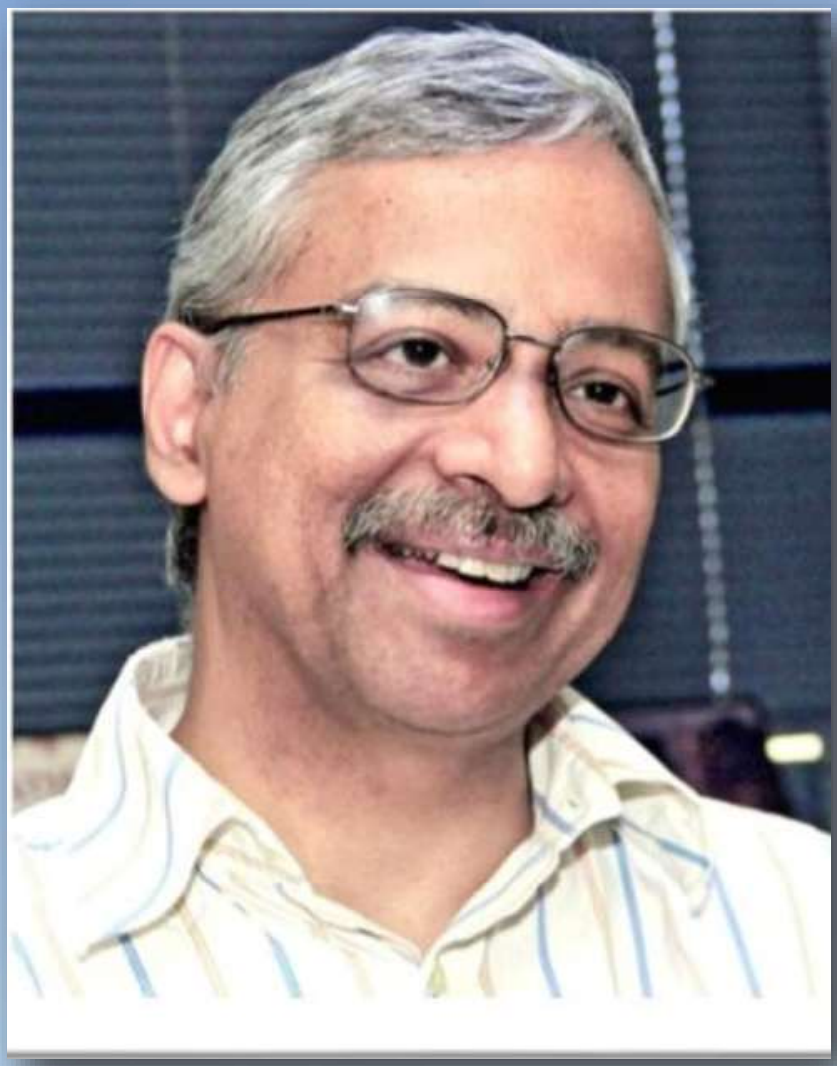
2026 ജൂലൈ

അമൃത്
വാർത്താപത്രിക

ലക്കം 2



ബഹു. തദ്ദേശസ്വയംഭരണ വകുപ്പ് മന്ത്രി
ശ്രീ. കെ.എം. ഷാജിയ്ക്ക് സ്വാഗതം



സംസ്ഥാന ചീഫ് സെക്രട്ടറിയും അമൃത് സംസ്ഥാനതല ഉന്നതാധികാര സമിതി ചെയർമാനുമായി വിരമിച്ച ഡോ. എ. ജയതിലക് ഐ.എ.എസിന് അമൃത് മിഷന്റെ കൃതജ്ഞതയും ആശംസകളും നേരുന്നു.



അമൃത് വാർത്താ പത്രിക

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തദ്ദേശസ്വയംഭരണ വകുപ്പ്
കേരളം സർക്കാർ

ചീഫ് എഡിറ്റർ
സൂരജ് ഷാജി ഐ.എ.എസ്സ്
മിഷൻ ഡയറക്ടർ

എഡിറ്റർ
മുരളി കൊച്ചുകൃഷ്ണൻ
എൻവിയോൺമെന്റ് എക്സപർട്ട് കം
ഹൈഡ്രോ ജിയോളജിസ്റ്റ്

അസിസ്റ്റന്റ് എഡിറ്റർ
സാവിയോ സജി ഇ.ആർ.

Atal Mission for Rejuvenation and Urban Transformation

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(സ്വകാര്യ വിതരണത്തിന് മാത്രം)



എഡിറ്റോറിയൽ

സംസ്ഥാനത്തെ നഗരങ്ങളുടെ അടിസ്ഥാന ഭൗതീക വികസന രംഗത്തും ജലവിതരണ സംരക്ഷണ മേഖലയിലും നിർണായക സ്വാധീനം ചെലുത്തുവാൻ അമൃത് പദ്ധതികൾ സാധിക്കുന്നുണ്ട്. തൃശ്ശൂർ കോർപ്പറേഷന് ലഭിച്ച പരിസ്ഥിതി മിത്ര പുരസ്കാരം അമൃത് പദ്ധതികൾ നഗരങ്ങളിലുണ്ടാക്കിയ മാറ്റത്തിന് വലിയൊരു ഉദാഹരണമാണ്. ബഹു. തദ്ദേശ സ്വയംഭരണ വകുപ്പ് മന്ത്രി മിഷനുകളുടെ അവലോകന യോഗത്തിൽ അഭിപ്രായപ്പെട്ടതുപോലെ നഗര വികസന പദ്ധതികൾ ജനങ്ങൾക്ക് നേരിട്ട് ഗുണം ലഭിക്കുന്ന തരത്തിൽ വേഗത്തിൽ നടപ്പിലാക്കേണ്ടതായിട്ടുണ്ട്. ഇക്കാര്യത്തിൽ അമൃത് 2.0 പദ്ധതികൾ നടപ്പാക്കുന്ന കാര്യത്തിൽ സമയക്രമം കൃത്യമായി പാലിക്കേണ്ടതാണെന്ന കാര്യം വീണ്ടും ഓർമ്മിപ്പിക്കുന്നു.

അമൃത് 2.0 പദ്ധതികളുടെ ഭാഗമായി നഗരസഭകൾ കൈവരിക്കേണ്ടതായ പരിഷ്ക്കരണ നാഴികക്കല്ലുകൾ പൂർത്തീകരിക്കേണ്ടതുണ്ട്. അമൃത് 2.0 പദ്ധതിയിൽ 3519 കോടി രൂപയുടെ 711 പദ്ധതികൾക്കാണ് അംഗീകാരം ലഭിച്ചിട്ടുള്ളത്.ഇതിൽ 583 പദ്ധതികൾ അവാർഡ് ചെയ്ത് പ്രവർത്തികൾ പുരോഗമിക്കുന്നു. 819.20 കോടി രൂപ ചെലവഴിച്ചു. 50,000 മുതൽ 99,999 വരെ ജനസംഖ്യയുള്ള ടയർ 2 & 3 ആയ 49 നഗരങ്ങളുടെ ജി.ഐ.എസ്. അധിഷ്ഠിത മാസ്റ്റർ പ്ലാൻ പ്രക്രീയ പുരോഗമിച്ചു കൊണ്ടിരിക്കുന്നു. അതോടൊപ്പം നഗരങ്ങളുടെ അടിസഥാന ഭൗതീക സൗകര്യങ്ങളിൽ സമൂല മാറ്റം ലക്ഷ്യമിട്ടുകൊണ്ടുള്ള കേന്ദ്ര സർക്കാർ പദ്ധതിയായ അർബൻ ചലഞ്ച് ഫണ്ടിന്റെ നോഡൽ ഏജൻസിയായി സ്റ്റേറ്റ് മിഷൻ മാനേജ്മെന്റ് യൂണിറ്റ് നോഡൽ ഓഫീസറായി അമൃത് മിഷൻ ഡയറക്ടറെ ചുമതലപ്പെടുത്തിയ വിവരം ഏറെ സന്തോഷത്തോടെ അറിയിക്കുന്നു.ഏവരുടെയും സഹകരണം പ്രതീക്ഷിക്കുന്നു.

മിഷൻ ഡയറക്ടർ



കേരളത്തിന്റെ ചീഫ് സെക്രട്ടറിയായി ചുമതലയേറ്റ

ശ്രീ ബിശ്വനാഥ് സിൻഹ ഐ.എ.എസിന് അമൃത് മിഷന്റെ ആശംസകൾ

അമൃത് വാർത്താ പത്രിക

ജൂലൈ 2026

ഉള്ളടക്കം



ബഹു. തദ്ദേശസ്വയംഭരണ വകുപ്പ് മന്ത്രി
ശ്രീ. കെ.എം. ഷാജി

5 അവലോകന യോഗം

6 പോട്ട് ഹോൾ റിപ്പയറിംഗ് യന്ത്രം

7 തൃശ്ശൂർ കോർപ്പറേഷന് പരിസ്ഥിതി മിത്രം പുരസ്കാരം

8 Training Report on “Design Elements for Implementing Used Water Circularity Principles” with Special emphasis on Integrated Water Management, Circularity, and Climate Resilience

11 AMRUT 2.0 – Report on Micro Water supply Scheme getting implemented at Kothamangalam

20 Report on The National Level Convocation for "URTP (Urban Renaissance Tech Program for Urban Managers)

23 Driving Digital Transformation in Urban Water Supply: SCADA & IoT related online Workshop for AMRUT and KWA officials



അമൃത് മിത്ര - ചാലക്കുടി മുനിസിപ്പാലിറ്റി - വുമൺ ഫോർ ട്രീ



അമൃത് മിത്ര പദ്ധതിയുടെ ഭാഗമായി മൂവാറ്റുപുഴ മുനിസിപ്പാലിറ്റിയിൽ സജ്ജമാക്കിയ വേസ്റ്റ് ടു വണ്ടർ പാർക്ക്



അമൃത് മിത്ര പദ്ധതിയുടെ ഭാഗമായി മൂവാറ്റുപുഴ മുനിസിപ്പാലിറ്റിയിൽ സജ്ജമാക്കിയ വേസ്റ്റ് ടു വണ്ടർ പാർക്ക്



തദ്ദേശ സ്വയംഭരണ വകുപ്പ് അവലോകന യോഗം

തദ്ദേശ സ്വയംഭരണ വകുപ്പ് മന്ത്രി ശ്രീ. കെ.എം. ഷാജി തദ്ദേശ സ്വയംഭരണ വകുപ്പിന്റെ കീഴിൽ പ്രവർത്തിക്കുന്ന വിവിധ മിഷനുകളുടെ നാളിതുവരെയുള്ള പ്രവർത്തനം അവലോകനം ചെയ്ത് പുരോഗതി വിലയിരുത്തി. മിഷനുകളുടെ പ്രാധാന്യം മനസ്സിലാക്കി അവ സമയ ബന്ധിതമായി പൂർത്തിയാക്കണമെന്ന് നിർദ്ദേശിച്ചു.

അമൃത് പദ്ധതിയുടെ കീഴിൽ നഗരങ്ങളുടെ അടിസ്ഥാന ഭൗതീക സൗകര്യ വികസനത്തിനായി വിവിധ മേഖലകളിലായി നടപ്പിലാക്കുന്ന പദ്ധതികളുടെ പുരോ ഗതി മന്ത്രി വിലയിരുത്തി. നഗരങ്ങളുടെ ജലഭദ്രത ലക്ഷ്യമിട്ട് നടപ്പിലാക്കുന്ന അമൃത് 2.0 പദ്ധതികളുടെ പ്രവർത്തന പുരോഗതി മിഷൻ ഡയറക്ടർ യോഗത്തിൽ വിശദീകരിച്ചു. പദ്ധതികളുടെ ടെന്റർ നടപടികൾ, നിർമാണ പുരോഗതി, ധന വിനിയോഗം, കേന്ദ്ര സംസ്ഥാന വിഹിതങ്ങളുടെ കാര്യക്ഷമമായ വിനിയോഗം എന്നിവയിൽ പ്രത്യേക ശ്രദ്ധ പുലർത്തണമെന്നും, നഗര വികസന പദ്ധതികൾ ജനങ്ങൾക്ക് നേരിട്ട് ഗുണം ലഭിക്കുന്ന തരത്തിൽ വേഗത്തിൽ നടപ്പിലാക്കണമെന്നും മന്ത്രി നിർദ്ദേശിച്ചു.

തദ്ദേശ സ്വയംഭരണ വകുപ്പ് സെക്രട്ടറി ശ്രീമതി ടിങ്കു ബിസ്വാൾ ഐ.എ.എസ്., പ്രിൻസിപ്പൽ സെക്രട്ടറി ശ്രീമതി അനുപമ ഐ.എ.എസ്., ശ്രീ. ജെറോമിക് ജെറോം ഐ.എ.എസ്., ശ്രീമതി ദിവ്യ എസ്. അയ്യർ ഐ.എ.എസ്., ശ്രീ. സൂരജ് ഷാജി ഐ.എ.എസ്., ശ്രീമതി അപൂർവ ത്രിപാഠി ഐ.എ.സ്., ശ്രീ. ഹരികുമാർ ഐ.എ.എസ്. തുടങ്ങിയ ഉന്നത ഉദ്യോഗസ്ഥർ യോഗത്തിൽ പങ്കെടുത്തു.





തൃശ്ശൂർ നഗരസഭ പോട്ട് ഹോൾ റിപ്പയറിംഗ് യന്ത്രം ഉത്ഘാടനം ചെയ്തു

അമൃത് പദ്ധതിയിൽ ഉൾപ്പെടുത്തി തൃശ്ശൂർ നഗരസഭയിൽ അമൃത് പദ്ധതിയുടെ ഭാഗമായി ജലവിതരണ പൈപ്പുകൾ സ്ഥാപിച്ച റോഡ് റോഡ് പുന: സ്ഥാപിക്കുന്നതിന്റെ പോട്ട് ഹോൾ റിപ്പയറിംഗ് യന്ത്രം വാങ്ങി. മഴക്കാലത്തും അതിനുശേഷവും റോഡുകളിൽ രൂപപ്പെടുന്ന കുഴികൾ വേഗത്തിൽ ദീർഘകാലം നിലനിൽക്കുന്ന രീതിയിൽ നികത്തുവാൻ അത്യാധുനിക സംവിധാനമുള്ള ഈ യന്ത്രം സഹായിക്കുന്നു.

പരമ്പരാഗത കുഴി നികത്തൽ രീതികൾക്ക് കൂടുതൽ മാനുഷികാധ്വാനവും സമയവും ആവശ്യമാണ്. ഇത്തരത്തിൽ നടത്തുന്ന അറ്റകുറ്റപ്പണികൾ താൽക്കാലിക പരിഹാര മായി മാറുകയും വീണ്ടും ആവർത്തിക്കപ്പെടുകയും ചെയ്യുന്ന സാഹചര്യമാണ് നിലവിലുള്ളത്. എന്നാൽ ഈ യന്ത്രത്തിലെ സാങ്കേതിക വിദ്യ ഉപയോഗിച്ച് വേഗത്തിലും കുറഞ്ഞ ചെലവിലും ഉയർന്ന നിലവാരത്തിലും അറ്റകുറ്റപ്പണികൾ നിർവഹിക്കാൻ സാധിക്കും. ഇപ്രകാരം റോഡുകളുടെ അറ്റകുറ്റപ്പണികൾ നടത്തുന്നത് വഴി റോഡുകളുടെ കാലാവധി വർദ്ധിക്കുകയും ഗതാഗത തടസ്സങ്ങൾ കുറയുകയും ചെയ്യും.

നഗരസഭയുടെ അടിസ്ഥാന സൗകര്യ വികസനത്തിനും ആധുനികവത്ക്കരണത്തിനും ഈ യന്ത്രം ഒരു മുതൽക്കൂട്ടായിരിക്കും. 2026 ജൂൺ 9 ന് വെസ്റ്റ് ഫോർട്ടിൽ നടന്ന ചടങ്ങിൽ ബഹു. കായികക്ഷേമ വകുപ്പ് മന്ത്രി ശ്രീ ഒ.ജെ. ജെനീഷ് യന്ത്രത്തിന്റെ പ്രവർത്തനോത്ഘാടനം നിർവ്വഹിച്ചു. മേയർ ഡോ. നിജി ജസ്റ്റിൻ, കൗൺസിലർമാർ, ഉദ്യോഗസ്ഥർ തുടങ്ങിയവർ ചടങ്ങിൽ പങ്കെടുത്തു.









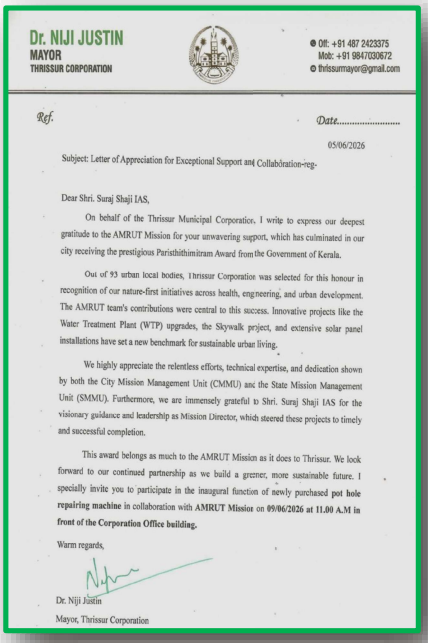


തൃശ്ശൂർ കോർപ്പറേഷന് 2026 ലെ പരിസ്ഥിതി മിത്രം പുരസ്കാരം

പരിസ്ഥിതി സംരക്ഷണത്തിനും സുസ്ഥിര വികസനത്തിനുമുള്ള സംഭാവനകൾ പരിഗണിച്ച് തൃശ്ശൂർ കോർപ്പറേഷന് 2026 ലെ പരിസ്ഥിതി മിത്രം പുരസ്കാരം ലഭിച്ചു. ലോക പരിസ്ഥിതി ദിനമായ 2026 ജൂൺ 5 ന് തിരുവനന്തപുരത്ത് വച്ച് നടന്ന ചടങ്ങിൽ ബഹു. കേരള മുഖ്യമന്ത്രി ശ്രീ. വി.ഡി. സതീശൻ പുരസ്കാരം സമ്മാനിച്ചു. മന്ത്രിമാരായ ശ്രീ. കെ. മുരളീധരൻ, ശ്രീ. സണ്ണി ജോസഫ്, കോർപ്പറേഷൻ മേയർ, മറ്റ് കൗൺസിൽ അംഗങ്ങൾ, ഉദ്യോഗസ്ഥർ തുടങ്ങിയവർ ചടങ്ങിൽ പങ്കെടുത്തു.

തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളുടെ വിഭാഗത്തിലാണ് തൃശ്ശൂർ കോർപ്പറേഷൻ 2026 ലെ പരിസ്ഥിതി മിത്രം പുരസ്കാരം കരസ്ഥമാക്കിയത്. പ്രകൃതിക്ക് മുൻഗണന നൽകിക്കൊണ്ട് കോർപ്പറേഷൻ നടപ്പിലാക്കിയ വിവിധ എഞ്ചിനീയറിംഗ് പദ്ധതികൾ, ആരോഗ്യ വകുപ്പിന്റെ സവിശേഷമായ ഇടപെടലുകൾ, അമൃത് പദ്ധതികൾ എന്നിവ വിലയിരുത്തിയാണ് പുരസ്കാര നിർണയം നടത്തിയത്. നഗരത്തിലെ ജലവിതരണം കാര്യക്ഷമമായി നടത്തുന്നതിനായി നടപ്പിലാക്കിയ 'വെറ്റ്' പദ്ധതി, പരിസ്ഥിതി സൗഹൃദ നഗര അടിസ്ഥാന സൗകര്യ വികസന മാതൃകയായ 'സ്കൈ വാക്' എന്നീ അമൃത് പദ്ധതികളാണ് വിലയിരുത്തപ്പെട്ടത്.

സംസ്ഥാന പരിസ്ഥിതി കാലാവസ്ഥാ വ്യതിയാന ഡയറക്ടറേറ്റ്, കേരള സംസ്ഥാന ജൈവ വൈവിധ്യ ബോർഡ്, കേരള സംസ്ഥാന ശാസ്ത്ര സാങ്കേതിക പരിസ്ഥിതി കൗൺസിൽ എന്നിവർ സംയുക്തമായാണ് പുരസ്കാര സമർപ്പണ ചടങ്ങ് സംഘടിപ്പിച്ചത്.



Dr. NIJI JUSTIN
MAYOR
THRISSUR CORPORATION

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Ref.

Date.....
05/06/2026

Subject: Letter of Appreciation for Exceptional Support and Collaboration-reg-

Dear Shri. Suraj Shaji IAS,

On behalf of the Thrissur Municipal Corporation, I write to express our deepest gratitude to the AMRUT Mission for your unwavering support, which has culminated in our city receiving the prestigious Paristhithimitram Award from the Government of Kerala.

Out of 93 urban local bodies, Thrissur Corporation was selected for this honour in recognition of our nature-first initiatives across health, engineering, and urban development. The AMRUT team's contributions were central to this success. Innovative projects like the Water Treatment Plant (WTP) upgrades, the Skywalk project, and extensive solar panel installations have set a new benchmark for sustainable urban living.

We highly appreciate the relentless efforts, technical expertise, and dedication shown by both the City Mission Management Unit (CMMU) and the State Mission Management Unit (SMMU). Furthermore, we are immensely grateful to Shri. Suraj Shaji IAS for the visionary guidance and leadership as Mission Director, which steered these projects to timely and successful completion.

This award belongs as much to the AMRUT Mission as it does to Thrissur. We look forward to our continued partnership as we build a greener, more sustainable future. I specially invite you to participate in the inaugural function of newly purchased **pot hole repairing machine** in collaboration with **AMRUT Mission** on **09/06/2026 at 11.00 A.M in front of the Corporation Office building.**

Warm regards,

Dr. Niji Justin
Mayor, Thrissur Corporation



Training Report on "Design Elements for Implementing Used Water Circularity Principles" with Special emphasis on Integrated Water Management, Circularity, and Climate Resilience. (First Phase of Training)

MURALI KOCHUKRISHNAN
Environmental Expert cum Hydrogeologist

Introduction

The training is jointly organized by Ministry of Housing and Urban affairs, Singapore cooperation Enterprises for Urban water Management in collaboration with the Knowledge partner – Jacobs. The Training has been inaugurated by **Ms. Grace Lalrindiki Pachua IAS., Secretary, MOHUA, Government of India**. The training presents a comprehensive overview to the framework for modern water management moving away from a linear "Take-make-waste" approach to a circular system where "used water" is treated as a equally important resources. It explains how cities can recover water, energy, nutrients, and materials from wastewater while building more resilient, inclusive, and sustainable services. The first phase of training is undergone by MURALI KOCHUKRISHNAN (Environment Expert cum Hydrogeologist) and RAHUL. N (Urban water and Infrastructure Expert) from 8th to 9th at India Habitat Centre, New Delhi. The training is structured around technical design, governance, constructability, treatment technologies, desalination, flood risk, and reuse pathways and also on the recharging of the reuse to Groundwater to enhance its regime. The training exemplifies various example from Singapore and Australia also places special emphasis on India's water challenges and the potential for adapting Singapore's water strategy Australia's aquifer recharge strategy to Indian urban contexts.



Purpose of the Training:

The main purpose of the training is to build a systems-level understanding of water and wastewater management, with practical focus on circularity, reuse, recharge and climate adaptation. It aims to show that water infrastructure should not be designed only for disposal, but for resource recovery, operational efficiency, and long-term resilience. The training also trains participants to think beyond isolated treatment plants and instead consider governance, planning, construction, operation, and public participation followed by resource recovery in user water treatment, integrating nutrients, Energy and technology by both conventional and advance treatments, various advanced design management, journey through conveyance excellence, Sea water reverse osmosis (SWRO), recycled water and its utilization for recharging aquifers by following all stature norms etc.. by leveraging mostly Singapore's Experience and Australian experiences as part of one integrated water management system with a total say of **"ONE WATER". Concepts**. The training / workshop is attended by Engineers, Planners, Policymakers, and urban infrastructure professionals from all over the Country to be a core team for **futuristic water management experts/specialists**

Core Technical Themes:

A central theme is used with water circularity, where wastewater becomes a source of treated water, biogas, nutrients such as nitrogen and phosphorus, and other recoverable materials. The workshop/ training elements describes design elements such as pollution prevention, multiple cycles of reuse, circular material use, modular infrastructure, used water for recharging aquifers and decentralized management. It also explains that advanced treatment technologies like membrane bioreactors, reverse osmosis, advanced oxidation, and electrochemical nutrient recovery can support near-zero discharge systems. These approaches are presented as a way to reduce environmental impact while creating economic value from waste water to be notified as "USED WATER"

Another major theme is wastewater treatment plant planning and design. This presentation outlines how to estimate average daily flow, peak flow, contaminant loads, and site requirements before selecting treatment trains. It covers preliminary, primary, secondary, tertiary, and advanced treatment stages, along with reuse quality standards for discharge, irrigation, industrial cooling, groundwater recharge, and potable reuse. Modern tools such as CAD, BIM, GIS, and simulation software are highlighted as essential for reducing errors and improving performance.

Conveyance, Construction, and Design Management:

The training gives special attention to constructability and conveyance excellence. Constructability is defined as planning and designing infrastructure so that it can actually be built efficiently, safely, and with fewer errors. The report stresses early contractor involvement, pre-construction risk identification, sequencing, modular construction, and quality control as essential practices. For pipelines, canals, and pump systems, the training highlights access, material selection, maintenance space, and hydraulic optimization.

Design management is another strong focus, especially through Singapore's DBOT and systems-engineering approaches. The document explains how long-term planning, test-bedding, PPP participation, and smart operational monitoring help manage complex water megaprojects. It recommends that Indian cities adopt similar principles for treatment plants, underground facilities, and reuse infrastructure. This section is valuable because it connects technical design with delivery strategy, not just engineering theory.

Governance and Singapore Lessons:

The training strongly emphasizes Singapore as a global model for integrated water management. Singapore's success is linked to treating water as a national strategic priority, maintaining a unified authority, and using the "Four National Taps" strategy: local catchment, imported water, NEWater, and desalination. The document also notes that Singapore's PUB manages the full water cycle in a coordinated way, enabling leakage reduction, high reuse rates, and long-term planning. The ABC Waters programme is presented as a successful example of combining engineering with recreation, ecology, and flood control.



For India, the document argues that similar progress is possible through unified city-level water authorities, stronger reuse systems, rain water harvesting, decentralized treatment, and public participation. It highlights that India faces water scarcity, pollution, groundwater depletion, fragmented governance, and climate stress. At the same time, it suggests that Indian cities can adapt Singapore-style approaches by co-locating infrastructure, converting polluted waterways into blue-green corridors, and using output-based delivery models such as DBOOT. Kerala state can specifically be chosen to implement these ideas and apply towards rainwater harvesting, backwater restoration, and other community-scale and community involved treatment.

Australian Lessons:

The sustainable usage of recycled water for aquifer recharge through managed injection application at **Beenup, Australia**, by following all safety and stringent protocols is an "Eye Opener" of how a Used water can be sustainably managed for Aquifer replishment and enhancing the groundwater regime.

Desalination, Flooding, and Resilience:

The SWRO desalination section explains how seawater reverse osmosis works, including intake, pretreatment, high-pressure pumping, membrane separation, energy recovery, post-treatment, and brine disposal. It identifies SWRO as a low-energy and scalable option for coastal cities, with the Nemmeli plant in Chennai used as an example of successful implementation in India. The document also compares SWRO with thermal desalination and brackish water RO, showing why **SWRO is often the preferred method for seawater**.

Climate resilience is addressed through urban flood management and coastal protection. The report describes how intense rainfall, storm surges, sea-level rise, and drainage encroachment increase flood risk in cities such as Cork, Shanghai, and Dhaka. It recommends a mix of structural, semi-structural, and non-structural responses, including green infrastructure, flood zoning, early warning systems, and integrated flood modelling. The broader message is that water systems must be designed for climate variability, not just average conditions.

Biosolids and Reuse Standards:

The biosolids section covers the full life cycle of sludge management, including production forecasting, stabilization, thickening, dewatering, storage, transport, and beneficial reuse. It emphasizes that biosolids should be treated as a resource, provided safety, odor control, environmental protection, and regulatory compliance are built into the design. The document also compares international and Indian reuse frameworks, showing that India's reuse categories align closely with global practice but still face enforcement and institutional gaps. This makes the document especially useful for training professionals who need both technical and policy awareness.

Overall Learning Value:



Group Photograph of the Trainers and Participants

Overall, the first phase of training/ workshop undergone offers a strong interdisciplinary view of water management, combining engineering, sustainability, governance, and climate adaptation. Its biggest strength is that, it connects theory to practice through case studies from Singapore, Perth, Jurong, Shanghai, and other cities of Indian urban contexts. The first phase of training clearly makes a case that future water systems must be circular, resilient, and managed as strategic public assets. This workshop/ training forms a rich foundation for understanding how urban water systems especially Used water which can be evolved toward sustainability and resource recovery.

Conclusion: The first phase of training/ workshop presentations provides a strong, practical roadmap for transforming water management from a linear disposal model into a circular, resource-recovery-based system that is more resilient, sustainable, and economically viable. It brings together wastewater treatment design, constructability, desalination, conveyance, flood resilience, and governance lessons from Singapore and Australia case studies to India, showing that long-term success depends not only on technology but also on integrated planning, institutional coordination, public participation, and climate-aware infrastructure designs. The first phase of training clearly indicates that cities can significantly improve water security and environmental performance by treating used water as a resource, adopting advanced treatment and reuse systems, strengthening governance, and designing infrastructure that is both climate-resilient and future-ready. The further phases of training notified by MOHUA may strengthen the knowledge resource base of the Various Participants from India to exemplify best model projects in India.



AMRUT 2.0 – Report on Micro Water supply Scheme getting implemented at Kothamangalam



MURALI KOCHUKRISHNAN
Environmental Expert cum Hydrogeologist,
State Mission Management Unit, AMRUT



SIJU KUMAR
Urban Infrastructure and water Expert,
CMMU, Kochi Corporation

Introduction

Kothamangalam Municipality, formed in **1978** and located in the Eastern part of **Ernakulam District, Kerala**, serves as the headquarters of the taluk. Spread over **40.04 sq. km** with **31 electoral wards**, the town has a population of **38,837** (Census 2011) and is strategically positioned on **NH-49** (Ernakulam–Madurai–Rameswaram) in the foothills of the Western Ghats. Known as a trading hub for **spices and forest products**, Kothamangalam experiences a **tropical climate** with heavy monsoon rainfall (June–September) and temperatures ranging from **20–35°C**.

Despite water supply schemes implemented by the **Kerala Water Authority (KWA)** and the Municipality (including **11 existing drinking water schemes**), several wards continue to face **acute drinking water scarcity** across all seasons. These areas remain **uncovered or under-covered** due to inadequate pipeline coverage, insufficient pressure, or lack of available head.

To address this critical gap, **Kothamangalam Municipality has been selected under AMRUT 2.0** (Atal Mission for Rejuvenation and Urban Transformation) for implementing **Micro Drinking Water Projects in Urban Areas**. **Eight micro-projects** have been approved, spanning **10 wards**, to provide decentralized, reliable, and safe drinking water to the most affected pockets.

Project Objectives

- Provide **24×7 drinking water supply** to uncovered/under-covered areas
- Ensure **adequate pressure and quantity** through decentralized micro-systems
- Design for **projected population up to 2051**
- Minimize **Non-Revenue Water (NRW)** through efficient network design
- Ensure **water quality compliance** with BIS IS 10500:2012 standards
- Promote **community ownership** and sustainable operation

Why MWSS for Kothamangalam?

Kothamangalam Municipality faces acute drinking water scarcity in specific pockets despite Kerala Water Authority (KWA) schemes .

- **Problem:** KWA pipelines do not reach certain areas, or water arrives with insufficient quantity/pressure due to terrain (rocky, foothills of Western Ghats) .
- Solution: AMRUT 2.0 approved 8 micro-projects across 10 wards to cover uncovered/under-covered sectors.
- **Climate Context:** Tropical climate, heavy monsoon (June–September), dry rest of year; systems must handle seasonal variability.

Approved Micro-Projects (8 Projects Across 10 Wards)

Sl. No.	Ward(s)	Project Name
1	Ward 12	Valiyapara Drinking Water Project
2	Ward 22	Karakkunnam Drinking Water Project
3	Ward 27	Vilayal Drinking Water Project
4	Ward 06	Ayyappanmudy Drinking Water Project
5	Ward 25	South Venduvazhy Drinking Water Project
6	Ward 3 & 4	Karingazha Drinking Water Project
7	Ward 06	Kumbalathumury Drinking Water Project
8	Ward 23	Puthuppady Drinking Water Project

Concept, Architecture, and Rationale:

What is a Micro Water Supply System (MWSS)?

A Micro Water Supply System (MWSS) is a decentralized, community-managed network designed to extract, treat, and distribute safe drinking water to small wards, or habitations. Unlike large-scale centralized municipal pipelines, MWSS relies on local water sources (groundwater open wells, springs, perineal ponds or harvested rainwater) and simple infrastructure, avoiding high transmission costs.

Key Advantages:

Attribute	Centralized System	Micro Water Supply System (MWSS)
Scope	City-wide, long-distance	Ward-level, habitat-specific
Source	rivers/reservoirs	High yielding open wells / perennial streams and ponds etc.
Cost	High capital & transmission	Low capital, localized
Management	Top-down (Utility)	Community-led (Water Committee)
Reliability	Vulnerable to main breaks	Resilient, modular

Core Architecture of an MWSS:

The workable micro-scheme follows a standardized structure:

1. Source Extraction

- **Groundwater:** Vertical submersible pumps in open wells (most common in Kothamangalam).
- **Surface Water:** Mini-intake from perineal streams/ rivers
- **Augmentation:** Tapping existing schemes where feasible.

2. Pumping & Power

- Pumps: Vertical submersible pumps selected based on head and discharge requirements.
- Power: Solar-powered pumps will also be increasingly preferred for reliability; grid-tied or micro-hydro as alternatives.

3. Treatment & Quality Control

- **Filtration**: Pressure filters (bio-sand or ultrafiltration) to remove suspended solids.
- **Disinfection:** Continuous chlorination (gravity-fed dosers) or UV filtration.
- **Specific Media:** Iron/ fluoride removal filters if regional contaminants exist.

4. Storage

- **Elevated Service Reservoirs (ESR):** 5,000–10,000 L tanks utilizing gravity for network pressure (preferred for hilly terrain).
- **Ground Sumps:** Used where elevation permits pumping directly to distribution.
- ***Kothamangalam Context:*** 5 new overhead reservoirs proposed; 2 ground-level; 1 existing reservoir reused.

5. Distribution Network

- **Pipes:** PVC or Galvanized Iron (GI) depending on terrain (GI preferred for rocky/ exposed areas).
- **Configuration:**
  - **Gridiron :** Interconnected pipes preventing dead-ends (high quality, higher cost).
  - **Tree (Branch) :** Single arterial main with perpendicular branches (cost-effective, requires flushing) .
- **Delivery:** Household taps and public standposts

Methodology

Site Assessment & Source Identification

- **Ground Water Department has been** entrusted with yield assessment of the source **feasibility and water quality are tested at NABL accredited labs**
- Sources identified:
  - **Intake wells** with pumping stations (7 locations)
  - **Existing municipal pond** (1 location – Ward 12: Valiyapara)
- Water quality testing for **physical, chemical, and bacteriological parameters are carried out as statutory requirements**

Design Approach:

A. Population Projection

- Design year: **2051** (40-year horizon)
- Method: **Geometric increase / Incremental increase** as per **CPHEEO manual**
- Per capita demand: **135–150 LPCD** (urban standard)

EPANET Design Workflow for Micro Schemes

Why EPANET?

EPANET (Environmental Protection Agency Network Evaluation Tool) is the global standard for modeling drinking-water distribution networks. It simulates pipes, junctions, pumps, tanks, and pressure/ flow behaviour over extended periods .

Perfect for Kothamangalam because it models:

- ***Extended-period operation (24-hour cycles)***
- ***Pump controls & schedules***
- ***Tank water levels***
- ***Pressure at every node (critical for hilly terrain)***
- Base Demand Calculation:

Total Daily Demand=N×q.

Where:

- N = Projected design population
- q = Per capita demand (LPCD, typically 70–135 L/capita/day for urban India)

EPANET Modelling Guidance for Small Schemes:

- Simplify: Use one source + one service reservoir if possible
- Avoid Over-Looping: Unless road geometry supports it (cost-effective tree system often sufficient)
- Standardize: Keep pipe sizes standard and practical for maintenance
- Prioritize: Check pressures at farthest/highest nodes first

Recommended Pipe Sizes for Micro Schemes:

- **Main Lines:** 2–4 inch (50–100 mm)
- **Flow Velocity:** 2–4 ft/s (0.6–1.2 m/s) to minimize friction
- **Pressure at Household:** 20–50 PSI (14–35 m head)

The following are the Validation Checklist taken in to consideration:

- Checking pressures at farthest and highest nodes first (critical points)
- Test peak-hour demand (morning/evening)
- Test minimum-demand (mid-night) cases
- Check for dead ends (stagnation risk)

Monitoring & Evaluation Framework:

Monitoring Responsibilities:

Entity	Role
City Mission Management Unit, Ernakulam	Overall monitoring under AMRUT 2.0
Water Users Committee	Day-to-day operations, routine testing, tariff collection
Local Technicians	Pipe maintenance, chlorine residual testing, minor repairs
Municipality/AMRUT CMMU	Annual inspection, quarterly water quality analysis coordination
NABL Labs	Monthly/Quaterly full-panel water quality testing.

Performance Indicators:

Indicator	Target	Monitoring Frequency
Coverage %	100% in 10 target wards	Post-commissioning on time-to-time basis
Water Supply	Adequate supply in the morning and Evening Hours	Ongoing
Minimum Pres-	≥7 m at all taps	Quarterly
Water Quality	BIS-compliant	Monthly
NRW	≤20%	Annual
Tariff Collection	Sustainable maintenance fund	Monthly

Defined Emergency Response Protocol:

Scenario	Response Action
Pipe burst	Immediate isolation; repair within 24 hours
Pump failure	Switch to standby pump; repair within 48 hours
Water quality breach	Immediate chlorination; source investigation
Reservoir leakage	Emergency repair; temporary water

Joint monitoring and Evaluation Report:

The experts from SMMU, Mr. Murali Kochukrishnan (Environmental Expert cum Hydrogeologist), Mr.Sijo VS (Municipal Finance Expert), & Mr. Rahul N (Urban Infrastructure cum Water Expert) along with Mr. Siju kumar of CMMU AMRUT & ULB Engineers and over seers have visited all the 8 locations as part of midterm monitoring and evaluation criteria. Initially, The experts met Chairperson Smt Bhanumati Raju, Vice chairperson -Sri. Prince Varkey and other officials. The discussion lasted for about one hour and mainly focused on micro water schemes during 7/5/2026.

Day 2, 08.05.2026

The inspection started at 9.30 AM.

The first site visited was **Ayyappan Mudi Drinking water Project**. **Project Cost -1.35 Cr. Exp-0.54 Cr. The team** visited the source & pump house. The name of the source is Puthukuzhi thodu originates from Nnadukani hills. The existing pump house is being utilized for the scheme. A new 20 HP pump has already been installed and will also be used for the new scheme. A standby pump of the same capacity will be installed under this scheme. The proposed pumping head is 93 m, and the discharge is 4.88 litres per second (lps).

The reservoir is located about 1,200 m away from the source on a rocky hill with a height of more than 60 m. The proposed reservoir has been constructed at the top of the rocky hillock, and the construction has been completed with a storage capacity of **70,000 litres**. The laying of the pumping main using 80 mm GI pipes has been completed. The distribution network, using GI/PVC pipes ranging from 50 mm to 100 mm in diameter, has also been completed. The total number of proposed house connections is 169.

By pumping twice a day, the scheme can achieve approximately **135 LPCD (litres per capita per day) for each stakeholder.**



Source of the scheme Pump house







Climb Towards Reservoir on the Hillock and Reservoir position.

2. Kumbalathumuri Drinking Water Scheme

Project Cost -**0.25 Cr. Exp-0.075 Cr**

The project has been 100% completed and pumping has commenced. An existing well was developed as the water source, having a diameter of 4 m and a depth of 6 m. A yield test was conducted by the Ground Water Department and water quality testing is also carried out. A new pump house was constructed above the well, and two **7.5 HP pumps were installed. The pumping head is 66 m, and the discharge rate is 4–7 litres per second (lps).** The OHSR is located 560 m away from the pump house. The OHSR consists of a 10,000-litre polyethylene tank. The scheme includes a 560 m long pumping main using 63 mm PVC pipes and a 1,200 m long distribution network using 63 mm PVC pipes.

The 10,000-litre tank takes approximately 40 minutes to fill. With one pumping cycle, the scheme can supply about 130–134 LPCD (litres per capita per day). At present, house connections have been provided to 22 households out of the proposed 27 beneficiaries. The remaining 5 households have left the area due to other reasons.

Operating mechanism: - The households formed a committee, with the ward member serving as the administrator of the committee. The committee elected a secretary and a cashier. A bank account has been opened in the Co-operative Bank in the name of the committee. The committee members will collect contributions from the households based on the tariff decided according to the expenses incurred during the first month.



Pumphouse - Kumbalathumuri



10000 litre Tank



Household Connection

3. Karingazha Drinking Water Scheme.

Project Cost -1.82 Cr. Exp-0.29 Cr

This is one of the largest projects which covers two adjacent wards. This project serves 270 connections across these wards. The total project progress is 50 %. The pump house construction has been completed on the bank of the Kothamangalam River. The pump house is constructed over a well having a diameter of 6 m and a depth of 8 m. Installation of the pump is pending. The proposed pump capacity is 7.5 HP with a head of 52 m; however, during procurement, a higher-capacity pump may be selected depending on market availability.

The experts inspected the OHSR site located approximately 1,200 m away from the source. The three-level OHSR construction has been completed with a storage capacity of 60,000 litres. The originally proposed capacity was 70,000 litres, but based on the column design, the vetting authority recommended reducing the tank capacity. With three pumping cycles, the system is expected to achieve a supply of 135 litres per capita per day (LPCD). The pumping main lines have already been supplied. Procurement of the distribution lines and filters is still pending.



Experts visit to Well &Pump house and OHSR

4. Valiyapara Drinking Water Project.

Project Cost -1.54 Cr.

Only well digging was completed. The project proposed 257 connections, new intake well & pump house and 70000 litre OHSR. Two nos of 9 HP pumps with 65m head and 7.42 lps.



New dug well digging in process



Well development in progress

5. Puthuppadi Drinking Water Project

Project Cost -1.03 Cr. Exp-0.11 Cr

There is an existing well and pumphouse for the projects along the puthuppadi river which shall be strengthened. Additional 2 pumps with capacity of 5 hp, 55m head & 5 lps flow.

However, during procurement, a higher-capacity pump may be selected depending on market availability. The experts inspected the OHSR site located approximately 425 m away from the source. The six-level OHSR construction is in progress with a storage capacity of 75000 litres. With two pumping cycles, the system is expected to achieve a supply of 135 litres per capita per day (LPCD). Pipe laying also has good progress. Pipe laid - 110mm PVC -1100/1210, 93mm PVC - 645/ 700, 63mm PVC -500/2035

The total number of proposed house connections is 174.



OHSR under Construction



Pump house



Puthuppadi River Source

6. South Venduvazhi Drinking Water Project

Project Cost -1.5 Cr.

Pump house work is already completed near the source. Source is a perineal pond which is adjacent to the narrow stream providing the necessary recharge and ensuring water availability in the pond. The proposed pumps two numbers with 13.5 hp, 93m head & 7.81 lps yield. However, during procurement, a higher-capacity pump may be selected depending on market availability. The OHSR is 1700m away from the pond, which is connecting with 125mm GI pumping main with pump house. The Capacity of the OHSR is 75000 litres. 2 level of the OHSR out of 3 has been completed.

The total number of proposed house connections is 269. With two pumping cycles, the system is expected to achieve a supply of 135 litres per capita per day (LPCD).

Pipe laid -110mmPVC -1030, 100mm GI - 180, 90mmPVC -650m, 80mm GI -30, 63mm PVC - 3100, 50mm GI - 450, 127mm PVC -1200 m (Overall 70% of the pipe works completed)



On going Pipe line works



Pump house construction work in progress



OHSR work in progress

7. Karakkunnam Drinking Water Project

Project Cost-0.55 Cr. Expenditure – 0.48 7 Cr.

Karakkunnam is the first completed work in this scheme. The project completed in February 2025. In this scheme, pump house & OHSR were the existing facility. The existing pump is 5 hp & OHSR is 25000 litres capacity. Under this scheme, Additional 2 pumps with capacity of 7.5 HP with 50 m head & 3-4 lps, a sand filter & chlorination and pipe line for 182 households are provided. In the old system has 80 households are there. Additional 182 beneficiaries added under AMRUT2.0. Total 262 beneficiaries are there right now. Pipe laid- Pumping main-90 mm PVC -130m. 90MM PVC/80MM GI-1975, 63MM PVC/50MM GI- 1600

Operating mechanism: - The households formed a committee, with the ward member serving as the administrator of the committee. The committee elected a secretary and a cashier. A bank account has been opened in the Co-operative Bank in the name of the committee. The committee members are collecting contributions from the households based on the tariff decided according to the expenses for salary of operator, Electricity Charge, Average maintenance cost etc. For this project Rs 200 / household is fixed per month.



Completed Pipeline works



Pumping Main



House connection

8. Vilayal Drinking Water Scheme

Project Cost -0.77 Cr.

The tender of this delayed. 6 times tendered. For the sixth tender, got the bidder with tender excess 9.4%. Further delayed for getting Revised AS. Revised AS obtained on 10.11.2025.

The proposed components are Digging well, Pump House, Pipeline works, OHSR and distribution. The pump parameters are 4 HP, 3.52 lps with 53 m head (2 pumps) & filter unit. OHSR capacity is 50000 litres. Pumping main 80mm GI -350m, Distribution - 63MM PVC/50MM GI-5900

At present well digging work is about to be completed near the stream. Awaiting yield test by GWD.



Vilayal well—Development in progress



Proposed site OHSR

The monitoring and evaluation work has got completed at 3.00pm.

Conclusion:

Micro Water Supply Systems represent a paradigm shift from centralized to decentralized water supply, from top-down utility management to community ownership, and from one-size-fits-all to terrain-specific solutions. For Kothamangalam Municipality, MWSS is not just an option. it is the optimal solution for achieving universal tap coverage in its challenging rocky, hilly terrain while **ensuring sustainable, community-managed water security for current and future generations.**

"Water sustains all living existence, and streams are the natural pathways that deliver this life-giving resource to communities, ecosystems, and the Earth itself".....

Report on The National Level Convocation for "URTP (Urban Renaissance Tech Program for Urban Managers) at Vigyan Bhavan, New Delhi on 13/06/2026 under the aegis of 50th year Celebration of NIUA

Murali Kochukrishnan, AMRUT, SMMU

The **Urban Renaissance Tech Program (URTP)** for Urban Managers is a national capacity-building initiative under the **Ministry of Housing and Urban Affairs (MoHUA)**, India, designed with modern, technology-driven approaches to urban planning and development. It is implemented through the **Centre of Excellence in Urban Planning and Design (CoE-UPD)**, established at institutions like **SPA Delhi, NIT Calicut, CEPT University, and IIT Kharagpur.** The program aims to bridge the gap between traditional urban management and emerging challenges such as climate resilience, AI integration, smart infrastructure, and sustainable mobility.

Thematic Areas of Training Provided:

URTP covers interdisciplinary thematic areas aligned with India's urban transformation goals. The key training themes include:

Thematic Area	Key Focus Areas
Urban Planning & Design	Master Planning, Land Use Planning, Planning Legislation, Development Management in Urban Planning
Transportation & Mobility	Transportation Planning, Transit-Oriented Development (TOD), Pedestrian-Friendly Urban Areas, Healthy Streets
Digital & AI Tools	GIS and Digital Planning Tools, AI-Informed Disaster Management, Smart Cities & Digital Urbanism
Climate Resilience & Sustainability	Climate Resilience in Urban Planning, Urban Climate Adaptation, Green Infrastructure, Nature-based Solutions
Disaster Management	AI-Informed Disaster Management, Disaster Risk Reduction
Water & Sanitation	Water Supply Systems, Sewer & Storm Water Management, STP Management, Indian Knowledge Systems of Water
Governance & Finance	Municipal Contract Management, Financing Cities, PPP, Municipal Finance
Special Contexts	Resilient Urbanisation in Hill Towns, Public Spaces & Community Development

CoE-UPD's Role:

The **Centre of Excellence in Urban Planning and Design (CoE-UPD)** serves as the academic and technical backbone of URTP. It curates the course content, coordinate with premier institutions, and ensure alignment with national urban policies like AMRUT 2.0 and Smart Cities Mission. It is a comprehensive training initiative equipping urban managers with skills in planning legislation, digital tools, climate resilience, disaster management, water sanitation, and urban finance for critical work on building resilient, smart, and sustainable Indian cities.

Delegates Convocation at Vigyan Bhavan New Delhi on 13/06/2026:

A national level convocation has been held along with the Golden Jubilee celebration of NIUA on 13th of June 2026 at Vigyan Bhavan, New Delhi, under the aegis of National Institute of Urban Affairs 50Th year Golden Jubilee Celebrations. The Celebration and certificate distribution has been Headed by the chief Guest, Shri. **DR. P.K. Mishra IAS, Principal Secretary to the Hon'ble Prime Minister of India accompanied on the dais by Shri. Srinivas Katakithala IAS, Secretary, Mohua, Mrs. D.Thara IAS Additional Secretary Mohua, Shri. Satinder Pal Singh IAS- Vice President NIUA and Additional Secretary, MoHUA and Debolina Kundu, Director- NIUA.**

This prestigious convocation marked the culmination of the **Urban Renaissance Tech Program (URTP) for Urban Managers**, a national capacity-building initiative curated by the **Centre of Excellence in Urban Planning and Design (CoE-UPD)** under **MoHUA, Government of India**. Urban managers from across the country received certification for completing the Foundation Program and Specialization Courses in thematic areas including, Urban development planning, Municipal finance, climate resilience, AI-informed disaster management, sustainable mobility, and digital planning tools etc.

AMRUT SMMU experts who have successfully completed the course and have received the prestigious National Level certificates are viz. **Sathikumari.P** in the thematic area of **Development Management in Urban Planning from CoEUPD of IIT Kharagpur**, **Sijo V.S**. in the thematic area of : **Financing Cities and PPP from CoEUPD- CEPT Ahmedabad** and **Murali Kochukrishnan, Environment Expert cum Hydrogeologist Specialized in the thematic area of Disaster Risk Reduction and Management from CoEUPD -NIT Calicut.**



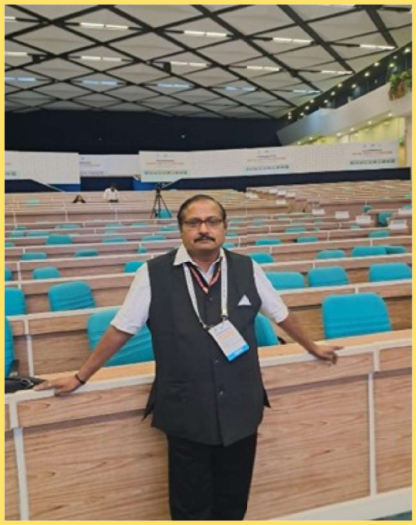
Ms. SathiKumari.P
Capacity Building Expert

Specialized thematic area: ***Development Management in Urban Planning with CoEUPD of IIT Kharagpur***



Sijo.V.S.
Municipal Finance Expert

Specialized thematic area: Financing Cities and PPP from CoEUPD- CEPT Ahmedabad



Murali Kochukrishnan
Environment Expert cum Hydrogeologist,
Specialized thematic area: Disaster Risk Reduction and Management from CoEUPD - NIT Calicut.



Participants receiving their due Thematic certificates from Shri.P.K. Mishra IAS., Principal Secretary to Hon'ble Prime Minister of India.

AMRUT Mission Director cum Urban Director of Government of Keralam **Shri Suraj Shaji** IAS., graced the URTP convocation on June 13, 2026, as a **State Delegate** from Keralam during the certificate distribution ceremony at Vigyan Bhawan, New Delhi. His participation underscored the government's commitment to capacity-building for urban managers across Kerala.



Participants receiving their due Thematic certificates from Shri.P.K. Mishra IAS., Principal Secretary to Hon'ble Prime Minister of India.

Conclusion:

The URTP's legacy promoted by MOHUA will continue to shape the future of Indian cities, empowering urban managers to create inclusive, climate-resilient, and technologically advanced urban ecosystems for generations to come.

Driving Digital Transformation in Urban Water Supply: SCADA & IoT related online Workshop for AMRUT and KWA officials



S.K. GAUTHAM
Expert Member
Technical Support Unit,
SMMU, AMRUT- Keralam.

As Indian cities transition towards continuous, safe, and consumer-centric water supply systems, digital monitoring and automation are emerging as the backbone of sustainable service delivery. Recognizing this critical requirement, an online workshop on SCADA and IoT-based monitoring systems for 24x7 Drink-from-Tap (DfT) projects was conducted on 29 May 2026.

Kerala's 24x7 DfT Ambition under AMRUT 2.0

Kerala is currently pursuing ten 24x7 Drink-from-Tap (DfT) projects under AMRUT 2.0. Unlike intermittent water supply systems, 24x7 DfT projects demand continuous and real-time oversight of flow, pressure, water quality, asset performance, and customer service levels. Digital solutions such as SCADA, telemetry, IoT sensors, GIS-linked platforms, and smart analytics are therefore no longer optional add-ons, but core operational components.

The workshop was designed to expose Kerala's urban water stakeholders to field-tested implementation models, technology architectures, and scalable digital solutions that can support reliable, transparent, and citizen-trusted 24x7 water supply systems.

Objective of the Workshop

The primary objective of the workshop was to build institutional capacity and shared understanding around:

- SCADA and telemetry systems for continuous water supply
- IoT-based monitoring of flow, pressure, and quality
- GIS-integrated asset and network management
- Smart utility platforms for operations, billing, and grievance redressal
- Implementation strategies and lessons from operational 24x7 projects

The sessions also aimed to help stakeholders evaluate open, interoperable, and future-ready digital architectures, while learning from Karnataka's on-ground experience in 24x7 water supply and DfT initiatives.

Participation and Knowledge Partners

The workshop was attended by over 90 engineers and officials from KWA, ULBs, AMRUT - SMMU and CMMUs. Experience-sharing inputs were provided by the Karnataka Urban Water Supply and Drainage Board (KUWS&DB), while technology presentations were made by leading solution providers, including:

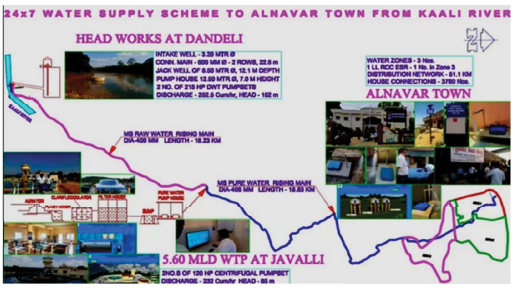
- Schneider Electric India Pvt. Ltd.
- Siemens Limited
- Vassar Labs
- FluxGen Sustainable Technologies Pvt. Ltd.

Learning from Karnataka: Field Experience in 24x7 Water Supply

The Karnataka Urban Water Supply and Drainage Board shared valuable implementation experience from 24x7 water supply and Drink-from-Tap projects, with specific reference to the **Alnawar project** and the ongoing **Kunigal project.**

Key technical and institutional insights highlighted included:

- DMA-based hydraulic design as the foundation of 24x7 systems
- Reservoir and storage optimization for pressure stability
- Online monitoring of flow, pressure, and water quality
- RTU / PLC-based control systems with redundancy
- Intermediate chlorination and quality assurance mechanisms
- GIS-based asset mapping for network visibility
- Public confidence-building measures, such as water quality display boards and lab-on-wheels



Slides from Alnawar Project presented by KUWS&DB

Successful 24x7 DfT implementation was highlighted as not merely a technology-driven initiative, but a comprehensive approach requiring strong hydraulic discipline, reliable and sustainable water sources, universal metering and billing, continuous system monitoring, and accountable operations and maintenance to ensure long-term efficiency and service reliability

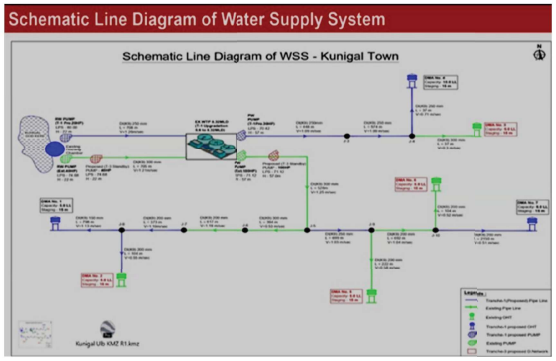
Technology Presentations featured Schneider Electric, Siemens, Vassar Labs, and FluxGen showcasing advanced digital water utility solutions including SCADA, IoT, AI analytics, and GIS-enabled platforms for monitoring, optimization, and management.

These solutions highlighted capabilities such as real-time data integration, leak detection, asset and network management, automation, and scalable smart water systems to improve efficiency, resilience, and decision-making in urban utilities.

Key Learnings for Kerala's 24x7 DfT & Water supply Programme

The workshop distilled several critical lessons for Kerala's upcoming Drink-from-Tap projects:

- SCADA and IoT systems must be treated as core operational infrastructure, not optional monitoring tools
- 100% metering and volumetric billing are essential for demand management, NRW reduction, and financial sustainability
- Source sustainability remains fundamental—digital systems cannot compensate for inadequate water availability
- Open communication protocols such as DNP3, MQTT, OPC, and Modbus are vital to avoid vendor lock-in and enable future integration
- Citizen-facing confidence measures, including public quality displays and responsive grievance systems, are critical for DfT acceptance
- Pilot-based and phased digital implementation is advisable before large-scale roll-out



Slides from Kunigal Project presented by KUWS&DB

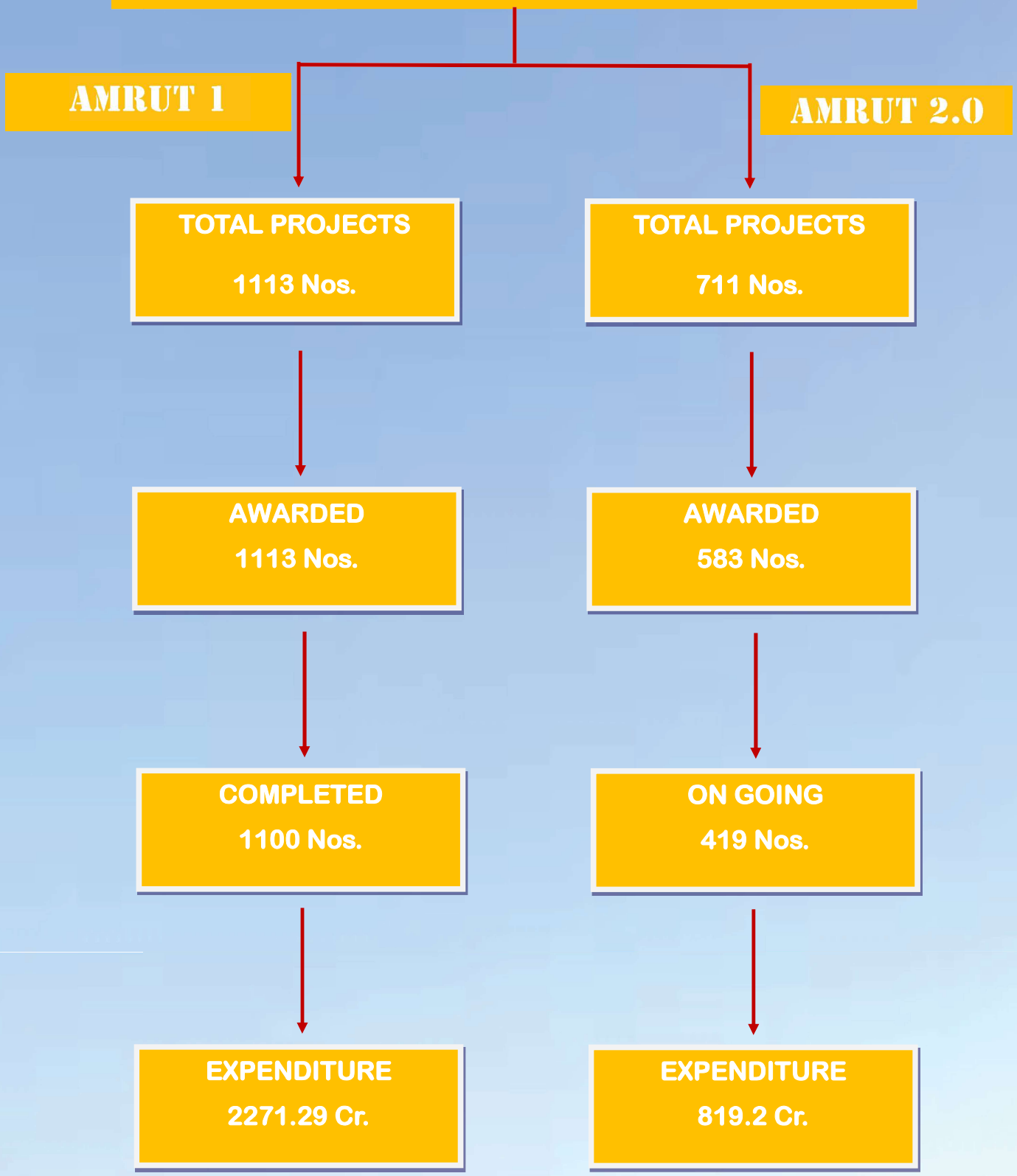
Outcome and Way Forward

The workshop proved to be a valuable capacity-building exercise for the Kerala Water Authority and AMRUT 2.0 stakeholders, offering practical exposure to both field-proven implementation models and mature technology solutions for 24x7 DfT systems. A key takeaway was the need for Kerala to adopt a standardized digital architecture framework across projects, while retaining flexibility for modular, city-specific deployment. The insights from Karnataka's experience and the diverse technology offerings presented during the workshop are expected to directly inform project design, procurement strategies, and implementation planning for Kerala's upcoming Drink-from-Tap initiatives.

As Kerala advances towards universal, continuous, and safe drinking water supply, the workshop reaffirmed that digital systems, institutional readiness, and citizen trust must evolve together to make 24x7 DfT a sustainable reality.

MISSION PROGRESS

(AS ON 30.06.2026)





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