage (ICID) Central Office is pleased to announce the results of the online election process of ICID-Young Professionals' e-Forum (IYPeF) held from 26th February 2020 to 5th March 2020 for the posts of Coordinator and Joint Coordinator. Based on the nominations received from the National Committees of ICID, the following members are declared elected for the year 2020-2021. Congratulations.

(i) Dr. Ms. Eman Ragab Mohamed Nofal (Egypt), **Coordinator**

(ii) Mr. Hassan Farahani (Iran), **Joint Coordinator**

ICRISAT: Training the Present to Feed the Future in Nine Countries

At a training program organized by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) Hyderabad in February 2020, twenty-five agriculture extension officers and trainers from nine African and Asian countries gained the latest knowledge in agriculture practices, agribusiness, food safety, and smart food. Participants who attended the 42nd Feed the Future India Triangular Training program (FTFITT) said the key takeaways from the program were the solutions to problems in food production faced in their home countries and 'Good Agriculture Practices for Sustainable Agriculture in Developing Countries.' The participants came from Myanmar, Sri Lanka, Nepal, Kenya, Mozambique, Liberia, Bangladesh, Tanzania, and Uganda in addition to the Indian delegates.

Uzbekistan to Implement Water-Saving Technologies for Irrigation in a Big Way

The Uzbekistan government is going all out to implement water-saving technologies on a massive scale under a 10-year-plan. In 2019, 61 units switched over to the new system. By 2030, the government hopes to implement this project on 1,000 units.

The government has already used water-saving technologies on 130 thousand hectares, out of which 77.4 thousand hectares are under drip irrigation. By 2020, the area under water-saving techniques would increase to 250 thousand hectares. The target for 2025 is 1.0 million hectares, with the area under drip irrigation between 250-300 thousand hectares.

The Smart Water System is a joint venture of Uzbekistan with the Korean International Cooperation Agency (KOIKA). The project includes an automated water accounting and control system. The project identified ten sites in 2020 for automation of the process of water resources management using information and communication technologies. And, by 2030, it will reach 100 places.

"A whopping 35 million US dollars are being pumped in for research, development, and scientific achievements in the water sector of Uzbekistan during 2021-2022, which is likely to increase to 60 million US dollars by 2030. This project aims to train 5,000 young specialists and 7,000 teachers and specialists. If this comes through, it will be one of the most significant cases of capacity building in agriculture for a country of its size.

The 5th African Regional Conference and Young Professionals' Training Program Rescheduled

The 5th African Regional Conference on Irrigation and Drainage (ARCID) and Young Professionals' Training Program (YP-TP) scheduled for 11th -19th March 2020 at Marrakech, Morocco, have been rescheduled at the request of the Moroccan National Committee (ANAFIDE) on the directions of the Moroccan Government due to COVID-19. The new schedule will be announced as and when it is finalized.

Finnish National Committee gets New Secretary

ICID is pleased to welcome Mr. Mika Turunen as the new Secretary of the Finnish National Committee on Irrigation and Drainage. (FINCID) Mr. Turunen is a post-doc researcher with the Natural Resources Institute Finland (Luke). He is interested in soil-water-atmosphere systems and environmental system analyses with computational methods. Currently, the main focus is on hydrological modeling, 3D imaging, and data analysis. He has 18 research items, 1,273 reads, and 81 citations to his credit. His contact details are Email: mika.turunen@luke.fi, Website: **http://www.fincid.fi**

Webinar on Role of Safety Standards and Land Subsidence in Sustainable Development and Management of Flood Prone Areas

Date: 19 May 2020, 02:30 - 03:30 PM (Indian Standard Time)

For Registration: https://register.gotowebinar.com/register/1697910241716202253

Introduction

Although there is worldwide a major concern for the impacts of climate change on extreme rainfalls, increase in peak river discharges and sea level rise, 80 – 90% of the urbanization takes place in flood prone areas. These areas are the lowlands located in the river floodplains, deltaic and coastal regions. The development and management of these areas requires an integrated approach. Two important aspects in this approach are the design standards for drainage and flood protection provisions, and land subsidence. With respect to this the risk of flooding is generally insufficiently taken into account, resulting in inadequate measures to prevent or at least reduce this risk. In addition, in the majority of these areas there is land subsidence, which in extreme cases may be even more than 20 cm per year. The combination of these two aspects requires due attention to prevent, or reduce calamities in these sensitive, and often highly urbanized, flood prone areas.

In this webinar Prof. Schultz will present an inventory of the relevant values, processes and approaches. Attention will be given to how they may impact the conditions in these areas and what measures can be considered to take them into account in sustainable development and management.

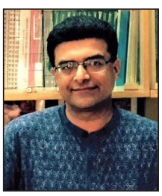
SPEAKER: Prof. em. Bart Schultz, Land and Water Development IHE-Delft, Former Top Advisor Rijkswaterstaat, The Netherlands & President Hon. ICID

The career of Em. Prof. Bart Schultz includes more than 40 years of research, advising and project implementation in the field of land and water development, drainage, irrigation, flood management and environmental engineering.

He worked as Head of the Water Management Division in the Ijsselmeer polders Development Authority, and as Head of the Environmental Engineering Department and Top Advisor in the Civil Engineering Division of Rijkswaterstaat. At IHE Delft he was responsible for education and research in Land and Water Development.

He is author of more than 325 papers and visited about 35 countries to participate in international research, appraise, evaluate, or advice in projects and to teach. He was President of ICID (1999-2002) and is still Chairman of the Editorial Board of Irrigation and Drainage. He received the 2nd World Irrigation and Drainage Prize 2016 at Thailand.

Professor Dr. Vishal Narain visits ICID Central Office



Prof. Dr. Vishal Narain, Chairperson, Public Policy and Governance, Management Development Institute, Gurgaon, India visited ICID Central office in the last week of February 2020. He is an Indian, inter-disciplinary water expert and researcher. In particular he is interested in the relationship between technologies and institutions in water management, and how they are impacted by each other. He explores these issues using qualitative research tools with a strong reliance on ethnography. He has been working extensively on periurban issues, especially in the context of vulnerability and adaptation to environmental change and water insecurity.

He met with the officials and discussions were held about possible collaborations, he will be presenting a webinar for our ICID audience in the coming months.

ICID attends workshop on Catch the Rain: Rain Water Harvesting and Artificial Recharge Structures for Water Conservation

National Water Mission (NWM), India organized a workshop on "Catch the Rain : Rain Water Harvesting and Artificial Recharge Structures for Water Conservation" on 13th March, 2020 at Mirza Ghalib Chamber, Scope Complex, Lodhi Road, New Delhi. Ms. Shreshta Sharma, Knowledge Management Consultant represented ICID at the event.

The work shop witnessed eminent speakers who shared their grassroots experience, techniques and views on Rain Water Harvesting Structures and Artificial Recharge for Water Conservation within India and abroad. Resource persons from the Central Ministries, State Government officials, industry & research organizations also participated in the workshop. Stories were also narrated by various NGOs, local community people and researchers.

National Water Mission's 12th Water Talk

National Water Mission (NWM), India has initiated a lecture series 'WATER TALK' to promote dialogue and information sharing among participants on variety of water related topics. The aim of 'WATER TALK' is to stimulate awareness, build capacities of stakeholders and encourage people to become active participants to sustain life by saving water on earth. Sharing ideas among participants enhances knowledge, ensures consistent dissemination of information and builds capacities in better water management. The programme is intended to be platform to transfer knowledge, solve problems, brainstorm and promote teamwork among various participants. The WATER TALK programme also provides an opportunity of 'learning something new' and 'broadening our perspective through sharing of knowledge and experience. NWM organised the Twelfth Water Talk on 21st February, 2020, ICID was represented by Ms. Shreshta Sharma, Knowledge Management Consultant.

Shri Ayyappa Masagi, Founder and Director, Water Literacy Foundation was the guest speaker and delivered the talk. From his personal experiences and experimentations in rural India, he discussed about sustainable water management, restoration of natural hydrological balance, rain water harvesting and grey water harvesting during his talk. He said that the global problem of water can be solved through local intelligence.

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International Commission on Irrigation and Drainage (ICID)

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