



# NEWS LETTER

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INDIAN WATER WORKS ASSOCIATION-KOCHI CENTRE

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### Editor's Desk

It gives me immense pleasure in bringing out the first issue of the Newsletter of Indian Water Works Association (IWWA), Kochi Centre. The Kochi Centre, established on 18 July 2026, is an important milestone in bringing together professionals, academicians, engineers and stakeholders committed to the sustainable development of the water sector.

Water management today is challenged by climate change, fast growing urbanization, pollution, water scarcity, waste water management and efficient distribution. Technological innovation, knowledge transfer and close professional cooperation are required to meet these challenges.

The objective of this Newsletter is to provide a forum for the dissemination of information about the activities of the Centre, technical developments, research contributions, professional experience and innovative practices related to water and wastewater management. It will also motivate young engineers, researchers and students to participate and contribute their ideas.

I would like to express my sincere appreciation for the efforts of the Chairman, Office Bearers, Management Committee, Editorial Board and all contributors who have supported the publication of this inaugural issue.

I look forward to the continued support and active participation of all members and our joint efforts towards a sustainable, resilient and water-secure future.

**Prof. (Dr.) G. Madhu**

**Chief Editor**

### Chairman's Message

Dear Members, Colleagues, and Friends,

It gives me immense pleasure to welcome you to the inaugural issue of our IWWA Centre Newsletter. This first edition marks a significant milestone in our journey, providing a dedicated platform to share knowledge, celebrate achievements, and foster closer collaboration among water professionals in our region.

Water and sanitation remain at the very core of sustainable development. As we face growing challenges from climate change, rapid urbanization, and resource scarcity, the role of our local IWWA Centre becomes more critical. Our mission is to drive innovation, promote best practices, and build a strong network of engineers, scientists, and policymakers dedicated to water sustainability.

This newsletter is designed to be a living chronicle of our efforts. In future editions, you can look forward to: Technical insights and updates on cutting-edge water technologies, Reports on activities, including seminars and workshops, and abstracts of research papers and thesis work.

I extend my wholehearted gratitude to the editorial team for their hard work in bringing this publication to life.

I encourage each of you to contribute actively to this newsletter by sharing your research, field experiences, and ideas. Together, let us continue to innovate and work toward a water-secure future.

**Prof.(Dr.) Prabhakaran. M. M.**

**Chairman**

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**PVC, CONDUIT, GI, MS, DI and HDPE PIPES & FITTINGS**

**IWWA- KOCHI CENTRE** was formed at its Special General Body Meeting on 18 July 2026 in accordance with the guidelines for the formation of new IWWA Centres. The following office bearers were unanimously elected at the meeting

1. Chairman: Prof.(Dr.) Prabhakaran.M.M. LF-1368
2. Vice Chairman: Er. Renuka Menon LM -11809
3. Hon.Secretary: Er. Anil Augustine LM-11814
4. Hon.Joint Secretary: Er. Heloshia V.B. LM -11811
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6. Hon. Editor: Prof.(Dr.) G. Madhu LF-1393

**Management Committee Members:**

7. Dr. Chandravathi.P.K LF-1367
8. Er. Chandrasekharan V. LM-1625
9. Er. Baburajan P.K.- LM-11802
- 10 Er. Suresh K. - LM-11592

**Co-opted Members:**

1. Er. Babu K.S – LF -1372
2. Er. Purushan Ayyappan- LM 11580
3. Prof.(Dr) Sivanandan Achari V- LM -11732
4. Prof.(Dr.) Mary Lissy P.N – LM -11697
5. Prof.(Dr.) Saranya M.S – LM 11653
6. Er. Luna Unnikrishnan Nair – LM 11593
7. Er. Anup Thaliath Tomy LM-11795

**Why Should I Become an IWWA Member? What Are Its Needs and Benefits?**

Prepared by

**Prof(Dr) Prabhakaran.M.M, Chairman, IWWA Kochi Centre**

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Friends,

Young engineers and professors often ask "What do I actually get by becoming a member of IWWA and paying a fee of ₹3,500 to ₹6,000?"

Please consider the following practical points that may encourage young engineers and professors to take up IWWA life membership.

1. Career Boost + Govt. Project Access
  - a) IWWA is recognized by Ministry of Jal Shakti, AMRUT, Jal Jeevan Mission.
  - b) Tender notices, project reports, and new CPHEEO manuals come to members first.
  - c) Many PWD/KWA/consultancy firms prefer IWWA members for water projects. It's a stamp that "you're serious about water sector".
2. Technical Learning That College Doesn't Teach
  - a) Free/ discounted access to training on NRW, leak detection, SCADA, WTP design, pipeline hydraulics.
  - b) Quarterly IWWA Journal and technical bulletins with real case studies from Indian cities.
  - c) For professors: Will get ready teaching material, data, and research paper topics for students.
3. Networking = Jobs + Collaborations
  - a) Meet CEs, EEs, consultants and contractors at state and national conferences.
  - b) IWWA student chapters and young engineer forums are starting. Good place to find mentors.
  - c) Professors will receive ready-to-use teaching materials, data and research paper topics for students

4. One-Time Payment, Lifetime Returns

- a) Life membership costs approximately ₹3,500 to ₹6,000 as a one-time payment, depending on age
- b) Lifetime access to technical library, standards, and member rates for all future conferences/workshops.
- c) If you attend just two national conferences during your career, the discounts alone may recover the membership fee.

5. Visibility & Recognition

- a) Members may become eligible for the IWWA Young Engineer Award, Best Paper Award and committee positions after 3–5 years.
- b) You can publish papers in the IWWA Journal, which adds value to your CV for M.Tech/PhD/foreign jobs.
- c) Professors may receive invitations to serve as resource persons on panels for IWWA training programs.

6. Be Part of Policy and Impact

- a) IWWA members are invited to give inputs for CPHEEO manuals, BIS codes, state water policies.
- b) We are not just doing a job. We help solve India's water crisis. That's rare motivation for young engineers.

7. Student/Academic Benefits

- a) Professors can start IWWA Student Chapter in college. Approach the IWWA headquarters for funding for workshops and student site visits.
- b) Members get priority for IWWA scholarships, research grants.
- c) Good for NAAC/NBA accreditation (You can show industry linkage).



**Contemporary Issues in Indian Water Management**

1. **Urban Water Security:** Managing escalating scarcity, ensuring equitable distribution and upgrading infrastructure across growing metropolitan areas. Urban water security is a critical contemporary challenge driven by rapid population growth, climate change, infrastructural leakage, and pollution. Despite the abundance of water at the local or regional level, cities worldwide struggle to ensure efficient distribution, equitable access and sustainable wastewater management.

## Global Issues

- a. **Widespread Stress:** Nearly three-quarters of the global population lives in countries facing water insecurity.
- b. **Aquifer Depletion:** Groundwater extraction exceeds natural recharge rates.
- c. **Climate Unpredictability:** Shifting rainfall patterns disrupt traditional surface water reservoirs and river flows.
- d. **Urbanization Strain:** Denser megacities demand complex, high-cost infrastructure to pump water from distant sources.

## Issues in India

- a. **Severe Basin Stress:** Eleven out of fifteen major Indian river basins experience high water stress or scarcity.
- b. **Heavy Groundwater Reliance:** India ranks as the top global extractor of groundwater, leading to fast-declining water tables.
- c. **Distribution Losses:** Ageing pipeline networks lose large volumes of treated water before it reaches households..
- d. **Widespread Pollution:** Untreated industrial effluents and municipal sewage poison local rivers and shallow aquifers.

## Issues in Kerala

- a. **Paradox Of Scarcity:** Despite heavy seasonal monsoon rainfall, rapid urban expansion places pressure on ecosystem conservation capacity.
- b. **Governance Fragmentation:** Multiple administrative departments handle water management, which creates policy gaps and delays in responses.
- c. **Pollution Of Estuaries:** Industrial belts discharge millions of litres of effluents daily into local rivers and backwaters.
- d. **Salinity Intrusion:** Reduced river flows during the dry season allow seawater to contaminate freshwater intake points.

## Issues in Kochi

**Daily Supply Deficit:** The city faces a daily shortfall of 80 to 100 million litres (MLD), which is managed by the Kerala Water Authority

- a. **High Distribution Losses:** Up to 40% to 50% of treated water from treatment plants is lost due to leaks and infrastructure faults.
- b. **Unequal Access:** Marginalized pockets, slums, and West Kochi areas (like Vypeen and Mattancherry) face acute dry taps and rely heavily on emergency tanker trucks.
- c. **Industrial Pressures:** Millions of litres of untreated waste enter local estuaries daily from surrounding industrial zones, threatening raw water sources.



2. **Wastewater Reuse & Circular Economy:** Promoting zero-liquid discharge and establishing safe guidelines for reusing city effluents in agriculture and industry. Wastewater reuse and the circular economy transition from linear "use-and-dispose" habits to closed-loop recovery of water, energy, and nutrients. Globally and locally, this shift helps address extreme freshwater scarcity, environmental degradation and resource security.

## Global Context

- a. **Paradigm Shift:** Moving from disposal-focused sanitation to resource recovery (generating biogas, fertilizers like phosphorus/nitrogen, and purified non-potable water).
- b. **Scale:** International bodies and nations view advanced wastewater treatment as essential to combat climate-induced droughts and urban stress.
- c. **Economic Value:** Reclaimed water reduces dependence on freshwater in heavy industries, cooling and agriculture.

## In India

- a. **Water Stress:** India ranks low in per capita freshwater availability, making circular water strategies a high-priority national objective.
- b. **Economic Potential:** Estimates indicate that the treated used water (TUV) sector could represent a massive untapped market worth trillions of rupees by 2047.
- c. **Policy Push:** National missions (AMRUT 2.0, Swachh Bharat 2.0) and progressive state frameworks

(such as Andhra Pradesh's reuse policies) mandate urban wastewater utilization targets.

#### In Kerala

- a. **Topography and Runoff:** High annual rainfall and a steep mountain-to-coast slope cause rapid surface runoff, increasing the risk of stormwater mixing with uncontained faecal waste.
- b. **Low Sewerage Coverage:** Conventional piped sewerage covers only a small proportion of urban centres, thereby shifting the focus towards decentralised treatment and septage management.
- c. **Water-body Protection:** Preventing untreated greywater and septage from contaminating backwaters and shallow wells is a major public health concern for the state.

#### In Kochi

- a. **Treatment Gaps:** Less than 30% of the sewage generated in the Kochi urban agglomeration is systematically processed through sewage treatment plants (STPs).
- b. **Canal Rejuvenation Challenges:** Urban water bodies, such as the Thevara–Perandoor and Edakochi canals, suffer from high pollution levels due to septic tank overflows and direct greywater discharge.
- c. **On-the-Ground Actions:**
  1. The implementation of decentralised facilities, such as the 1.1 MLD plant at Edakochi and small-scale pilot setups (e.g., nature-based gravel bed filtration at Elamakkara School).
  2. Large-scale infrastructure overhauls are proposed under the Integrated Urban Regeneration and Water Transport System (IURWTS), backed by the Kerala Water Authority, to expand network coverage and ensure buffer-zone compliance.



**3. Climate Change Pressures:** Coping with extreme weather events, depleting groundwater tables, and watershed degradation. Climate change pressures manifest as rising global temperatures, melting ice caps, shifting precipitation norms, and escalating sea-level extremes. Locally in low-lying coastal hubs like Kochi, these pressures translate to severe urban flooding, high-tide seawater intrusion, and intensifying heat stress driven by rapid industrialization and warming Arabian Sea waters.

#### Global Pressures

- a. Rising average surface temperatures projected to pass 3°C this century.
- b. Accelerating glacial melt driving thermal expansion and global sea-level rise.
- c. More frequent and volatile extreme weather occurrences across continents.

#### Pressures in India

- a. Rapid warming of surrounding tropical oceans intensifying cyclonic activity.
- b. Erratic monsoon behaviors leading to sudden, destructive downpours.
- c. Widespread heat waves challenging agriculture, labor productivity, and power grids.

#### Pressures in Kerala

- a. Unstable rainfall concentration causing devastating landslides in the hills and catastrophic state-wide floods.
- b. Chronic coastal erosion along the 590-kilometer shoreline.
- c. Early climate-induced human displacement, seen in regions like Kuttanad and Munroe Island.

#### Pressures in Kochi

- a. Chronic high-tide and sunny-day tidal flooding infiltrating inland zones and residential areas.
- b. Encroached and polluted historic canals obstructing vital stormwater drainage.
- c. Amplified urban heat island effects due to dense concrete and loss of local water bodies.

#### Attention: Members

*You are cordially invited to contribute brief technical reports and articles (preferably not exceeding 400 words) on topics related to Water and Waste water for inclusion in the forthcoming issues of the News Letter. Please submit your contributions to the Chief Editor.*

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