

ANNUAL REPORT



Clean water
for all

INTERNATIONAL CENTRE
FOR CLEAN WATER

2018 - 2019

An initiative of IIT Madras





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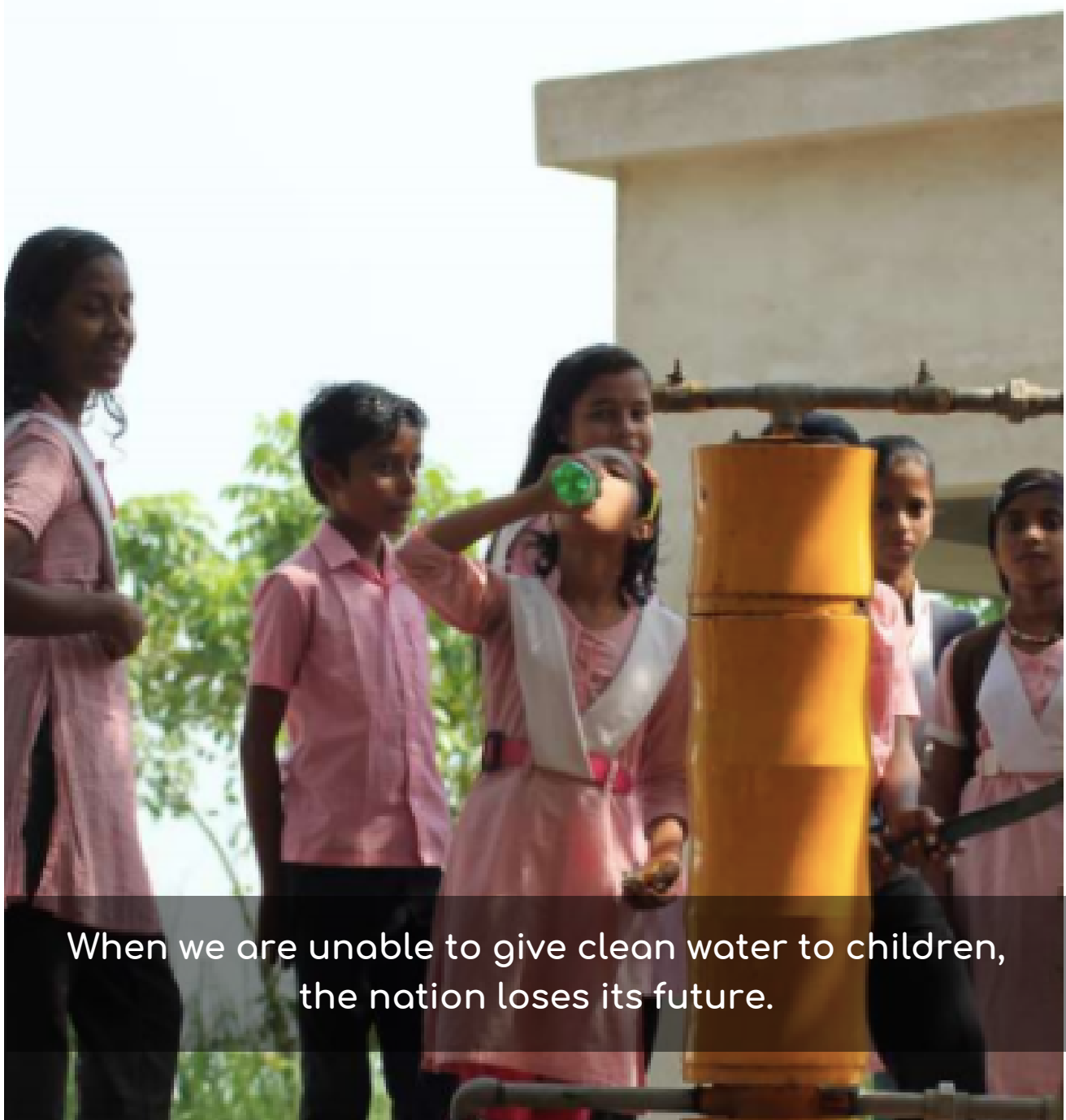
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When we are unable to give clean water to children,
the nation loses its future.

AMRIT (Anion and Metal Removal by Indian Technology) for safe drinking water, from Professor Pradeep's team.

STANDING ON THE SHOULDERS OF A GIANT

Over more than two decades, Pradeep Research Group, Indian Institute of Technology Madras (IITM), has systematically developed advanced, yet affordable technologies to solve major water-related problems debilitating our country. With limited funds, they started building sophisticated equipment and resources from scratch, which yielded remarkable results. The success attracted more funding.

Subsequently, a Thematic Unit of Excellence (TUE) was instituted at IITM in 2016. It is spread over 9000 square feet, housing the latest analytical instruments like Inductively Coupled Plasma Mass Spectrometer (IC-PMS), Raman Spectrometer, Ion Chromatograph, etc.

Over 450 papers have been published and 110+ patents have been filed or granted. In the last five years, five companies have been incubated, whose technologies are providing nearly ten million people across India with clean drinking water. Ten million is, however, only 0.7% of India's population! It is beyond the capabilities of an educational institution to take on the responsibility of scaling up implementations to reach different parts of our country. More solutions are needed to address various challenges of clean water. Clearly, a new entity is needed to develop new technologies and to expand the reach of existing technologies.



Professor T. Pradeep, Mr. Deepak Parekh, Chairman, HDFC, and Professor Bhaskar Ramamurthi, Director IITM, during the inaugural of ICCW on April 22, 2019.

The International Centre for Clean Water (ICCW) is envisioned as a place for disruptive technologies, on a large scale, for sustainable clean water with collective participation of the global community. It is a not-for-profit organisation, located in 21,000 sq. ft space inside the IITM Research Park (IITMRP) - India's first university-owned research park.

ICCW team is grateful to HT Parekh Foundation for providing an initial grant towards setting up the physical infrastructure. IITM donated analytical equipment, to provide the necessary impetus to start the centre.

Work on the physical infrastructure for ICCW commenced in January 2019. Intense work made it possible for a soft launch on March 18, 2019, by Professor Bhaskar Ramamurthi, Director IITM. The facility was formally inaugurated by Mr Deepak Parekh, Chairman, HDFC, on April 22, 2019.

INTENT

"A place to ideate, nurture, and translate disruptive technologies for sustainable clean water."

International Centre for Clean Water (ICCW), an initiative by the Indian Institute of Technology, Madras (IITM), partnering across the government bodies, co-operatives, NGOs, and industries, will shape the path of delivering clean water through sustainable means. Specific ICCW actions include:

- > to bring together scientific minds across the globe to converge under one roof.
- > to develop integrated water research, nurture technologies and incubate companies.
- > to build a network across academia and industry.
- > to strengthen the socio-economic linkages related to water at the grassroots across the country.
- > to train water professionals and to encourage water sustainability approaches.

CELEBRATING THE BIRTH OF ICCW

The year 2018 is when ICCW came into existence. In 2019 began to shape into physical reality with people, our network of professionals, laboratories, interaction space, incubation hub, IITMRP ecosystem, and a dynamic online presence. Although it is a reality now it is only a foundation. More work is needed to take advanced materials and associated technologies to make clean water and clean environment, in general. ICCW is built on the inheritance of researchers and students working on solving the diverse contamination problems in drinking water, ranging from pesticides, arsenic, fluoride, lead, and harmful microorganisms. The science and technology in any other field, say gold or carbon nanotubes, would scale heights; however, the satisfaction that comes with delivering clean drinking water from the laboratory to the society at large is immeasurable.

In a world where we are witnessing increased water stress by day, at ICCW, we aim to bring in water stewardship, that is sustainable, with a clean footprint. We established formally on March 18, 2019, soft-launched by Professor Bhaskar Ramamurthi, Director IITM. The centre will promote, help develop, and implement water-related technologies backed by standard certification, sustainable O&M, and IoT. We have entered into new partnerships and sponsorships, paving a busy work path. We are making our voice heard on the international platform through our strong network of investigating participants, collaborative firms, and social media.

We believe that water management is inevitable for future prosperity and even survival; in addition to our research and implementation work, our outreach arm will ignite debates and awareness around the value of water. The momentum for work has garnered a high promise towards objective achievements of the centre and deliver the dream.

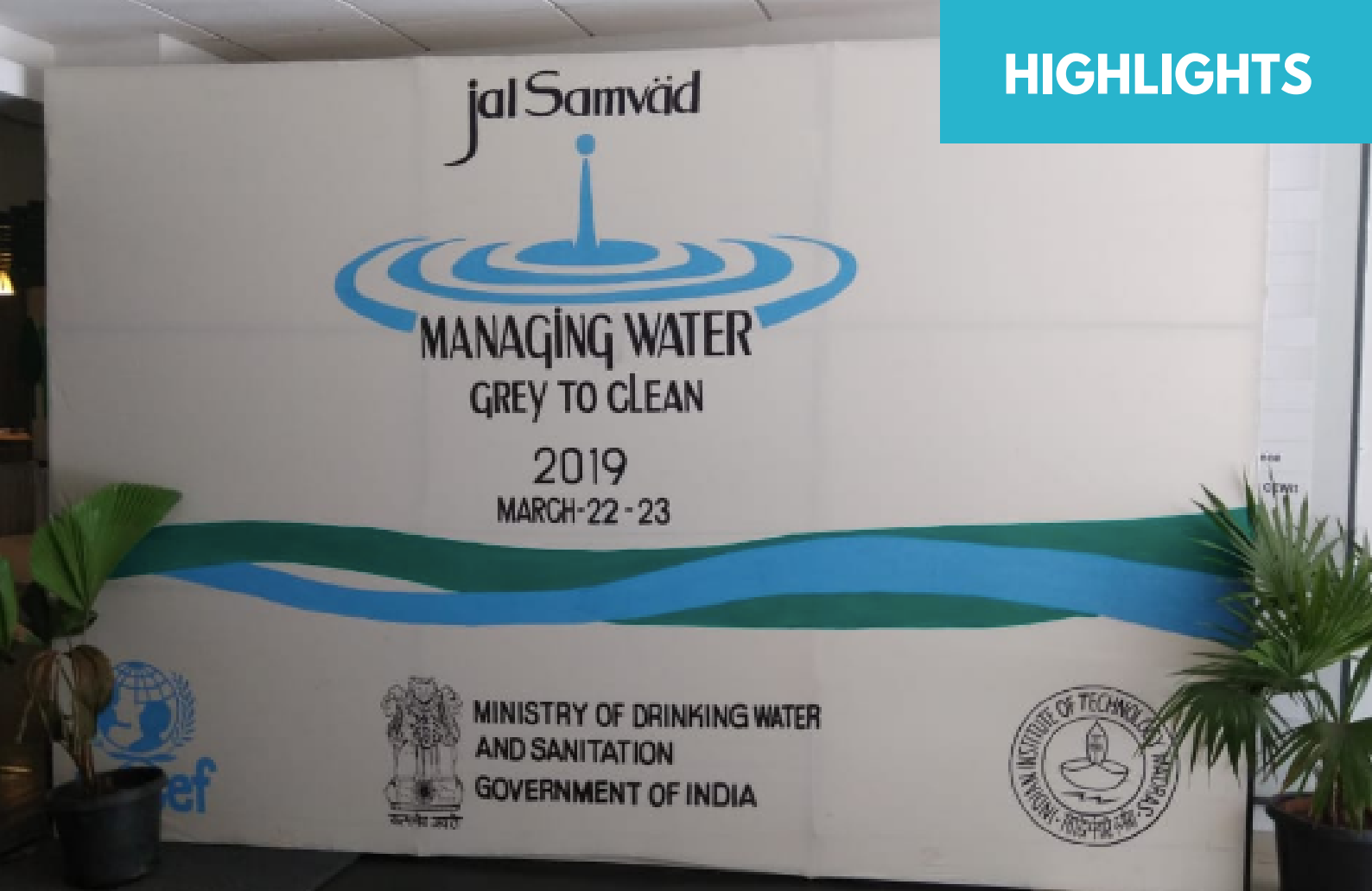


2018 -19 FORMATIVE YEAR

ICCW entrance.



ICCW today.



- Water audit for [Wheels India Limited](#).
- [InnoDI Technologies](#), an incubated company, in collaboration with [Baxter International](#), started R&D activities at our center.
- Water filter membrane testing and analysis of filtrate, for [Baxter and InnoDi Technologies](#) - work in progress.
- 95 Domestic water treatment units in a village have been implemented, followed by [O&M training](#) of locals, periodic water quality analysis for arsenic and iron, and evaluation reporting under a scheme of [Government of Punjab](#).
- Implemented CDI units for community drinking water solutions, in 2 locations at Thane district, by [Naandi foundation](#).



Community installations for drinking water
by Naandi Foundation, Thane, India, in July 2019

- Water quality testing around mines in 22 locations and drinking water provision, in Chhattisgarh for [Hindalco](#), a leading copper and aluminium manufacturing company.
- MOU between IOCL-SRPL ([Indian Oil Corporation Limited - Southern Regional Pipelines](#)) and IITM for providing drinking water kiosks using CDI technology powered by solar energy by ICCW in Ramanathapuram and Tuticorin districts of Tamil Nadu.
- MOU between Naandi and ICCW for the development of projects for water security and stewardship covering raw water and wastewater.



From L to R: Dr. Kamallesh Chaudhari, Dr. Srividya Kailasam, Mr. Abhishek Vaidianathan, NCWS, Ms. Divya Yachamaneni, CEO, NCWS, Mr. E. Nandakumar, Dr. Ramya Dwivedi, and Mr. Sripati Cowlagi on November 28, 2019.

- Developing low-cost, mobile-enabled sensors for fluoride ions in water with grant support.
- Contract awarded for implementation of customized 68 units of water treatment systems in [Telangana Social Welfare Residential Educational Institutions Society](#) (TSWREIS), schools.

- Atmospheric water generator (AWG) installed at [Taramani Guest House](#), IITM, delivering 400 litres per day (LPD)



AWG at the Taramani guest house at IITM, March 2019

- 100 LPD AWG were supplied to five customers.
- MOU between [Marmon Water Inc and Buckman Laboratories](#) to test and certify their products.
- MOUs with [Hand in Hand India](#) for joint implementation of clean water projects.
- Professor T. Pradeep appointed by the Ministry of Jal Shakti as member of its 'Technical committee for examination and use of innovations and technologies in drinking water and sanitation sector'
- MOUs and consortia membership agreements signed with [InnoDi Technologies and Aquaworks-Filtrex \(Marmon Group\)](#) for collaborative development of new technologies.

- Mapping of resources for water security at [Rameswaram island](#).



Mr. Sripathi Cowlagi, Expert Engineer, at the community discussion, Rameswaram island, in August 5, 2019.

- One day interactive session on repositioning domestic [Reverse Osmosis \(RO\)](#) water purification systems.



Participants at the session on repositioning domestic RO water purification systems, November 29, 2019.

- One day interactive session on 'Sensors', December 10, 2019.



Professor Graham Cooks delivering a talk at the meeting on Sensors in ICCW, on December 10, 2019.



Participants at the meeting on 'Sensors' at ICCW, on December 10, 2019.

- One day interactive session on [rainwater harvesting](#).



Participants at the rainwater harvesting session, July 12, 2019.

- WaterTalk 1, 2, 3 - inspiration, involvement and innovation - monthly talks by professionals in the water sector



Prof. K. E. Seetha Ram
Senior Consulting Specialist,
ADBI

WaterTalk 1
Theme: Capacity Building for
Water Professionals



Dr. Indukanth Ragade
Organis chemist

WaterTalk 2
Theme: Sustainable Water
Management



Dr. Jayashree Vencatesan
Trustee, Care Earth Trust

WaterTalk 3
Theme: Wetlands Conservation
- Issues and Challenges

DISSEMINATING KNOWLEDGE

Value of water - sensitisation and creation through publications and communication.

Report on
Rapid assessment framework of
Water resources security mapping
for
Rameswaram island comprising
Rameswaram municipality, Thangatchi Madaham
and Pamban Panchayat

Submitted to
Hand in Hand Initiative development services, Chennai
Submitted by

International Centre for Clean Water (ICCW)
87 Madras Research Park, Chennai

September 2019

Revised in October 2019



unicef
for every child

TECHNOLOGIES FOR REMOVAL OF ARSENIC FROM DRINKING WATER A DRAFT ANNEXURE TO

THE INVESTIGATION ON CONTAMINATED WATER IN THE PUNJAB (CHANDIGARH)
REPORT, PREPARED BY NATIONAL INSTITUTE OF WATER AND
WASTEWATER TECHNOLOGY, MINISTRY OF DRINKING WATER AND SANITATION,
GOVERNMENT OF INDIA

Submitted to
MINISTRY OF DRINKING WATER AND SANITATION,
GOVERNMENT OF INDIA

Submitted by
Indian Institute of Technology, Madras
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March 2019

Pocket guide for rainwater harvesting

This pocket guide by ICCW is primarily to provide an overview and sound stand concepts in rainwater harvesting, for government, business and community level and to be used as a reference and as a guide for implementation.

ONE DAY INTERACTIVE SESSION ON RAIN WATER HARVESTING



International Centre for Clean Water - an IIT Madras initiative



www.iccw.in

Executive Summary

Prof. Dr. Graham Cooks
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GOVERNANCE & MANAGEMENT

BOARD MEMBERS



Professor Bhaskar Ramamurthi
Director
IITM



Professor T. Pradeep
Institute Professor, IITM
Professor-In-Charge, ICCW



Professor Ashok Jhunjhunwala
Institute Professor
IITM



Professor Ravindra Gettu
Professor
IITM



Professor Ligy Phillip
Professor
IITM



Professor Tiju Thomas
Assistant Professor
IITM



Professor Rajnish Kumar
Associate Professor
IITM



ICCW Team photo, front, L-R: Dr Kamallesh Chaudhari, Mr. Sripathi Cowlagi, Prof. T. Pradeep, Dr.

Srividya Kailasam, Mr. E. Nandakumar,

middle, L-R: Mr. V. Vishnu, Dr. Ramya Dwivedi, Dr. Vidhya Subramanian, Ms. Rekha Ganesh, Ms. Radha,
and last: Mr. Nagarajan



Prof. T. PRADEEP

**PROFESSOR-IN-CHARGE
&
INSTITUTE PROFESSOR
~ IITM**

Professor T. Pradeep is an Institute Professor at the Indian Institute of Technology Madras, Chennai, India. He is the Deepak Parekh Institute Chair Professor and is also a Professor of Chemistry. ICCW is an outcome of his team's research work on materials and the impact it has created on clean water. He is the Secretary and Professor-Incharge, ICCW.

He studied at the University of Calicut, Indian Institute of Science, Bangalore, University of California, Berkeley and Purdue University.

He is a recipient of several awards including the Shanti Swaroop Bhatnagar Prize, BM Birla Science Prize, National Award for Nanoscience and Nanotechnology, India Nanotech Innovation Award and JC Bose National Fellowship. He is the winner of The World Academy of Sciences (TWAS) Prize in Chemistry for the year 2018. He is a Fellow of all the science and engineering academies of India and is a fellow of the Royal Society of Chemistry, The World Academy of Sciences and American Association for the Advancement of Science.

He is a distinguished professor in a few institutions in India and is also on the graduate faculty of Purdue University. In 2015, he received the Lifetime Achievement Research Award of IIT Madras. His research interests are in molecular and nanoscale materials and he develops instrumentation for such studies.

Pradeep is involved in the development of affordable technologies for drinking water purification and some of them have been commercialised. His pesticide removal technology is estimated to have reached about 10 million people. His arsenic removal technology, approved for national implementation, is delivering arsenic-free water to about 1,000,000 people every day.

He is on the editorial boards of journals such as ACS Nano, Chemistry of Materials, Chemistry – An Asian Journal, Nanoscale, Particle, Scientific Reports, International Journal of Water and Wastewater Treatment, etc. He is an associate editor of ACS Sustainable Chemistry & Engineering.

As part of his philanthropic activities, he supports a school in his village where 500 students are on rolls, employing over 50 teachers. He is a writer and a science communicator.



E. Nandakumar

CEO

Mr. E. Nandakumar comes with a unique boundary-less mindset. With a career spanning over three decades in multinational organisations, he has always enjoyed cutting across functional silos to deliver customer satisfaction.

“Customers look at organisations horizontally, but executives look up vertically for decisions and this creates problems at the functional boundaries”.

Unsurprisingly, the bosses were not always happy! Now as the CEO of ICCW, he is eager about providing opportunities to a team of outstanding people to help them excel in achieving significantly positive results. He is also looking forward to collaborating with various external stakeholders to deliver sustainable, green and healthy clean water solutions to the world.

An alumnus of IIT Madras (1984) and XLRI (1988), Nandakumar left the corporate world in 2017 to focus on helping Start-ups and MSMEs achieve rapid, exponential growth. He is an active mentor in the start-up ecosystem at the IIT Madras Research Park and is a certified Instructor-cum-Mentor for the Lean Start-Up methodology. He is also a trained facilitator for Lean, TPM, TOC, TQM & Six Sigma and has played a lead role in the turnaround of two businesses.

He is focusing on the development of a world-class R&D facility at ICCW. He is driving verticals on the sensors for water quality testing and certification of water purifiers.

Dr Kamalesh Chaudhari is an MSc graduate, IIT Kharagpur, and a PhD from IIT Madras. He was a postdoctoral fellow at the University of Alberta, Edmonton, Canada. He has contributed in the execution and management of India-UK and India-Germany collaborative research projects on the development of arsenic and fluoride sensors for water quality testing.

Dr Kamalesh's ongoing work is heading towards real-time geographical monitoring of water quality parameters with the help of novel IoT based sensors.



Dr. Kamalesh Chaudhari

PRINCIPAL SCIENTIST



Mr. Sripathi Cowlagi

EXPERT ENGINEER

Mr Sripathi is working in clean water and wastewater management across the industry, community, municipal, and domestic sectors towards improving water-use efficiency. He is an expert in project management, advisory services, knowledge management, policy development and revenue generation at the centre. He is interested in project stakeholder management, skill and curriculum development, training and capacity building.

He has developed participatory approaches with several stakeholders of the government (Central and State), industry, and community. He has contributed as Team Lead in reducing water pollution by 35% in industrial areas of Delhi and improved the efficiency of performance of CETPs in the city of Delhi. The implemented sustainability standards for Planning and Retrofitting of Industrial Areas in Delhi.

He contributed to improvement by 30% in cleaner production and resource efficiency in MSMEs and developed concessionaire for the management of industrial areas. He also developed digital outputs on layout, physical and social infrastructure of industrial areas. He has developed Skills handbook on wastewater for operators/technicians of ETPs/CETPs. He trained 5000 operators, technicians, helpers, chemists, supervisors, managers, executives. He also implemented over 150 water audits, translating to 90 billion cubic meter water-saving projects. He has contributed to the amendment of National Water policy 2012.

He is a graduate in Chemical Engineering from MIT Manipal, a post-graduate in Energy Engineering and vocational training and education from DWA German Association for Water, Wastewater and Waste



Dr. Srividya holds a PhD in Chemistry with specialization in analytical chemistry from IIT Madras and had nearly 5 years of postdoctoral training in the US. Vidya, as she is known to us, honed her skills as an analytical chemist and as a teacher in the nearly fifteen years that she spent in industry and academia.

Over the years she has cultivated an interest in the application of sophisticated technologies for solving real-world problems. At ICCW, she will be responsible for driving the quality management, water quality testing and data analytics.



Dr. Srividya Kailasam

PRINCIPAL SCIENTIST



Dr. Ramya J Dwivedi

SENIOR SCIENTIST

Dr. Ramya Dwivedi is currently involved in outreach, training, IEC, and scientific research. Dr. Ramya received her degree in Chemistry from South Gujarat University, Biotechnology from DBT, Pondicherry University and PhD from Savitribai Phule Pune University. She worked at National Chemical Laboratories (CSIR-NCL), Pune, for her doctoral research work entitled, 'Surface functionalization of nanoparticles and their biological applications.'

She worked as an Assistant Professor at the Nanotechnology research Centre, at SRM University, where she taught 'Physics in Nanoscience and Nanotechnology'. She was awarded the prestigious CSIR Nehru Science Post-Doctoral Fellow in the field of Nanosciences in 2010. She has also freelanced as a science writer.

Ramya is zealous about science communication; she brings with her integrity and enthusiasm for scientific work. More recently Dr. Ramya has been associated with the ICCW team for outreach activities and research funding.



Mr. Vishnu graduated in Science from Calicut University and did his post-graduation in Analytical Chemistry from Bharathiar University.

He worked in the industry for 3 years. He has rich experience in materials testing laboratory. He is adept in spectroscopic and chromatographic techniques and sample preparations for testing.

Formerly, Mr Vishnu was the Quality Head and Production-In-Charge at Messi Aqua Minerals. He strongly believes in learning and growing along with the organization.



Mr. Vishnu V

ANALYST



Mr. Elango Kamalasekaran

ENTREPRENEUR

Mr. Elango Kamalasekaran is a Chennai-based entrepreneur with 3 decades of entrepreneurial experience in Start-up & Development of organisations in the fields of Environment, Infrastructure & Sustainability.

He is the Co-Founder & Director of Eco Services India Pvt. Ltd. and Total EHS Advisory Services LLP. In both these companies, he has embarked on the journey of delivering comprehensive Environment, Health & Safety services to support Urban Infrastructure development & Workplace Health & Safety.

He was also the Founder Director of BI Marketing and Services Pvt. Ltd. as well as G.E.T. Water Solutions Pvt. Ltd., a group of organisations offering various equipment and services in Water Management with operations all over South India.

Strengths include the development of Organizations to exceed customer as well as business expectations, Finance management, Sales and Marketing, HRM, Investor Relations and establishing worldwide networks for the various business enterprises.

He is an engineer having completed his B.E. Mechanical Engineering from the College of Engineering, Guindy, Anna University in 1986. He is an avid runner and cyclist.



Currently, she is also the Customer Development Expert. She will also be focusing on scientific research and outreach activities.

Dr. Vidhya received her M.Tech degree from Anna University, Coimbatore. Her PhD (IIT Madras) was titled "Integrating Technologies to Create Modular Sensors for Water Quality Monitoring." Her research interests lie in the design and development of sensors.



Dr. Vidhya Subramanian

PROJECT SCIENTIST



Dr.T.N.V.V. Rao

PROJECT ADVISOR

He is a doctorate in Environmental Chemistry from Andhra University, Visakhapatnam and an M.B.A. in Operations with over 27 years of experience in Water Purification Technologies and related business development.

He is a member of water-related technical committees (CII, BIS, WQA, etc.). He is actively involved in the development of standards for RO water purifier, microbiological standard and convenor for developing a standard for arsenic, fluoride and nitrate purification devices. He has also worked on water treatment technologies like UV, NF, RO, Nanotechnology, and CDI.

He is also an expert in providing support in Zero Liquid Discharge, doing water quality analysis, designing drinking water treatment technologies, STP & ETP, conducting water audits, and providing training programs for water treatment.

She has over 17 years of experience in the corporate world. As an office manager and administrator, she coordinates events, conducts workshops, maintains books and manages the office inventory.

She is also responsible for processing travel reimbursement and other costs that are incurred by the staff. Her strength lies in coordinating and working with people at all levels of the organisation.

She is a BBA graduate from the University of Madras. An extremely efficient office administrator, she is also a multi-linguist, dancer and an avid fitness enthusiast.



Ms.Rekha Ganesh

OFFICE ADMINISTRATOR

ENGAGING WITH US

Any water-related problem needs a well-planned approach, meticulous research, technological solutions, and thoughtful implementation. Our engagement models are evolved considering all of these.

Consortia Memberships

Consortia membership is available, in different tiers, for any organization/institution who would like to have privileged or intensive access to ICCW facilities and resources. InnoDi Technologies and Marmon Water Inc. are Gold Tier Members.

Joint Developments

We invite individuals, industries, corporates and NGOs to collaborate in joint development projects; where the expenses are covered by the sponsors and the intellectual property can be mutually shared.

InnoDi Technologies: Development of ultra-pure water for medical applications, home water purifiers using CDI.

SMARTNet Solutions: Water network mapping, detecting leakage and automation for reduction of non-revenue water (NRW) in transmission and distribution network.

Solinos: Robotic imagery and data analytics of pipeline conditions to identify and predict leaks for rectification.

Sponsored Projects

From prototype to full-scale implementation and five-year operations & maintenance support of emerging technologies in water purification and testing - could also involve educating and training end-users on the new technology for autonomous management.

"Development of high flow rate CDI systems coupled with inline fluoride sensors," sponsored by IITMF (IIT Madras Foundation - US).

Consultancy Services

Water audits, water resource security assessments followed by interventions to enhance the availability and quality of water in a sustainable manner.



Professor T. Pradeep with our honorable PM Shri Narendra Modi at the ICCW stall during his visit to IITMRP on September 30, 2019 organized by the IITMRP incubation cell.

2020 - The Year Ahead

A strategic direction

This is 'the dawn of a golden era of water professionals' (IWA Strategic Plan 2019); the need and birth of ICCW are now evident than before. The year 2020 will see ICCW establish itself as one of the best places for water research, testing, and analysis; and for technological innovation, incubation and implementation. ICCW aims to bring together cutting-edge research on sustainable, energy-efficient and environmentally responsible water use. The nature of the on-going projects at ICCW will conduce a platform for informed water decisions. Our directions can be briefed as below.

ICCW to evolve and adapt

Upgrade skills and infrastructure of laboratories and analysts to make these services available in an affordable and reliable manner. Consult in water security studies of industrial establishments and communities at village/taluk/district level with indexed reports and prioritized action plans. Collaborate with manufacturers of water treatment systems to help them develop newer technology products and take them to market faster by providing a range of testing and certification services. Work with user industries to solve their water recycling and conservation challenges by bringing to bear the interdisciplinary expertise available at IITM.

Leadership in water security

Number of people covered to be increased from 50,000 to 5 million with corresponding groundwater savings going from 1.5 billion litres to 1500 billion litres per annum. Mentor startups within and outside the centre and integrate their technologies for diverse solutions in the water sector. Evaluate and create prototyping of multifarious solutions available for water quality testing. A facility on the certification of water purifiers will be established for the rigorous evaluation and quality assessment of various products available in labs and the market. Promote greater water stewardship across common people in collaboration with NGOs.

Research arm

The Fundamental research pursuit will focus on membranes, resins, electrochemistry and nano-materials for developing them into affordable cutting-edge technologies for different water treatment applications. Low-cost, rapid assessment sensors with very low limits of detection (ppb) for toxic contaminants such as arsenic, mercury, etc. such that they can be used by anyone, including school children. This is to enable the user to instantly check the quality of water before consumption. The developed sensors can also be integrated into treatment plants for real quality monitoring and analysis.

Data collection and analysis

Study to create a database of groundwater quality across the country by deploying sensors in secure locations is underway. This will be followed by an update of the data frequently, with analytics to generate customised information for different stakeholders. Promote knowledge for water-wise communities. The first annual international conference, 'Water for Life' will be conducted by ICCW at the IITMRP, in December 2020. It is a conference providing for an international forum for the presentation and discussion of frontier research and technologies in water and related sciences. Erudite water professionals, scientists, students come under a canopy to find solutions for a self-reliant tomorrow. Likewise, quarterly talks are scheduled for 2020, bringing stalwarts in the water sector within the reach of students, water scientists, business leaders and the common man. These talks are planned for an interactive session enthusing the students. Development of online course curriculum and conduct training sessions on water laboratory management. Skill development and training on wastewater for operators, technicians and helpers of effluent treatment plants and common effluent treatment plants.

Promote knowledge for water-wise communities

The first annual international conference, 'Water for Life' will be conducted by ICCW at the IITMRP, in December 2020. It is a conference providing an international forum for presentation and discussion of frontier research and technologies in water and related sciences. Erudite water professionals, scientists and students come under a canopy to find solutions for a self-reliant tomorrow. Likewise, quarterly talks are scheduled for 2020, bringing stalwarts in the water sector within the reach of students, water scientists, business leaders and the common man. These talks are planned for an interactive session, enthusing students. Development of online course curriculum and conduct training sessions on water laboratory management are other plans. Skill development and training on wastewater for operators, technicians and helpers of effluent treatment plants and common effluent treatment plants are other plans.

STRATEGIC PLAN 2020 - 25

Research, Analysis and Certification

Research, develop and incubate cutting-edge technologies for existing and new age contaminants. Develop and commercialise low-cost mobile enabled sensors that empower consumers, including school children, to instantly check their water quality. Build a countrywide water database with analytics for different user segments. Testing and certification services for water technology for rapid prototype to market. “Train the trainers” program for competency development in analytical testing laboratories.

Solution Implementation

Water resource mapping followed up with consultancy on specific interventions to enhance water security in industries and districts. Improve drinking water quality by large-scale deployment of arsenic and fluoride removal technologies with sustainable O&M on an IoT backbone. Integrate sensors into remediation plants for real-time quality monitoring and providing quality assurance to consumers. Lead communities towards greater water stewardship and water conservation by creating awareness and inculcating the practice of rainwater harvesting, greywater management and increased water efficiency.

Outreach

Continually bring together different stakeholders from academia, industry, government, charitable societies and technology providers to evolve relevant, affordable technologies and solutions. Build human capacity in testing & analysis of water quality, operations & maintenance of treatment plants, recycling of wastewater, harvesting rainwater through training programs, conferences and round-table sessions.

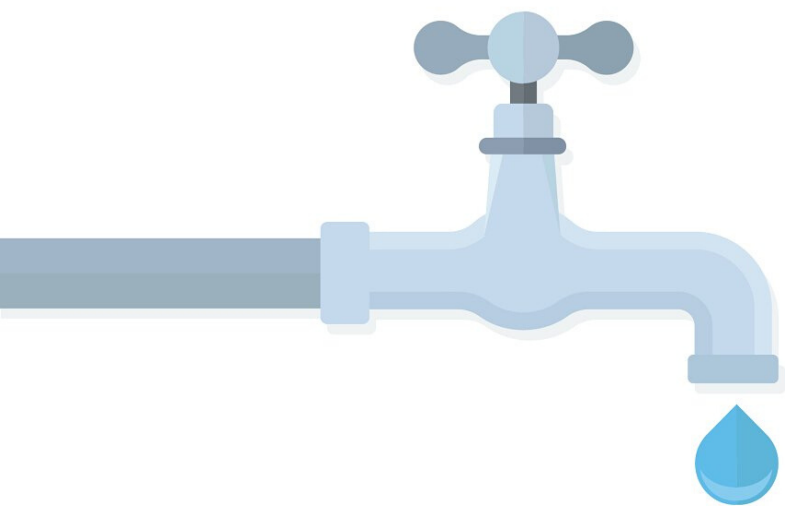
FINANCIAL OVERVIEW

The 2019-year end financial performance was positive.

An increased contribution from collaborations leading to impactful work output, from memberships and donations, also added to this positive outcome.

A revenue generation target of INR 1.5 crores has been proposed for the year 2020 from the ICCW verticals and its relevant activities.

Total income 2018 - 19	Rs.	Total expenditure 2018 - 19	Rs.
Grant	118,200,000	Infrastructure	43,391,573
Outreach sponsorship	3,070,164	Equipment	30,000,000
Implementation	1,680,285	Lease advance	14,160,000
Consultancy earnings	590,000	Overheads (salaries included)	5,577,221
12,35,40,449		Outreach expenses	1,362,343
		Implementation payouts	1,360,235
		Consultancy expenses	1,158,322
		9,70,09,694	
Confirmed Revenue	Rs.	Committed Payments	Rs.
Implementation Projects	3,29,90,309	Implementation Projects	3,10,20,548
Consortia subscription	55,00,000	Infrastructure	1,42,00,000
Testing and allied	21,17,660	Testing and allied services	1,94,700
4,06,07,969		4,54,15,248	



CLEAN WATER FOR ALL

INTERNATIONAL CENTER FOR CLEAN WATER

EVERY DROP COUNTS

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