

2026 ജൂൺ



പ്രകാശം

അമൃതം

വാർത്താപത്രിക





ശ്രീ വി.ഡി. സതീശൻ കേരള മുഖ്യമന്ത്രിയായി ചുമതലയേറ്റു.
ബഹു. മുഖ്യമന്ത്രിക്ക് അമൃത് കേരള മിഷന്റെ ആദരം



അമൃത് വാർത്താ പത്രിക

ജൂൺ 2026 | പുസ്തകം 5 | ലക്കം 1



**തദ്ദേശസ്വയംഭരണ വകുപ്പ്
കേരളം സർക്കാർ**

**ചീഫ് എഡിറ്റർ
സുരജ് ഷാജി ഐ.എ.എസ്സ്
മിഷൻ ഡയറക്ടർ**

**എഡിറ്റർ
മുരളി കൊച്ചുകുപ്പൻ
എൻവിയോൺമെന്റ് എക്സ്പർട്ട് കം
ഹൈഡ്രോ ജിയോളജിസ്റ്റ്**

**അസിസ്റ്റന്റ് എഡിറ്റർ
സാവിത്രി സജി ഇ.ആർ.**



**സ്റ്റേറ്റ് മിഷൻ മാനേജ്മെന്റ്
യൂണിറ്റ് (അമൃത്)**
നാലാം നില, മീനാക്ഷിപ്പാസാ,
ആർട്സ് ബിൽഡിംഗ്,
ഗവ. ആശുപത്രിക്ക് എതിർവശം,
തെയ്ക്കാട്, തിരുവനന്തപുരം - 695014
ഫോൺ നം. : +91-471-2323856,
ഫാക്സ് : +91-471-2322857
വെബ്സൈറ്റ് : www.amrutkerala.in
ഇമെയിൽ : smmukerala@gmail.com

(സ്വകാര്യ വിതരണത്തിന് മാത്രം)



എഡിറ്റോറിയൽ

നഗരങ്ങളുടെ അടിസ്ഥാന ഭൗതിക സൗകര്യ വികസനവും ജല ഭദ്രതയും ലക്ഷ്യമിട്ട് നടപ്പിലാക്കിവരുന്ന അമൃത് പദ്ധതികൾ സംസ്ഥാനത്ത് വളരെ കാര്യക്ഷമമായി നടന്നുവരികയാണ്. ഈ അവസരത്തിൽ പുതിയതായി സംസ്ഥാന തദ്ദേശ സ്വയംഭരണ വകുപ്പ് മുന്നിയിായി ചുമതലയേറ്റ ശ്രീ. കെ.എം. ഷാജിയ്ക്ക് അമൃത് മിഷനിലേയ്ക്ക് സ്വാഗതവും എല്ലാ വിധ ആശംസകളും നേരുന്നു.

അമൃത് 1.0 പദ്ധതിയിൽ അംഗീകാരം ലഭിച്ച 1113 പദ്ധതികളിൽ വിവിധ സെക്ടറുകളിലായി 1092 പദ്ധതികൾ പൂർത്തീകരിച്ചു കഴിഞ്ഞു. 21 പദ്ധതികൾ പൂർത്തീകരണത്തിന്റെ വിവിധ ഘട്ടങ്ങളിലാണ്. 2357 കോടി രൂപ പദ്ധതിയ്ക്കായി ചെലവഴിച്ചിട്ടുണ്ട്. പൂർത്തീകരിക്കപ്പെടേണ്ട പദ്ധതികൾ ദ്രുതഗതിയിൽ പൂർത്തീകരിക്കേണ്ട നടപടികൾ അതാത് നഗരസഭകൾ കൈക്കൊള്ളേണ്ടതുണ്ട്. പൂർത്തീകരിച്ച പദ്ധതികളുടെ തൽസ്ഥിതി റിപ്പോർട്ടും പൂർത്തീകരണ റിപ്പോർട്ടും സമർപ്പിക്കേണ്ട നഗരസഭകൾ എത്രയും വേഗം സമർപ്പിക്കണമെന്ന് ഓർമ്മിപ്പിക്കുന്നു.

അമൃത് 2.0 പദ്ധതിയിൽ 3519 കോടി രൂപയുടെ 711 പദ്ധതികൾക്കാണ് അംഗീകാരം ലഭിച്ചിട്ടുള്ളത്. ഇതിൽ 151 പദ്ധതികൾ പൂർത്തീകരിച്ചിട്ടുണ്ട്. 740 കോടി രൂപ പദ്ധതിയ്ക്കായി ചെലവഴിച്ചു. കൂടാതെ പദ്ധതിയ്ക്ക് അനുബന്ധമായി നടത്തി വരുന്ന അമൃത് മിത്ര പദ്ധതിയും സംസ്ഥാനത്ത് വളരെ നല്ല രീതിയിൽ നടന്നുവരുന്നു. അമൃത് 2.0 പദ്ധതിയുടെ ഫണ്ട് വിവിധ ഘട്ടങ്ങളിലായാണ് കേന്ദ്ര സർക്കാർ അനുവദിക്കുന്നത്. ആയതിനാൽ പദ്ധതി പുരോഗതി അതാത് ഘട്ടങ്ങളിൽ പോർട്ടലിൽ അപ് ലോഡ് ചെയ്യേണ്ടതുണ്ട്. നഗരസഭകൾ നടത്തേണ്ടതായ വിവിധ പരിഷ്കരണ നടപടികൾ ഇതോടൊപ്പം പൂർത്തീകരിക്കേണ്ടതാണെന്ന കാര്യവും ഓർമ്മിപ്പിക്കുന്നു.

മിഷൻ ഡയറക്ടർ



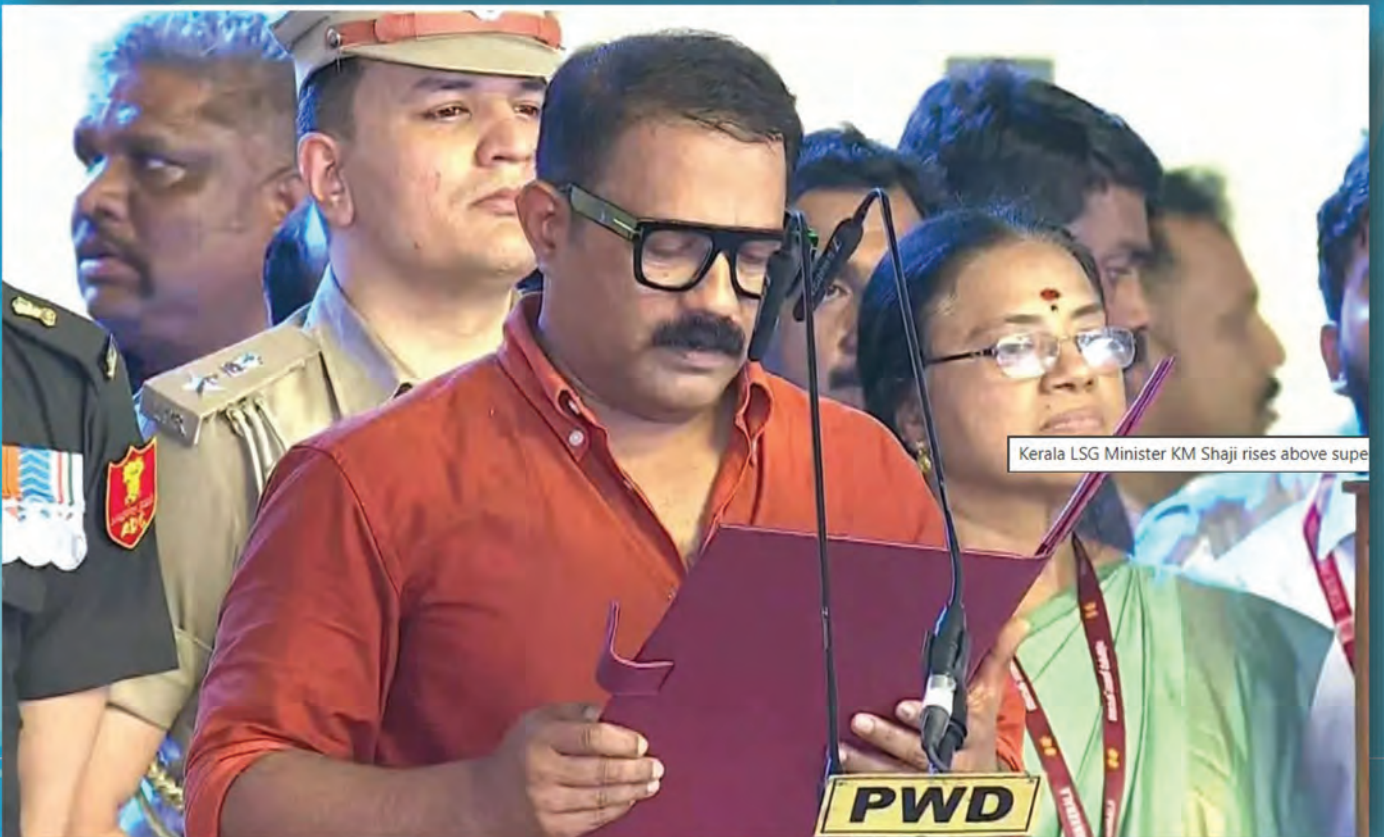
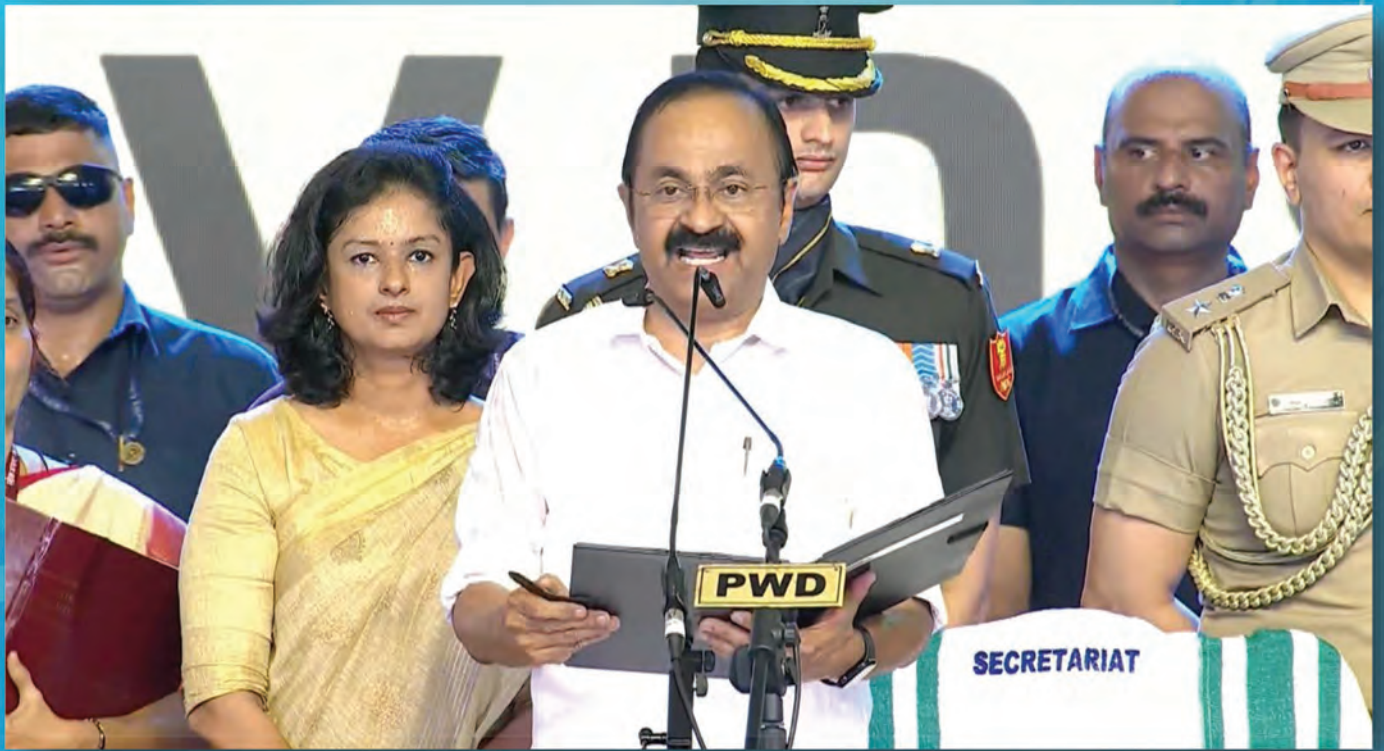
അമൃത് വാർത്താ പത്രിക ഉള്ളടക്കം

ജൂൺ 2026



മാലിന്യത്തിൽ നിന്ന് സൗന്ദര്യത്തിലേക്ക് - അമൃത് മിത്ര പദ്ധതിയിലൂടെപ്പുതുങ്ങി നവീകരിച്ച പാർക്ക്

- 5 Urban Challenge Fund (UCF)
- 9 REGIONAL WORKSHOP TOWARDS URBAN INVEST WINDOW (UiWIN)
- 12 Report Towards Strengthening Urban Infrastructure: Workshop on Utility Mapping Across AMRUT One Cities:
- 14 Report of AMRUT Mission Director Review towards Urban Transformation Projects in Kasaragod District
- 17 Report on Training of Trainers on “Preparing Bankable Climate-Resilient Urban Infrastructure Projects” conducted from 30th & 31st March 2026 at Novotel Hotel, New Delhi by GIZ- European Union.
- 20 Report on Consultative Meeting towards Accelerated 24x7 Water Supply Plans and NRW reduction Under AMRUT 2.0.
- 22 Reviving Urban Water Bodies: A Nature-Based Solution for Sustainable Pond Restoration
A Case Study on Kochattilkulam & Puthankulam Using GeoBlue Technologies



Kerala LSG Minister KM Shaji rises above supe





The Urban Challenge Fund (UCF) is a transformative initiative launched by the Government of India to address the rapid urban population growth and infrastructure demands projected by 2050. The Ministry of Housing and Urban Affairs has launched the guidelines of Urban Challenge Fund on 15th April 2026. Targeting sustainable urban development, the Fund promotes market-based financing, integrated regional growth, and institutional reforms to enhance urban infrastructure and service delivery across Indian cities, especially Tier II and Tier III urban centres.

1. Background and Mission Overview

- ♦ **Urban Growth Challenge:** India's urban population is expected to nearly double by 2050, adding about 11 crore households and 44 crore people, intensifying pressure on housing, transport, water, sanitation, energy, and basic services.
- ♦ **Objective:** Transition cities into bankable assets by encouraging reform, institutional strengthening, governance improvement, and sustainable revenue generation.
- ♦ **Mission Period:** FY 2025–26 to FY 2030–31 (extendable by three years).
- ♦ **Total Central Assistance (CA):** ₹1,00,000 crore aimed at lever-



Sathi Kumari
CBE, AMRUT SMMU



Urban challenge Fund (UCF) to boost infrastructure in Tier II and Tier III urban centres

2. Fund Allocation and Financial Model

Component	Amount (₹ Crore)	Purpose
Project Fund	90,000	Catalytic support for approved urban infrastructure projects across three verticals
Project Preparation and Capacity Building Fund (PPCBF)	5,000	♦ 3000cr. will be allocated to States for project preparation, capacity building, IEC and A&OE and other admissible components. ♦ 1500cr. shall be for Independent Review & Monitoring Agency, Technology submission and other focused schemes/interventions by MoHUA at State and City level. ♦ 500cr. for the A&OE expenses of UCF division of MoHUA.
Credit Repayment Guarantee Sub-Scheme (CRGSS)	5,000	Risk-sharing and credit enhancement mechanism to assist smaller ULBs (with population below 1,00,000) enabling access to market-based finance.

Blended Financing: UCF CA covers up to 25% of project costs, requiring at least 50% funding from market sources such as bonds, loans, and PPPs.

Credit Repayment Guarantee: CRGSS supports smaller ULBs and those in Northeastern and Hilly States by guaranteeing up to 70% of the first-time loan amount or ₹7 crore, and 50% for second-time loans.

3. Coverage and Eligible Cities

All States and UTs can participate.

Focus on:

- ♦ Cities with 2025 projected population ≥ 10 lakh.
- ♦ Capital cities of States/UTs not meeting above.
- ♦ Major industrial cities with population ≥ 1,00,000.
- ♦ All ULBs in Hilly and Northeastern States and small ULBs (<1,00,000 population) elsewhere.

As per the above, all ULBs are eligible for participation.

4. Admissible Projects under UCF

Projects are categorized under three verticals: Cities as Growth Hubs, Creative Redevelopment of Cities, and Water and Sanitation. Key project types include:

Digital Governance: ICCCs, digitization of property records, utilities, family IDs, drone mapping.

Trunk Infrastructure: New and replacement infrastructure, underground ducts, water and sewage management, SCADA systems.

Circularity: Water and waste recycling, waste-to-energy, dump site remediation.

Decongestion: Multi-storey parking, off-street parking, congestion relief.

Last Mile Connectivity: Integration of metro/buses with households, transit hub upgrades.

Old City Revitalization: Redevelopment, urban flooding control, public spaces, heritage rejuvenation, slum rehabilitation.

Market Redevelopment: Infrastructure for markets, logistic hubs, vertical development.

Non-Motorized Transport: Pedestrianization, cycling paths, canopy walkways, safe school zones.

Transit Hub upgradation: upgrading old bus depot, railway stations, existing railway lines/infrastructure, economical & residential complexes.

Transit-Oriented Development (TOD): Commercial and public realm transformation around transit hubs.

Urban Flood Prevention: Drainage and sponge infrastructure covering 25–50 sq.km areas.

Integrated Waste Processing: C&D waste reuse, bio-gas, sludge remediation, waste-to-energy.

Greenfield/Semi-Greenfield Infrastructure: Roads, water, sewerage in new urban clusters.

Others: Road infrastructure, riverfront development, land bank reforms, dairy enterprise relocation, convention centers, recreation spaces, libraries, sports infrastructure.

Approach: Projects must be transformational, integrated, scalable, and focused on systemic improvements rather than incremental changes, ensuring quality, innovation, and sustainability.

5. Project Appraisal and Challenge Framework

Projects must fulfil criteria emphasizing:

Strategic Alignment: Integration with city/regional plans, use of at least two UCF verticals.

Transformative Scale: Large-scale area/population coverage and measurable outcomes.

Financial Sustainability: Minimum 50% market funding, escrow mechanisms, risk allocation.

Implementation Readiness: Legal authority, institutional capacity, dedicated teams, reform roadmaps, and integration with ICCCs.

Reform Commitment: Submission of reform roadmaps and progress reporting on a centralized portal.

5.1 .Evaluation Pillars:

All projects submitted to the National Apex Committee(NAC) shall be assessed under a structured Challenge Framework to ensure that, only high impact , financially sound and implementation ready proposals are supported. Projects passing the following evaluations qualify for final approval and fund release.

Pillar	Focus Areas
Vision, Mission & Capacity	Institutional readiness, quality of DPR, project management, sector performance targets, strategic alignment
Transformative & Impact	Spatial/economic transformation, climate resilience, social inclusiveness
Sustainability	Financial robustness, O&M models, utility efficiency, bankability

6. Fund Release Mechanism

Funds disbursed in three tranches based on project progress:

Tranche	Percentage of CA Release	Conditions
First Tranche	30%	Upon project approval by NAC, MoHUA, and SHPSC
Second Tranche	50%	At least 40% physical progress with geo-tagged evidence and submission of 75% utilization certificates
Third Tranche	20%	At least 75% physical progress with geo-tagged evidence and submission of 75% utilization certificates

Funds must be used exclusively for approved project components and follow a defined fund-flow structure.

7. Program management and Monitoring Framework

National Apex Committee (NAC): Chaired by Secretary, MoHUA; approves projects, allocates funds, supervises mission implementation, advises on resource mobilization.

National Project Management Unit (PMU): Supports NAC with technical, financial, and operational assistance.

Independent Review and Monitoring Agencies (IRMA): Selected by MoHUA to conduct periodic reviews and submit reports.

State High Powered Steering Committee (SHPSC): Chaired by Chief Secretary; oversees project approval, fund release, capacity building, and reforms.

State Level Technical Committee (SLTC): Responsible for technical appraisal of DPRs and tender documents.

Project Support Unit:Engaged for project planning, design, supervision, and monitoring.

Urban Local Bodies (ULBs)/Implementing Agencies: Responsible for project execution and stakeholder coordination.

8. Reforms Framework

Reforms are integral to UCF success. The States shall submit baseline information and roadmap for implementation of applicable reforms. Categorized as:

Market & Financial Reforms: Minimum 50% market funding, asset registers, tax improvements, project structuring.

Governance & Digital Reforms:

Staffing, accountability, digitization, system-based monitoring.

Operational & Capacity Reforms:

Project readiness, execution quality, O&M sustainability.

Urban Planning & Spatial Reforms:

Land use, mobility, climate resilience integration.

Project-Specific Reforms:

Service KPIs, safety, O&M readiness, monitoring.

Credit Repayment Guarantee Reforms:

Encourage borrowing culture in smaller cities.



States must submit baseline data and reform roadmaps, with monitoring via a dedicated toolkit.

9. Capacity Building

Capacity building is a strategic investment to develop skilled, accountable municipal institutions capable of delivering high-quality urban infrastructure and services sustainably. It includes:

Individual Capacity Building: Demand-driven training, mentoring, exposure visits, IEC initiatives.

Institutional Capacity Building: Strengthening ULBs through consulting firms and technical support.

Focus areas cover project management, procurement, financial discipline, O&M, citizen engagement, and technology adoption.

Emphasis on practical, outcome-driven learning with periodic assessments and peer networks.

Key Insights

- ◆ UCF aims to catalyze a paradigm shift from grant-based urban infrastructure financing to market-driven, bankable urban assets.
- ◆ The Fund promotes integrated, scalable, and transformational projects across digital governance, infrastructure, circular economy, and urban mobility.
- ◆ Strong emphasis on reforms, capacity building, and institutional strengthening ensures project sustainability and governance improvements.
- ◆ Multi-tiered governance and monitoring mechanisms ensure transparency, accountability, and timely execution.
- ◆ Financial instruments like the Credit Repayment Guarantee Sub-Scheme mitigate risks for smaller ULBs, encouraging their participation.
- ◆ Fund release is linked to physical progress and independent verification, ensuring performance-based funding.



REPORT ON REGIONAL WORKSHOP TOWARDS URBAN INVEST WINDOW (UiWIN)

Introduction:

Murali Kochukrishnan

The first South regional workshop covering all the states from South India has been invited by the organizer, Housing and Urban Development Corporation Limited (HUDCO), under the Ministry of Housing and Urban Affairs, Government of India for unfurling the UIWIN objectives and strategies of Urban investments. The welcome address has been extended by **Shri. Sanjay Kulshrestha**, Chairman and Managing Director, HUDCO and the Inaugural address and the Guest of Honor for the programme was **Shri.Srinivas R Katikithala IAS**, Secretary, Ministry of Housing and Urban affairs (MOHUA), Government of India, The Keynote address has been spoken by **Shri. S. Suresh Kumar, IAS**, Principal Secretary, MA&UD, Government of Andra Pradesh, Also, Special addresses were given by the Guest of Honor- **Shri.Magunta Sreenivasulu Reddy**, Hon'ble Member of Parliament, Ongole, AP, the special address as a chief Guest has been done by **Shri. Ponguru Narayana**, Hon'ble Minister of Municipal administration and Urban Development, Government of Andrapradesh, the vote of Thanks has been extended by **Shri.M.Nagaraj**, DCP, HUDCO.

Objectives of the Workshop:

The workshop was convened with the following broad objectives:

- ♦ To create awareness about the **Urban, Invest Window (UiWIN)** as a single-window, institutional platform for urban infrastructure financing and project preparation.
- ♦ To strengthen **project preparation and financial structuring** of urban infrastructure schemes, especially for Urban Local Bodies (ULBs).
- ♦ To promote **asset monetisation, municipal bonds and capital-market instruments** for cities.
- ♦ To build a viable **pipeline of bankable, investment-ready projects** for **tier-2 and tier-3 cities**.

Strategies of UIWIN by HUDCO:

UiWIN's core strategies summarised are as follows:

- ♦ UiWIN functions as a one-stop, end-to-end investment facilitation platform hosted by HUDCO to help Urban Local Bodies (ULBs) develop bankable, investment-ready urban infrastructure projects.
- ♦ It uses a hub-and-spoke model through HUDCO's pan-India regional offices and dedicated Investment Support Units (ISUs) to support cities from project identification, DPR and feasibility studies, financial structuring, and credit-rating support to implementation.
- ♦ It focuses on four broad solution pillars: capacity building of ULBs, project formulation and asset monetisation, linkage to financial and capital markets (including multilateral loans, long-tenor financing, and PPPs), and professional management of existing assets.
- ♦ UiWIN aims to build a pipeline of high-priority projects (especially for tier-II and tier-III cities), improve municipal financial management, and connect ULBs with domestic and global investors, municipal bond markets, and pooled- finance mechanisms.



Participation of Kerala team in the afore said workshop

What is Hub and spoke Model of UIWIN/HUDCO?

UiWIN's hub-and-spoke model works in practice by centralising expertise and coordination at a national "hub" (HUDCO headquarters) while deploying regional "spokes" (HUDCO's state-level offices and Investment Support Units – ISUs) to support cities and ULBs on the ground.

Hub at National Level:

HUDCO's central office acts as the technical and financial backbone, defining standards, templates, and processes for project preparation, DPRs, financial structuring, and credit-rating support; it also coordinates with national institutions (MoHUA, NITI Aayog, multilateral agencies) and capital-market players.

Spokes at Regional/state level:

HUDCO's regional offices and ISUs engage directly with ULBs, Smart City SPVs, and State urban departments to:

Identify potential projects (water, sewerage, stormwater, transport, social infrastructure).

Prepare or refine DPRs, feasibility studies, and financial models.

Guide cities on PPP structures, asset monetisation, municipal bonds, and land-value capture.

Flow of support System:

Cities approach the nearest **HUDCO office (spoke)**, which either provides on-site support or routes complex transactions back to the **central hub** for higher-level technical, legal, or financial advisory; completed projects are then entered into the **UiWIN platform** to be showcased to investors, banks, and multilateral agencies.

Integration with Missions:

UiWIN spokes align with schemes like AMRUT, Smart Cities, and UIDF to convert already-planned schemes into **bankable, investment-ready projects**, while the hub helps aggregate demand and structure pooled-finance or blended-finance instruments.

in practice UiWIN's hub-and-spoke model means **local ULBs deal with a nearby HUDCO office as the "spoke," which in turn taps into the central "hub"** for deep technical and financial support, so that even small-town projects can meet institutional-investor standards

Participants and Representation:

The event witnessed participation from across the urban governance and finance ecosystem:

- ♦ Approximately **150 participants**, including Municipal Commissioners, Heads of Urban Development Departments, Smart City Mission officers and officials from various ULBs.
- ♦ Delegations from **five southern States**: Andhra Pradesh, Telangana, Karnataka, Tamil Nadu and Kerala.
- ♦ Representatives from **national and international institutions**, including NITI Aayog, World Bank, Asian Development Bank (ADB), NABFID, NIIF, IFC, and leading banks and financial institutions.

The Kerala team represented by AMRUT SMMU viz. Murali kochukrishnan, Sijo V.S, Rahul.N and Ms.Divya L.S from Urban Directorate and various chairperson from ULB'S of Kerala have participated in the aforesaid workshop.

Key Discussions and Sessions:

The workshop featured technical sessions and presentations on the following themes:

- ♦ **Urban finance models and project structuring:** Emphasis on designing **bankable project structures** for water supply, sewerage, stormwater drainage, solid waste management, transport and social infrastructure.
- ♦ **Public-Private Partnerships (PPP) and blended finance:** Discussions on risk-sharing, tariff structures, viability gap funding and use of **PPP and hybrid instruments** for urban projects.
- ♦ **Municipal bonds and capital-market instruments:** Exploring options for **municipal bonds, securitisation, and land-based financing** to diversify urban financing sources.
- ♦ **Asset monetisation and land-value capture:** Mechanisms to leverage existing urban assets (land, buildings, utilities) and capture land-value increments for reinvestment in infrastructure.

Institutional Agreements and Outcomes:

- HUDCO signed **MoUs with State agencies** to jointly support the development of tier-2 AND tier 3 cities and improve the investment readiness of urban infrastructure projects. **On behalf of AMRUT and State urban Directorate, the Signed Document has been exchanged by the Additional Director of Urban Department Ms. Deepa L.S for and on behalf of AMRUT Mission and Urban Directorate with Shri. M.Nagaraj DCP, HUDCO.**
- The workshop emphasised **harmonising urban projects** with schemes such as the **Urban Challenge Fund (UCF)** and leveraging resources expected under the **16th Finance Commission**.
- A **regional pipeline of prioritised projects** was discussed, with focus on cities in Andhra Pradesh, Telangana and other southern States.



Exchange of Agreements/MOU Between AMRUT and HUDCO

Relevance for Urban Water and other Infrastructure Projects:

For agencies engaged in urban water supply, sewerage, MRRT, stormwater and related infrastructure (including AMRUT, UIDF, UCF, CER and similar schemes), the workshop highlighted the following implications:

- ♦ UiWIN can help **convert conceptual and physical schemes into bankable projects** through structured feasibility studies, DPRs, and financial models.
- ♦ It offers avenues to explore **debt, equity, and blended finance instruments**, including hybrids with PPP and municipal bonds, for water and sanitation projects.
- ♦ The platform can assist in **prioritising critical projects**, aligning them with national and State-level urban missions, and improving their creditworthiness for external financiers.

The concluding session has been chaired by Shri. Sanjay Kushrestra towards Unlocking infrastructure growth and financing in Tier II and Tier -III cities wherein **Mr. Rahul.N of AMRUT SMMU** has participated as one of the panel members of Discussion.



N.Rahul from AMRUT SMMU, Kerala have participated in the final panel Discussion

Recommendations for Follow-up Action:

- ♦ **Identify and prepare** a list of **priority urban water, sanitation and other infrastructure projects** in the State that can be routed through UiWIN for enhanced financial structuring and external funding.
- ♦ **Engage with HUDCO and State HUDCO cells** to explore MoU-based technical support for project preparation, financial modelling and investor pitching.
- ♦ **Conduct internal sensitisation sessions** for ULBs and project-implementing agencies on **UiWIN, PPP models, municipal bonds and asset-monetisation options to improve project-readiness.**



Rahul.N, AMRUT SMMU.

Report Towards Strengthening Urban Infrastructure: Workshop on Utility Mapping Across AMRUT 01 Cities:

In a significant step toward modernizing urban infrastructure management a suitable bid has been called for and ULCCS has been selected as a nodal agency to carry out the proposed work in due consultation with KWA and relevant ULB's. Accordingly, a consultative workshop on **utility mapping for AMRUT one cities** was held on April 21, 2026, at the Kerala Water Authority (KWA) Head Office Conference Hall. The workshop brought together key stakeholders to streamline efforts in creating a comprehensive, GIS-based database of urban utilities like water distribution system and other relevant assets, sewerage lines and storm water utility lines.

A Vision for Integrated Urban Mapping:

The AMRUT Mission has undertaken an ambitious initiative to develop detailed utility maps for AMRUT-1 cities, covering essential infrastructure such as water supply networks, sewerage systems, and storm water drains. This initiative is part of a broader push toward data-driven governance and improved urban service delivery.

The project received approvals from the State Level Technical Committee (SLTC) and the State High Powered Steering Committee (SHPPSC), following a thorough review by a high-level technical committee comprising senior officials from the Kerala Water Authority, Local Self Government Department (LSGD), AMRUT Mission, and other expert bodies. The execution of the project has been entrusted to ULCCS.

Collaborative Approach to Data Integration

As part of the initial phase, ULCCS began collecting baseline data from major stakeholder departments. However, the complexity of integrating data from multiple agencies highlighted the need for stronger coordination and shared understanding.

To address this, the workshop was convened with the approval of the Mission Director, creating a platform for dialogue, knowledge sharing, and consensus-building among stakeholders.

Leadership and Participation

The workshop was attended by senior officials, including Mission Director AMRUT Shri Suraj Shaji IAS and Kerala Water Authority Managing Director (I/C) Shri Binu Francis IAS.

Officials and technical teams from KWA, LSGD, and AMRUT city units representing Thiruvananthapuram, Kollam, Alappuzha, Kochi, Thrissur, Guruvayur, Palakkad, and Kozhikode actively participated in the discussions.





Technology at the Core

A key highlight of the workshop was a detailed presentation by ULCCS outlining the project scope, current progress, and existing data gaps. This was followed by a technology session led by ESRI India, which introduced participants to advanced GIS tools and their potential in managing urban utilities efficiently.

The session demonstrated how a unified GIS platform can enable:

- ♦ Centralized data access
- ♦ Real-time monitoring of infrastructure
- ♦ Improved planning and maintenance
- ♦ Enhanced coordination among departments

Key Discussions and Insights

The workshop facilitated meaningful discussions on:

- ♦ Mechanisms for interdepartmental data sharing
- ♦ Standardization and digitization of utility data
- ♦ Strategies for continuous data updating and platform integration
- ♦ Efficient methods for field data collection and validation

Both the MDs emphasized that creating a shared, accessible database is essential in the context of India's digital governance initiatives and urban development reforms.

Positive Outcomes and Future Direction

The workshop concluded with strong consensus and commitment from all participating departments. Stakeholders expressed their readiness to collaborate in data collection, validation, and integration processes.

Importantly, the session helped build confidence in the project's execution framework, with ULCCS gaining the support and trust of all involved agencies.

Towards Smarter Cities:

The utility mapping initiative represents a foundational step toward smarter, more resilient cities. By integrating technology with interdepartmental collaboration, the project aims to create a reliable and scalable model for urban infrastructure management.

As Kerala advances in its digital transformation journey, initiatives like these are set to play a crucial role in enhancing service delivery, improving planning efficiency, and ensuring sustainable urban growth.



Krishna Priya- AMRUT CMMU

Report on AMRUT Mission Director Review towards Urban Transformation Projects in Kasaragod District

In order to ensure the timely execution and quality of urban infrastructure, the **AMRUT Mission Director** along with few experts from SMMU team have conducted a comprehensive two-day field inspection across the **Neeleswaram, Kanhangad, and Kasaragod Municipalities** between March 23rd and 24th. The visit focused on critical water supply schemes inclusive of micro water supply schemes, pond rejuvenation, and urban beautification projects aimed at enhancing the living standards of residents in the region.

Day 1: Strengthening Water Security and Local Heritage in Neeleswaram and Kanhangad



The mission began with a meeting in **Neeleswaram municipality**, where the Director engaged with the engineering wing and municipal secretary to review ongoing works and fresh proposals.

- **Pond Rejuvenation:** The Director and SMMU Team inspected the completed **Naramkulangara and Palayi pond** projects. While the restoration is complete, instructions were issued to utilize the **MITRA project** for ongoing maintenance and cleaning of the surroundings to ensure these water bodies remain local assets.
- **Micro Water Supply:** A visit to the source point of the **Suvarnavally Micro Water Supply Scheme** highlighted the importance of health-first infrastructure. The Director mandated water quality tests after noticing domestic carbon filters nearby and ordered a household-well capability match once yield tests are finalized.
- **Riverfront Enhancement:** A new **₹50 lakh proposal** for the **Karingode River** was reviewed. The plan includes side protection, landscaping, and seating, though the Director emphasized securing necessary environmental clearances from Forest and Coastal Zone authorities before proceeding further.

In **Kanhangad**, the focus shifted to the **Vazhunnoradi Micro Water Supply Scheme, Nambiarkkal dam and Thamarakulam pond**,

A critical site visit was conducted at the source point for the **Vazhunnoradi Micro Water Supply Scheme**, alongside a review of the **Nambiarkkal Dam**. The dam, an irrigation department initiative, serves as a vital barrier against salinity in the **Arayi Puzha which supplies water to the proposed micro-water supply scheme**. After the barrage construction, saline water ingress is controlled to a greater extent.

Key directives from the mission included:

- ♦ **Ensuring Adequacy:** The ULB has been instructed to secure a formal water adequacy report in terms of Yield assessment from the concerned departments to guarantee long-term sustainability.
- ♦ **Success through Design:** Following a detailed discussion with the **SEUF Consultant**, the Secretary, and the Engineering Wing, the Director emphasized that the design of water inlets and pumping facilities must be foolproof.
- ♦ **Focus on Reliability:** This project is under heavy scrutiny to ensure that, it achieves its purpose, specifically noting that earlier water projects in this specific area had unfortunately failed due to earlier salinity ingress, which is kept under control after the construction of weir/ barrage at nambiar-kal dam.

Thamarakulam Pond:

The restoration of the **Thamarakulam Pond** remains a priority, though the project has faced significant geographical challenges.

Recent developments include:

- ♦ **Structural Adjustments:** Excavation efforts led to the collapse of a nearby building's compound wall, necessitating a revised estimate. Furthermore, low soil bearing capacity required a deeper foundation than originally planned.
- ♦ **Expedited Completion:** The Mission Director has granted permission for the revised estimates and instructed the engineering team to fast-track the remaining work, as the project has reached its final stages.
- ♦ **Quality Assurance:** A mandatory water quality test must be conducted and verified before the final bill is processed.

Day 2: Kasaragod's Path to 24x7 Water Supply

The second day focused on **Kasaragod Municipality**, where the Mission Director explored the potential for the city to become a leader in water management.

- ♦ **Public Spaces:** Following inspections of the **Korrokkode kulam and Erumakulam ponds**, the engineering wing was directed to implement stricter cleaning schedules to prevent the accumulation of waste and foliage.
- ♦ **Tourism Potential:** The proposed enhancement of **Nellikunnu Beach**, situated near the iconic lighthouse, was lauded for its strategic location. However, the Director noted that significant waste management efforts are required to make the site truly tourist-ready.
- ♦ **A New Standard in Water:** A major highlight was the review of **Kerala Water Authority (KWA)** works. With a **55 MLD treatment plant in Bhavikkara** already operational, Kasaragod is uniquely positioned to achieve **24x7 water supply**. The Director instructed KWA engineers to draft a formal 24x7 supply DPR in collaboration with the AMRUT Technical Support Unit.

Conclusion

While the Mission Director praised the vision behind many of the proposals, the visit concluded with a firm call to action. Noting that several projects in all three municipalities are progressing slower than anticipated, the Director urged local bodies to accelerate their timelines. Urban bodies are urged to increase the pace of execution to ensure these vital water and community resources are delivered to the public without further delay. With Kasaragod on the cusp of a water supply revolution, the focus now turns to efficient execution and environmental sustainability. A courtesy visit to the district Collectorate is also carried out by the Mission Director and SMMU team to update the findings to the district collector Shri. Arjun Pandiyan IAS and the futuristic proposed plan of action was also discussed.





Glimpses of Kasaragod field visits by Mission Director and AMRUT SMMU Team



AMRUT SMMU Team, Meeting with the District Collector Shri. Arjun Pandian IAS



MURALI KOCHUKRISHNAN
Environmental Expert cum Hydrogeologist,
SMMU, AMRUT

Report on Training of Trainers on “Preparing Bankable Climate-Resilient Urban Infrastructure Projects” conducted from 30th & 31st March 2026 at Novotel Hotel, New Delhi by GIZ- European Union.

The project “Sustainable Urban Development - Smart Cities II” (SUDSC II) implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) in cooperation with the Ministry of Housing and Urban Affairs (MoHUA), Government of India (GoI), is implementing the EU joint action on “Support to Sustainable Urbanisation in India”. This action seeks to strengthen ties between India and the European Union (EU) by fostering and expanding quality policy dialogue on sustainable urbanisation, fostering sustainable investments and mutually beneficial cooperation, with an emphasis on strategy towards preparation of Bankable projects for sustainable urban resilient infrastructure. In the above context, A two-day Training of Trainers (ToT) programme on “Preparing Bankable Climate-Resilient Urban Infrastructure Projects” was conducted under the aegis of the Ministry of Housing and Urban Affairs (MoHUA), Government of India, in collaboration with GIZ-EU. The programme aimed at strengthening the capacities of government officials in developing financially viable, sustainable, and climate-resilient urban infrastructure projects. Officials from AMRUT Keralam, including the Mission Director and subject experts in environment, finance, and capacity building, additional Director, Urban Directorate and SE Kochi corporation have participated in the foresaid ToT as nominated by the State Mission Management Unit, Thiruvananthapuram.

Objectives of the Training:

The key objectives of the programme were:

- ♦To enhance understanding of **bankable urban infrastructure projects**
- ♦To build capacity in **project preparation and financial planning**
- ♦To introduce **innovative financing mechanisms**
- ♦To integrate **climate resilience, sustainability, and gender responsiveness** into project design
- ♦To enable participants to act as **trainers and resource persons** for Urban Local Bodies (ULBs)
- ♦To **refine and Synthesize on the Training guide book for its perfection.**



Participants from Different State officials for the ToT on Bankable Projects



AMRUT SMMU & Urban Directorate Team participation

This draft training Guidebook was developed by Deloitte to address challenges identified in recent trainings, where participants struggled to prepare bankable urban infrastructure projects amid a rapidly changing funding landscape. It serves as both a reference and a training tool to strengthen the preparation of high-quality, investment-ready projects that **are financially viable, inclusive, resilient, sustainable, and gender responsive**. Covering the full urban project lifecycle—from design to preparation—it introduces core concepts of **urban infrastructure, bankability, and creditworthiness, and provides a step-by-step approach to project development**, including innovative financing instruments (such as municipal bonds and blended finance), **risk management, procurement models, and practical case studies and exercises to embed sustainability, equity, and climate resilience into project design by taking all the valuable points from the participants**. The training also focused on enabling participants to support ULBs in preparing investment-ready projects and improving engagement with financial institutions.

Training Structure and Content:

The programme was structured into multiple modules covering the entire project lifecycle, as detailed in the agenda

Day 1 Highlights:

- ◆ Overview of bankable projects and their relevance
- ◆ Introduction to urban infrastructure and bankability concepts
- ◆ Understanding city needs, resilience, and gender responsiveness
- ◆ Project conceptualization and technical feasibility
- ◆ Identification of priority sectors and screening of solutions

Day 2 Highlights

- ◆ Exploration of financing channels:
 - ◆ Public sector (UIDF, Urban Challenge Fund, Municipal Bonds)
 - ◆ Private sector (CSR funds, Green Climate Fund, carbon credits)
- ◆ Development of financial, economic, and management cases
- ◆ Risk assessment and procurement strategies
- ◆ Case studies on PPP models and practical applications

The sessions included interactive discussions, Q&A sessions, and practical exercises to reinforce learning outcomes.

Key Learnings:

The training provided significant insights into:

a) Bankability and Financial Structuring

Participants gained a clear understanding of:

- Revenue models and cost recovery mechanisms
- Financial viability assessment including present value and debt service coverage

Structuring projects for attracting investments

b) Project Lifecycle Approach

The programme emphasized:

- ♦ End-to-end project development (concept to implementation)
- ♦ Importance of strategic business case preparation
- ♦ Integration of resilience and sustainability parameters

c) Innovative Financing Mechanisms

Exposure was provided on:

- ♦ Blended finance and pooled funds
- ♦ Municipal bonds and creditworthiness
- ♦ Climate financing opportunities

d) Risk and Procurement Management

Participants learned:

- ♦ Identification and mitigation of project risks
- ♦ Selection of appropriate procurement models
- ♦ Use of PPP frameworks in urban infrastructure

Relevance to AMRUT 2.0 and Urban Development Projects:

The training aligns closely with the objectives of AMRUT 2.0, particularly in:

- ♦ Promoting **climate-resilient urban infrastructure**
- ♦ Enhancing **financial sustainability of projects**
- ♦ Strengthening **institutional capacity of ULBs**

Supporting preparation of **bankable DPRs and investment-ready proposals**

The first draft guidebook introduced at the session will be synthesised and refined in due course of time by GIZ-EU and the same will be circulated further to serve as a comprehensive reference for preparing high-quality urban infrastructure projects.

Outcomes and Way Forward

The following outcomes are envisaged:

- ♦ Enhanced capacity of trained officials to **prepare and evaluate bankable projects**
- ♦ Improved ability to **train ULB officials and stakeholders**
- ♦ Strengthened project pipeline under AMRUT 2.0
- ♦ Increased adoption of **innovative financing and resilient planning approaches**

Way Forward:

- ♦ Conduct **state-level training sessions** for ULB officials
- ♦ Utilize the **training guidebook** for capacity building programmes
- ♦ Integrate learnings into **DPR preparation and project appraisal**
- ♦ Promote **financially viable, Gender sensitive and climate-resilient project proposals**

Conclusion:

The Training of Trainers programme successfully strengthened participants technical and financial competencies in preparing bankable urban infrastructure projects, providing a structured framework to **integrate sustainability, resilience, financial viability, and gender responsiveness into urban planning and project development**. Drawing on the practical and didactic examples in the accompanying handout, the training has been designed for institutions that build capacities for government officials and state financial agencies, equipping them to support cities in accessing essential knowledge and investment-ready tools. It deepens understanding of the urban infrastructure project lifecycle, enhances skills in strategic business-case development and financing strategies, and **enables participants to consistently design resilient, inclusive, and financially sound projects that improve the quality of urban infrastructure under AMRUT 2.0 and support long-term urban transformation in Kerala.**

Report on Consultative Meeting towards Accelerated 24x7 Water Supply Plans and NRW reduction Under AMRUT 2.0.

Rahul.N, AMRUT SMMU.

A high-level consultative meeting was convened at the Kerala Water Authority (KWA) Head Office to advance the implementation of **24x7 water supply projects and NRW reduction strategy** under the Government of India's AMRUT 2.0 mission. The meeting marked an important step towards refining project proposals, time to time technical intervention and extending all hand holding support and ensuring timely execution of subject work across selected cities in Kerala.

Driving the Vision of Continuous Water Supply

The AMRUT 2.0 guidelines issued by the Ministry of Housing and Urban Affairs (MoHUA) place strong emphasis on achieving **24x7 drinking water supply (Drink From Tap - DFT)** and **NRW reduction** in at least one District Metered Area (DMA) in each AMRUT city.

In Kerala, the Kerala Water Authority has been designated as the **nodal agency** responsible for planning and implementing these projects. While Detailed Project Reports (DPRs) had already been submitted to key state-level committees - including the State Technical Forum (STF), State Level Technical Committee (SLTC), and State High Powered Steering Committee (SHPSOC)—they required substantial refinement and technical strengthening.

Role of the Technical Support Unit (TSU)

To enhance the quality and feasibility of the DPRs, the AMRUT Mission appointed a **Technical Support Unit (TSU)** to provide expert guidance and technical validation.

The TSU undertook:

- ♦ Comprehensive review of all DPRs submitted by KWA
- ♦ Field visits to proposed 24x7 DMAs and adjoining areas
- ♦ Verification and validation of technical data
- ♦ Time to time technical support and guidance right from Initiation to implementation and completion of project.

During this process, the team identified **significant data gaps and inconsistencies**, highlighting the need for improved data collection and analysis.

A Platform for Collaboration and Clarity

To address these challenges, a consultative meeting was organized, bringing together officials from KWA and Urban Local Bodies (ULBs). The session was attended by the **Managing Director of Kerala Water Authority** and the **Mission Director, AMRUT**, underscoring the importance of the initiative.

The TSU team, led by **Mr. Madhusudhan Reddy**, presented:

- ♦ The current status of DPRs city-wise
- ♦ Key data deficiencies
- ♦ Recommendations for strengthening detailed project proposals



Key Technical Focus Areas

The meeting emphasized several critical components required for successful implementation of 24x7 water supply systems:

- ◆ **Comprehensive field surveys** to ensure accurate baseline data
- ◆ **Water balance / Audit studies** to assess supply-demand dynamics
- ◆ **DMA demarcation, Source and treatment infrastructures related assessment and studies,**
- ◆ **Synthesis of Utility mapping related data** for precise infrastructure planning
- ◆ Integration of monitoring and electronic systems for efficient operations of pressure management etc
- ◆ Complete project planning processes with all SMART Elements and Automation.

These elements were identified as essential for developing robust, implementable DPRs on ground with perfection of implementation.

Constructive Discussions and Way Forward

The meeting provided a platform for open dialogue, where:

- ◆ Concerns and technical queries were addressed
- ◆ Clarifications were provided on project methodologies
- ◆ Departments aligned on next steps for DPR improvement and furtherance of the processes

KWA officials also emphasized the need for **continued handholding support from the TSU**, particularly in areas such as Hydraulic aspects, Pressure monitoring systems and electronic components of the projects as part of SMART Monitoring systems.

Positive Momentum for Implementation

The consultative session concluded on a constructive note, with all stakeholders agreeing to:

- ◆ Expedite the correction and upgrading of DPRs
- ◆ Strengthen data collection and validation processes
- ◆ Work collaboratively toward timely project approval, timely tendering and execution of the project with defined time lines

Conclusion

The meeting represents a crucial milestone in Kerala's journey toward **sustainable, continuous water supply systems**. By reinforcing technical rigor, improving data accuracy, and fostering inter-agency collaboration, the AMRUT 2.0 initiative is steadily progressing toward its goal of delivering **reliable, 24x7 drinking water services** and **NRW reduction patterns less than 20%** to all urban regions



Introduction of the subject Workshop by UIWE



Project Status presentation by TSU Team Leader





Reviving Urban Water Bodies: A Nature-Based Solution for Sustainable Pond Restoration

A Case Study on Kochattilkulam & Puthankulam Using GeoBlue Technologies

Rahul.N, AMRUT SMMU.

Introduction: The Growing Crisis of Urban Water Bodies

Urban ponds are vital ecological assets that support groundwater recharge, biodiversity, and environmental balance. However, rapid urbanization, excessive nutrient loading, and organic pollution have significantly degraded these water bodies.

In Kerala and across India, declining water quality has also raised **public health concerns**, particularly due to microbial contamination in stagnant water systems. The Operation and maintenance of the rejuvenated ponds in the urban scape is a difficult task with the work loads of the health and engineering sections

Addressing this challenge requires a shift from conventional chemical treatments to **sustainable, nature-based restoration approaches**.

Understanding the Root Cause: The Nitrate Problem

A key insight from the experiences of the Mission is that **excess nitrates are the root cause of most water pollution issues**.

When nitrates remain unused:

- ♦ They trigger algal blooms and turbidity
- ♦ Promote pathogen growth and foul odor
- ♦ Lead to waterlogging and mosquito breeding
- ♦ Cause ecological imbalance and waterborne diseases

In contrast, **low-nitrate systems** are naturally self-healing, capable of:

- ♦ Breaking down toxins and heavy metals
- ♦ Converting harmful salts into useful minerals
- ♦ Supporting healthy ecosystems and productive soils

The Approach: Working with Nature, Not Against It

AMRUT Mission wanted to introduces a **bio-inspired, eco-logical model** based on natural evolution.

This approach treats nature as:

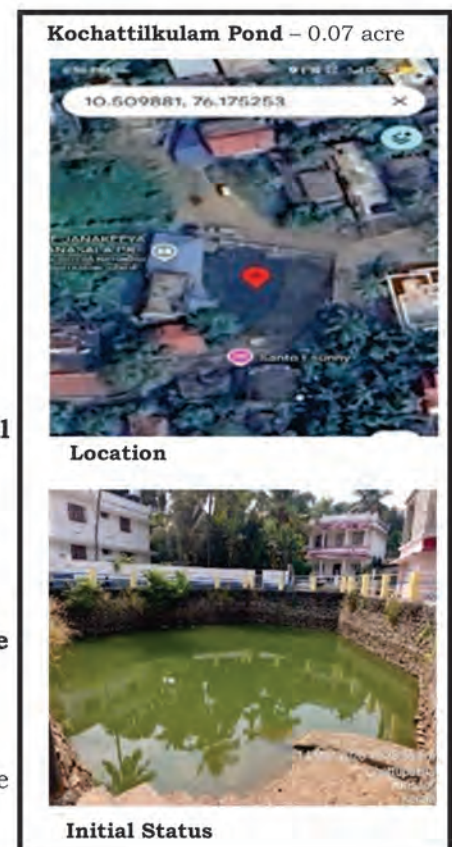
- ♦ A **control system**
- ♦ A network of **biosensors and bio-indicators**
- ♦ A self-regulating ecological engine

Instead of masking symptoms, the system focuses on **correcting the root cause of pollution**.

Core Technologies used in Driving Restoration

1. Water Forest™ Technology

Water Forest is a **nano-catalytic oxygenation system** that acts like a “**compact artificial forest**” within water bodies.



Kochattilkulam Pond – 0.07 acre

Location

Initial Status

Key features:

- ◆ Produces *active oxygen* using pollutants as input
- ◆ Enhances natural microbial purification
- ◆ Eliminates pathogens and toxic organics
- ◆ Works without electricity, aerators, or chemicals

Remarkably,

1 unit of Water Forest = ecological function of 1 acre of natural forest.

2. AlgOx™ Technology

AlgOx complements Water Forest by **restoring nutrient balance** through ecological processes.

How it works:

- ◆ Stimulates beneficial phytoplankton (especially diatoms)
- ◆ Enables natural consumption of excess nitrates and phosphates
- ◆ Prevents harmful algal blooms

Ecological chain reaction:

Diatoms → Zooplankton → Fish → Balanced aquatic ecosystem

Project Implementation: Kochattilkulam & Puthankulam in Thrissur Corporation

The restoration project focuses on two urban ponds:

Implementation Plan:

1. Baseline water quality assessment
2. Deployment of Water Forest units
3. Application of AlgOx formulation
4. Continuous monitoring (2 months)
5. Final evaluation and reporting

Monitoring and Scientific Evaluation:

Key parameters tracked include:

- ◆ Dissolved Oxygen (DO)
- ◆ pH, nitrates, phosphates
- ◆ BOD and COD
- ◆ Turbidity and algal density
- ◆ Odor and visual clarity

This ensures **data-driven validation of ecological restoration.**

Expected Outcomes and Impact

The project envisions measurable improvements:

Environmental Benefits:

- ◆ Increased dissolved oxygen levels
- ◆ Reduction in nutrient pollution
- ◆ Improved water clarity and quality
- ◆ Restoration of ecological balance

Public Health Benefits:

- ◆ Reduced pathogen-friendly conditions
- ◆ Lower risk from harmful microorganisms
- ◆ Safer water for community use

Puthankulam Pond – 0.13 acre



Location



Initial Status prior Algox deployment

Operational Advantages:

- ◆ Zero energy consumption
- ◆ Minimal maintenance
- ◆ No chemical dependency
- ◆ Cost-effective long-term solution

A Scalable Model for India:

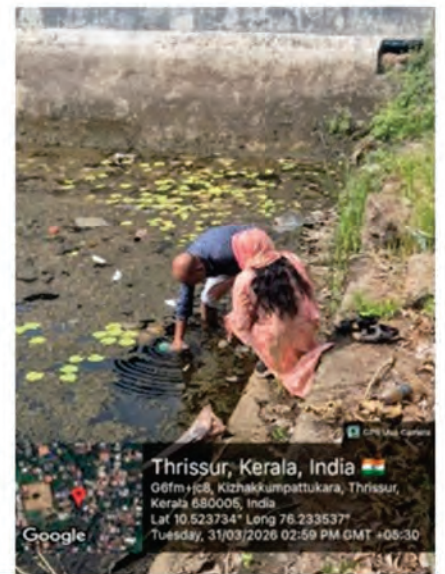
The model aligns with national initiatives such as the **AMRUT Mission**, Amrit Sarovar, Jal Hi Amrit, AMRUT 2.0 and so on are the list of Mission based projects rolled out by the Government of India, offering a **replicable framework for urban pond restoration across India.**

Its strengths include:

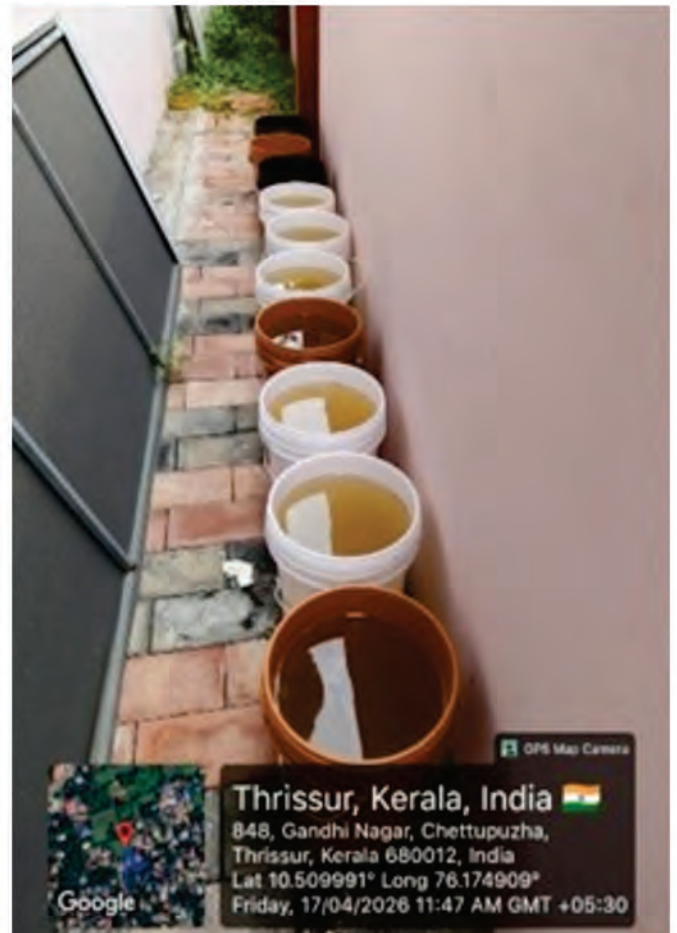
- ◆ Sustainability
- ◆ Scalability
- ◆ Ecological compatibility
- ◆ Low operational cost

Operational Strategy

The operations are planned in a way to capture the stagewise development and outcomes of these technologies. The status of these ponds were recorded both physically and digitally. Water quality and silt condition is tested in accredited labs. The technology was deployed stage wise with adequate catalyst to help the technology perform better. Each step is recorded with utmost care for documentation. The progress is monitored on regular intervals and the testing is also done at different stages. In two months' time the outcome of these advanced technologies will be studied and recorded for further scrutiny



Water and Silt Sampling at Sites



Nano-Technology Deployment at site

Conclusion: Toward a Better Green Future:

The restoration of Kochattikulam and Puthankulam ponds demonstrates a crucial shift in environmental management—from reactive treatment to **proactive ecological healing**.

By combining **nano-catalytic oxygenation** with **natural nutrient cycling**, advance technologies offer a powerful, sustainable pathway to rejuvenate degraded water bodies.

This approach not only restores water quality but also rebuilds ecosystems, safeguards public health, and sets the stage for a **resilient, water-secure future**.

MISSION PROGRESS

```
graph TD; MP[MISSION PROGRESS] --> AMRUT1[AMRUT 1]; MP --> AMRUT2[AMRUT 2.0]; AMRUT1 --> TP1[TOTAL PROJECTS<br/>1113 Nos.]; AMRUT2 --> TP2[TOTAL PROJECTS<br/>711 Nos.]; TP1 --> AW1[AWARDED<br/>1113 Nos.]; TP2 --> AW2[AWARDED<br/>562 Nos.]; AW1 --> CP1[COMPLETED<br/>1092 Nos.]; AW2 --> CP2[COMPLETED<br/>151 Nos.]; CP1 --> EXP1[EXPENDITURE<br/>2266 Cr.]; CP2 --> EXP2[EXPENDITURE<br/>740 Cr.]
```

AMRUT 1

TOTAL PROJECTS

1113 Nos.

AWARDED

1113 Nos.

COMPLETED

1092 Nos.

EXPENDITURE

2266 Cr.

AMRUT 2.0

TOTAL PROJECTS

711 Nos.

AWARDED

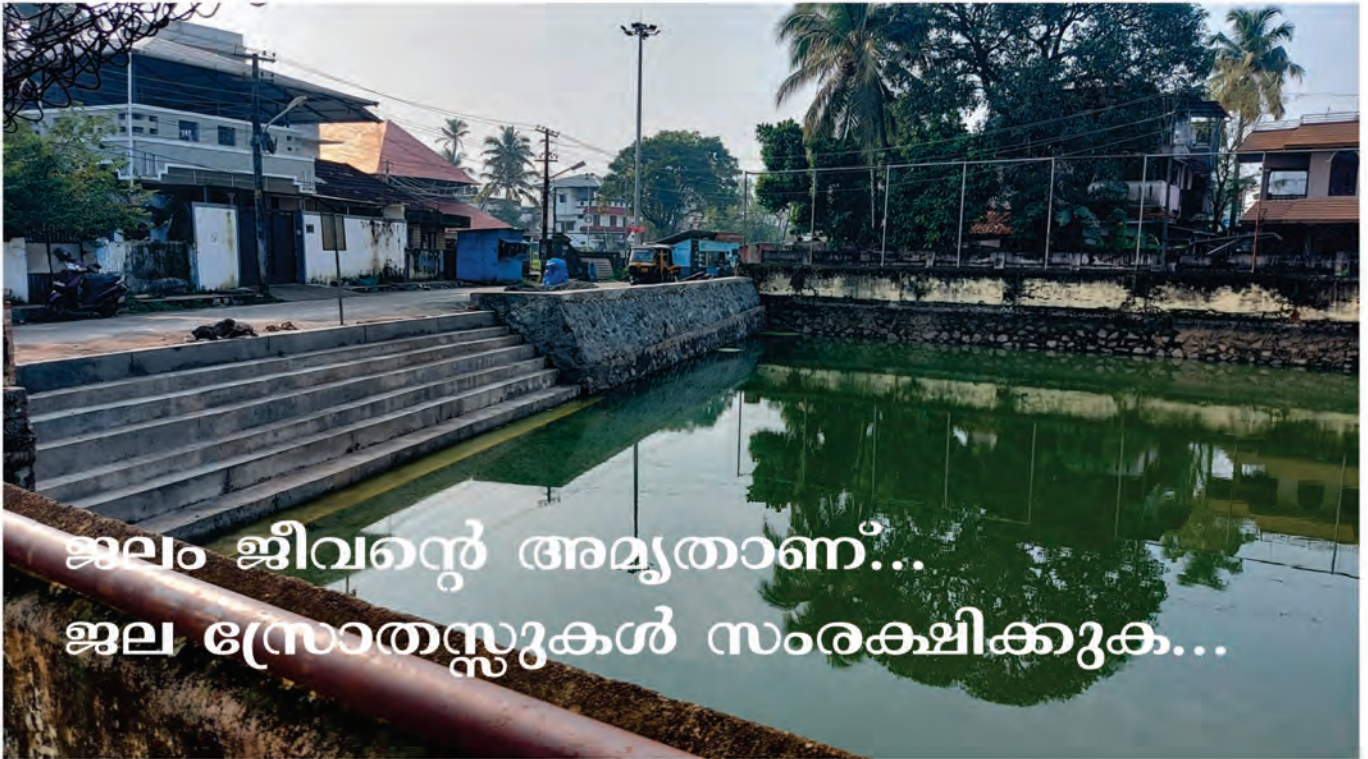
562 Nos.

COMPLETED

151 Nos.

EXPENDITURE

740 Cr.



ജലം ജീവന്റെ അമൃതമാണ്...
ജല സ്രോതസ്സുകൾ സംരക്ഷിക്കുക...