



# **ICCW QUARTERLY NEWSLETTER**

## **Issue 10**



## ICCW, Last Quarter...

Dear friend,

Team ICCW trusts you're safe.

Here we bring to you some exciting news about our activities in the past quarter including insights from water experts and news on the projects of ICCW.

Happy reading!

## ICCW Turns Two!



*1 - TEAM ICCW*

International Centre for Clean Water (ICCW) celebrated its second anniversary on April 22, 2021, through an online event.

Dr. Shekhar C. Mande, Director General, Council of Scientific and Industrial Research (CSIR), the chief guest speaker of the day, delivered a talk on 'Water in Biology'. Highlighting the importance of water conservation and appreciating the massive work being done by Prof. T. Pradeep, Dr. Mande said that it is the collective duty of all of us to conserve water.

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<sup>1</sup><https://mailchi.mp/iccwindia/subscription>

Prof. Bhaskar Ramamurthi, Director, IIT Madras, spoke on 'IIT Madras and social transformation'. He said that IIT Madras Research Park is a place where we incubate all our startups. It is a place where some of these translational research centres have been set up, including the ICCW.

Speaking on ICCW and its vision, Prof. T. Pradeep, Professor In-charge, ICCW, and Institute Professor, IIT Madras, said, "Ensuring clean water for all is the most essential, but seemingly insurmountable global challenge. Along this direction, ICCW is taking baby steps in offering functional, sustainable and socially responsible solutions."

E. Nandakumar, CEO, ICCW, presented the comprehensive report on ICCW and described the centre's new initiatives and offerings.

ICCW also launched a music video 'Rivers of India' during the event. The event can be viewed on IIT Madras YouTube Channel<sup>2</sup>.

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*"The earth, the air, the land and the water are not an inheritance from our forefathers but on loan from our children. So we have to handover to them at least as it was handed over to us." - Mahatma Gandhi*

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## 'Rivers of India': A Tribute to Our Rivers



2 - Bombay Jayashri and Amrit Ramnath



3 - Kaushiki Chakraborty and Rishith Desikan

To promote awareness on river conservation and the need for preservation, ICCW, IIT Madras, launched a six-minute-long music video on Earth Day (April 22). The video was launched during the second anniversary celebrations of ICCW. 'Rivers of India' showcases major rivers across India, their

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<sup>2</sup><https://www.youtube.com/watch?v=vUylxVHxM2s>

beauty and mightiness, their origins from the mountains, how they are flowing through landscapes, the alarming situation of river contamination, and the need for preserving the rivers for the future generations.

Created by IIT Madras distinguished alumnus Dr. Kanniks Kannikeswaran, the video features prominent musicians including Bombay Jayashri, Amrit Ramnath, Sai Shruvanam, Kaushiki Chakraborty and Rishith Desikan.



*4 - Dr. Kanniks Kannikeswaran*

The video uploaded on the YouTube channel of IIT Madras and ICCW has crossed more than 180,000 views and is quickly drawing attention from people across the country. Set in the ragas Yamuna Kalyani and Keeravani, the lyrics mention 51 major rivers from all over the country.

Speaking about the making of the music video, Dr. Kannikeswaran, said, “The keyword is the reverence for rivers, and then taking it to the stage of overuse and its consequence, environmental pollution, the course correction, hope, collaboration, awareness people coming together and finally a message of hope to come together.”

To read more click here <sup>3</sup>

The music video ‘Rivers of India’ can be viewed here <sup>4</sup>

## **Prof. T. Pradeep Receives 25th Asia Nikkei Asia Prize 2020**



<sup>3</sup><https://www.thehindu.com/entertainment/music/the-river-song/article34446742.ece>

<sup>4</sup><https://www.youtube.com/watch?v=7wmCGm8k2eU>

Prof. T. Pradeep received the prestigious Nikkei Asia Prize 2020 in the 'Science and Technology' category. The award is in recognition of his pioneering work in nanotechnology-based water purification.

In his award receiving speech, Prof. T. Pradeep thanked all the individuals and institutions who helped him build his science. He said that affordable clean water is a problem of advanced materials. "The arsenic poisoning in drinking water across the globe is posing challenges to the health of the people consuming it. Advanced affordable nanomaterials can solve this problem and can provide arsenic-free drinking water for 2.1 paise per litre," he said.

The Nikkei Asia Prizes are conferred on individuals who have contributed to Asia's sustainable development and the creation of a better future in the region. They are awarded annually in three areas - Economic and Business Innovation, Science and Technology, and Culture and Community.

Past awardees from India include Dr. Manmohan Singh, N. R. Narayana Murthy, Prof. C. N. R. Rao, Kiran Mazumdar-Shaw, Dr. Devi Prasad Shetty, Nandan Nilekani, and Dr. Bindeshwar Pathak, among others.

To view the speech click here <sup>5</sup>

## EyeNetAqua: ICCW Incubated Start-up for Water-based Sensors



ICCW incubated a new startup EyeNetAqua, recently for the development and commercialization of IoT-based sensing technologies for the monitoring of water and related health parameters. EyeNetAqua also acts as a business commercialization platform for the technologies developed at ICCW.

The company is led by Dr. Kamallesh Chaudhari, Principal Scientist, ICCW with guidance and support from Prof. T. Pradeep (Institute Professor, IIT Madras). Recently, ICCW and IIT Madras have set up a consortium of companies to integrate the best of sensors and water quality and quantity monitoring technologies to create a Smart Water Measurement, Monitoring and Control System. EyeNetAqua as a company being incubated at ICCW has support from the consortium members to integrate as well as develop new technologies for water quality monitoring.

With this background, EyeNetAqua has participated ICT Grand Challenge 2020 by the Ministry of Electronics and Information Technology. As a part of this challenge, a prototype of an online water quality monitoring unit was demonstrated at CDAC, Bangalore. EyeNetAqua was one of the 10 shortlisted companies out of 213 applicants for this demonstration. The water quality monitoring

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<sup>5</sup><https://dstuns.iitm.ac.in/pradeep-research-group.php>

unit was explained for the measurement of pH, TDS, Residual chlorine, Nitrate, Fluoride and water volume. EyeNetAqua has been selected for the next round of the competition and it will work with a partner company Ilonnati Innovations Pvt. Ltd. on product development and deployment. A product for an online water quality monitoring unit will be developed and deployed at 25 villages in Haryana, Rajasthan and Manipur.

Apart from this, EyeNetAqua is also focusing on the lab-to-field transition of technologies for the low-cost portable devices. These technologies use portable devices and sensors for the testing of fluoride, free chlorine and arsenic in field environments. A low-cost, digital, field test kit reader has been developed as a part of this work. EyeNetAqua is working with researchers at ICCW and IIT Madras to enable successful field validation of the devices and sensing technologies.

## ICCW to Monitor and Analyse Groundwater Quality



ICCW has started a project to assess various water ground quality parameters on the spot and upload the details on to a cloud server. The centre is collecting data that can help in analysing the quality of water of a region. The results can be retrieved online at any time of the year.

Roping in students from Stella Maris college to collect the data, the pilot project has begun in Chennai to map the groundwater quality of the city.

The team has collected samples and tested them from 39 locations. This will be expanded to 60 more locations. The centre is also developing miniature sensors to test the quality of the tap water and treated sewage water.

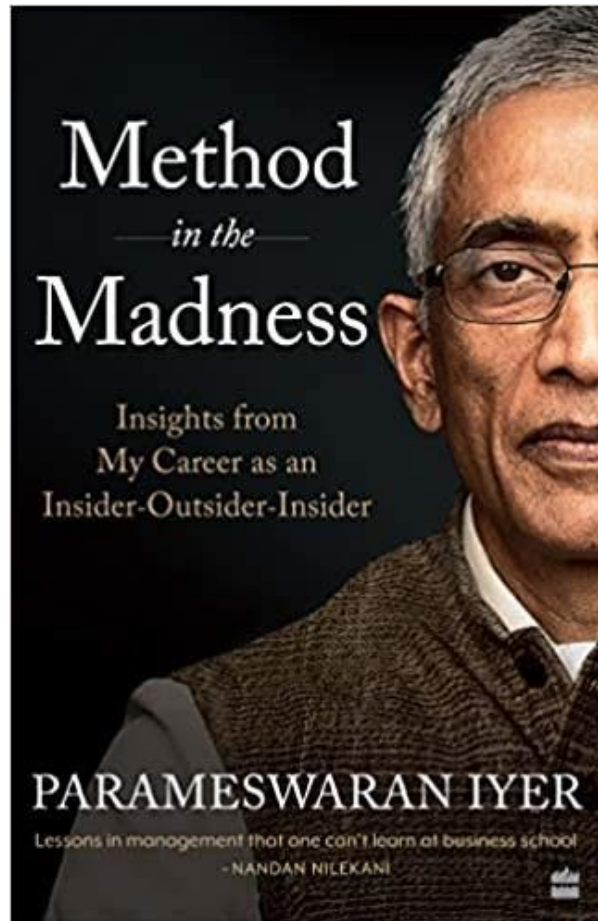
Click here <sup>6</sup>to read more.

## An Evening with Parameswaran Iyer



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<sup>6</sup><https://timesofindia.indiatimes.com/city/chennai/iit-m-iccw-plan-studies-to-forecast-groundwater-quality/articleshow/83096487.cms>



ICCW and IIT Madras conducted a 'meet the author' event with Mr. Parameswaran Iyer to appreciate his new book, 'Method in the Madness'. Mr. Parameswaran Iyer, a former Secretary to the Government of India, is best known for leading the implementation of the Swachh Bharat Mission (SBM) – Prime Minister Narendra Modi's flagship programme, which became the world's largest sanitation revolution.

Published by HarperCollins, the book is a compilation of fascinating vignettes from the life of an unconventional civil servant – the unique path he chose – from cracking the IAS to becoming a globe-trotting World Bank technocrat, to playing the role of a coach to his professional tennis-playing children, to finally returning to India and implementing the SBM. Written with wit and wisdom, the inspiring read is full of key management insights, practical career advice, and valuable life lessons that will resonate with readers across age groups and professions.

Unlike a typical bureaucrat, Iyer has of a far-from-usual career combining two distinguished tenures in the government and an eventful stint outside it. He describes himself as an uncommon 'Insider-Outsider-Insider'. Apart from the staff of ICCW, the event was attended by teachers and students of IIT Madras.

## WaterTalk 9



On May 28, Kalimuthu Arumugam, Program Director at WAtEr, Sanitation and Hygiene (Wash Institute Delhi) spoke on the 'Swachh Bharat Mission 2.0 - Importance of Faecal Sludge and Septage Management (FSSM)'. He stressed the importance of eradication of open defecation individual HH Toilets and community & public toilets. India's open defecation-free journey started in 2014.

Phase 1 of the SBM covered 550 million people and changed their behaviour. Over 10 crore toilets were built and 603,175 villages were declared as open defecation-free. However, there is no proper sewerage network in our country as of now. Weak sanitation has significant health costs and untreated faecal sludge and septage from cities is the single biggest source of water resource pollution in India. Stressing the importance of FSSM, he discussed various Swachh Bharat Mission (U)2.0 components including sanitation, solid waste management, wastewater management, and discussed the need for IEC activities, capacity building, and PHE institute of excellence.

To sustain the efforts of SBM 1.0, SBM 2.0 should also address any gaps in toilet coverage and ensure that no one is left behind. There should also be capacity strengthening in all *sarpanches* and *swachhagrahis* and continued IEC for behaviour change.

## WaterTalk 8





Mr. Ramprasad V, Co-Founder, and Convenor, Friends of Lakes, and Federation of Bengaluru Lakes spoke on 'The integrated approach for lake rejuvenation and management.'

It was in the year 1989 that a group of schoolboys started a social group, Friends of Lake in Bangalore, to plant trees in their neighbourhood. Over 32 years down the line, the informal group has become one of Bengaluru's most prominent citizen-led collectives in rejuvenating the city's dying lakes.

Ramprasad stressed the importance of the connection between the engineer and the citizen group in lake rejuvenation. To conserve the lakes along with Biome and Atree, Friends of Lakes has created a Lake Health Index that indicates the health of lakes. He said that the lake health index tracks a lake's water quality, avian life, aquatic life, encroachment security, and the status of wetlands.

An integrated approach towards lake rejuvenation means that the lake is not seen just as a water body for social gatherings or a beautification site. Lakes should be seen as a recharge structure, climate change structure and have an important role in bringing down the weather problems in the area.

## Transforming Water Research to Implementation



C. Sripati, Expert Engineer, ICCW addressed a session on 'Transforming Water Research to Implementation' at a recently conducted one-day seminar on Industry Best Practices Sharing Session on Advanced Technologies in Water Management by Confederation of Indian Industry(CII). He spoke on the areas of research transformed to implementation citing the examples of IITM incubated solutions including InnoDi's capacitive deionization units, air-water generators of VayuJal and Amrit technology. He also explained the prototyping and validation done at the labs of ICCW including a low-cost, paper-strip-based fluoride sensor and a microfluidic sensor for water quality testing.

## New Recruitment



### **Ashesh Mahto**

Ashesh has joined as a project scientist. His current research interests lie in the field of wastewater treatment, desalination, and waste/biomass value-addition. He received his Ph.D. degree in Chemical Science from CSIR-CSMCRI, Bhavnagar, and has worked as a Senior Research Associate at Centre for Nano & Material Sciences, Jain University, Bengaluru.

**Thank You!**



**Umang Khanna**

ICCW thanks Umang Khanna for his service to the institution. Umang joined ICCW as Project Engineer in January 2020 and worked with the implementation vertical. He assisted the team at the AIRP implementation project in Punjab. Thank you, Umang! We wish you all the very best in your career and life.



**Dr. E Jayanthi**

ICCW thanks Dr. E Jayanthi who was a Project Scientist, for her relentless service to the institution. Jayanthi was involved in the development of fluoride and arsenic sensors for water quality measurements. Thank you, Jayanthi. We wish you all the very best for a bright future!

## Visitors of the Season



*6 - Immanuel Kingsley Vice President and his team from Hexaware Technologies*



*7 - Dr. S Rajasekaran & team from MAM College of Engineering & Technology.*



8 - Vilvaraj, AGM, Sales, Kristal Abrasives

Now, Presenting ICCW's Recommended Read for the Season...



**Mission Economy: A moonshot guide to changing capitalism**

**Author: Mariana Mazzucato**

**Publisher: Harper Business**

**Hardcover: 272 pages**

Even before the Covid-19 pandemic in 2020, capitalism was stuck. It had no answers to a host of problems, including disease, inequality, the digital divide, and, perhaps most blatantly, the environmental crisis. Taking her inspiration from the 'moonshot' programmes which successfully coordinated public and private sectors on a massive scale, Mariana Mazzucato calls for the same level of boldness and experimentation to be applied to the biggest problems of our time. We must,

she argues, rethink the capacities and role of government within the economy and society, and above all recover a sense of public purpose. Mission Economy, whose ideas are already being adopted around the world, offers a way out of our impasse to a more optimistic future.

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Visit us on the web: [iccw.world](http://iccw.world)<sup>7</sup>

## Thank You!



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<sup>7</sup><https://iccw.world/>