IWA Water and Development Congress & Exhibition 2025

the international water association

Water, sanitation, and innovation –
pathways to progress and a resilient future

Preliminary Programme

BANGKOK
THAILAND

8-12 DECEMBER
2025

Organised by

IWA
the international water association

Co-organiser

AIT
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Water and Development Congress & Exhibition 2025

Preliminary Programme Overview

Monday 08 December

16:00-18:00	Plenary	OPENING CEREMONY									
18:00-20:00	Reception	WELCOME RECEPTION									

Tuesday 09 December

		A	B	C	D	E	F	G	H	I	J	K
09:00-09:45	Plenary	KEYNOTE PLENARY										
10:30-12:00	Session 1	T 2.01 Circular Economy in Wastewater: Innovations in Energy Recovery, Resource Reuse, and Sustainable Treatment	High-Level Summit	SW.01 Special Workshop	T 2.02 Sanitation and Public Health: Evidence-Based Approaches for Safe, Inclusive, and Standardized Solutions	W 3.01 Scaling Water-Sensitive Urban NbS for Equitable and Lasting Impact	W 5.01 WASH System Index Tool: An Opportunity to Strengthen WASH Service Delivery	W 1.01 Effecting Improved Intermittent Water Supply (IWS)	T 3.01 Resilient Infrastructure & Tackling Non-Revenue Water Loss	T 1.01 Sustainable Technologies for Safe Drinking Water Access	T 3.02 From Data to Drops: AI in Smart Water Management	T 2.03 Decarbonizing Wastewater and Sanitation: Emissions, Resilience, and Climate Action
13:30-15:00	Session 2	T 2.04 Advancing Resource Recovery in Wastewater and Faecal Sludge Management		SW.02 Special Workshop	T 2.05 Wastewater Surveillance and the Challenge of Antimicrobial Resistance (AMR)	W 3.02 A Catchment-level Approach for Climate Resilience in Water Systems	W 4.01 Scaling Up Peer Learning Partnerships in Water and Sanitation: A Capacity Development Approach	W 3.03 Understanding the NRW Water Balance	T 4.01 Equity & Access in Water Distribution	T 1.02 Cutting-Edge Innovations in Water Quality Monitoring and Risk Assessment	T 3.03 Connected Communities: Digital Platforms for Inclusive Engagement	T 2.06 Disaster-Ready Sanitation: Safeguarding Health and Infrastructure in Disaster prone areas
15:30-17:00	Session 3	T 2.07 Advancing Pathways to Circularity and Sustainability in Sludge Management		SW.03 Special Workshop	T 2.08 Emerging Contaminants and Microbial and Microplastic Risks in Wastewater: Monitoring, Mitigation, and Molecular Insights	W 2.01 Design Sprint: Building Future Water-Sensitive Cities	W 5.02 Empowerment of Women in Sanitation Enterprises: Innovations for Inclusive Governance for Reaching Unserved Communities	W 3.04 Designing A Sustainability Index Framework: A Hands-On Workshop for Enhancing Water Network Performance Evaluation	T 5.01 Financing & Economic Approaches	T 1.03 Advances in Water Quality and Management for Climate Resilient Cities	T 1.04 Data-Driven Insights for Water Treatment Efficiency	T 2.09 Policy and Economic Tools for Sustainable Waste and Water Management
17:15-18:00	Plenary	KEYNOTE PLENARY										

Wednesday 10 December

		A	B	C	D	E	F	G	H	I	J	K
09:00-09:45	Plenary	KEYNOTE PLENARY										
10.30 - 12.00	Session 1	Utility Leaders Forum	SW.04 Charting the Course to Water Security: The Asian Water Development Outlook 2025	Regulators Forum	T 2.10 Transforming Sanitation Through Decentralized and Non-Sewered Systems	SW.07 Special Workshop	W 4.02 The State of Water and Sanitation Utilities: Utility and System-level Perspectives for Transformation?	W 1.02 Ensuring Rural Drinking Water Safety In Developing Countries: Challenges And Opportunities	T 4.02 Urban Water Resilience & Infrastructure	T 1.05 Innovative Water Technologies	T 2.11 Enhancing Wastewater Treatment through Emerging Technologies and Artificial Intelligence	T 2.12 Cutting-Edge Nitrogen Removal Strategies in Wastewater Treatment
13.30 - 15.00	Session 2		SW.05 Trends in Climate Resilient Water and Sanitation Systems in Asia and the Pacific		T 2.13 Decentralized Sanitation Innovations and Scalable Solutions for Inclusive Urban-Rural Wastewater Management	SW.08 Special Workshop	W 2.02 Pre-Assessment for Carbon Finance: Evaluating Wastewater & Sanitation Project Eligibility for Carbon Finance	W 1.03 Strengthening The Impact of Water Safety Plan Training	T 4.03 Sustainable Water Management & Circular Economy	T 1.06 Novel Treatment Mechanisms	T 4.04 Data-Driven Water Management	T 2.14 Understanding Microbial Interactions for Enhanced Treatment Performance
15.30 - 17.00	Session 3		SW.06 Special Workshop		T 2.15 Decentralized and Inclusive Wastewater Solutions: Low-Energy Innovations for Resilient Sanitation Systems	SW.09 Special Workshop	W 4.03 Unlocking The Power of AI to Transform Operational Performance of Water Utilities	W 1.04 HRWM Workshop for Pathogen Risk Management for Drinking Water Consumption	T 5.02 Environmental Health & Circular Economy	T 1.07 New Approaches for the Removal of Contaminants	SW.10 Special Workshop	T 2.16 Harnessing Nature-Based Solutions for Resilient and Sustainable Wastewater Management
17.15 - 18.00	Plenary	KEYNOTE PLENARY										

Thursday 11 December

		A	B	C	D	E	F	G	H	I	J	K
09:00-09:45	Plenary	KEYNOTE PLENARY										
10.30 - 12.00	Session 1	T 3.04 Navigating Flood Hazards: Enhancing Urban Resilience	From Land to Sea Forum	Sanitation Forum – IUS	SW.11 Special Workshop on Systems Leadership	W 4.04 Strengthening Governance and Financial Systems for Long-Term Development Through Wastewater Reuse	Emerging Water Leaders Forum	W 5.03 Geo-Dashboards Innovatively Powering Water Service Regulation, Bolstering Investments and Coverage	W 3.05 Circular Economy as an Innovation Pathway for Resilient, Inclusive Water and Sanitation	T 1.08 Emerging Contaminants and Disinfection in Water Treatment Systems	T 2.17 Innovative Membrane and Adsorptive Technologies for Sustainable Wastewater Reuse and Resource Recovery	T 3.05 Rural Water Security through Small-Scale, Localized & Decentralized Solutions
13.30 - 15.00	Session 2	T 5.03 Climate Resilience & Adaptation			W 4.05 Practical Toolkits on Gender Mainstreaming in Water and Sanitation	W 2.03 Empowering Communities Through Resource-oriented Sanitation		W 3.06 Data Insights for Better Utility Management: Your Path to Improvement?	W 2.04 Transformative Water Practices in The Circular Economy	T 1.09 Managing the safety of water services in urban and rural setups	T 2.18 Emerging Solutions for Toxic Metal and Contaminant Removal	T 5.04 Technology & Innovation
15.30 - 17.00	Session 3	T 3.06 Climate-Resilient Water Security: Strategies for a Changing World	SW.12 Special Workshop		T 2.19 Waste-to-Farm: Enhancing Soil Health through Safe Reuse Practices	W 5.04 TBC		W 1.05 Innovative DX Solutions for Sustainable Water Supply	W 2.05 The Science You Need to Understand Emissions from Non-sewered Sanitation	W 4.06 Community-driven Participatory Monitoring for Safe, Equitable, Sustainable and Climate Resilient Services	T 2.20 Tailored Treatment Solutions for Industrial Wastewater	W 2.06 From Climate Vulnerability to Climate Resilience: Innovation and Systems Change in Urban Sanitation
17.15 - 18.00	Plenary	KEYNOTE PLENARY										
19:30-22:00	Dinner	GALA DINNER										

Friday 12 December

		A	B	C	D	E	F	G	H	I	J	K
09:00-09:45	Plenary	KEYNOTE PLENARY										
10.30 - 12.00	Session 1	T 4.05 Rural & Climate-Resilient Solutions	W 5.05 Come Together: The Challenges of an Alliance on Safe Sanitation	W 5.06 Water Security and Water Resilience Beyond the SDGs	T 5.05 Equitable WASH Solutions	SW.13 Digital Water in Emerging Economy：Needs, Opportunities, and Challenges.	W 2.07 Development of Global Database for Faecal Sludge Characteristics	W 5.07 Strengthen Institutionalization Of Marginalized Community Networks/CBOs In WASH Governance Systems	T 3.07 Regenerative Water Management: Sustainable & Circular Approaches	T 3.08 Navigating the Industrial Water Crisis: Technologies and Best Practices	W 4.07 Young Water Leaders' Global Roundtable	W 2.08 Bridging The Gap: Overcoming Implementation Barriers to Scale Sustainable Sanitation Solutions
13.30 - 15.00	Session 2	T 3.09 From Ideas to Impact: Innovating Policy and Governance	SW.14 Scaling Up Water & Sanitation? What about the critical Human Capital bottleneck?	W 5.08 Enhancing Water Resilience Through Nature-based Solutions: Policy, Implementation and Urban Benefits	T 5.06 Governance & Policy for WASH Systems	SW.15 Integrated water management for fast-developing cities in Asian countries	W 3. 07 Topic: TBC	W 1.06 Solving Water Pollution Through Youth-Led Community Based Water Solution Framework	T 3.10 Water Integrity: Advanced Solutions for Quality Preservation and Pollution Reduction	T 4.06 Industrial & Health Risk Mitigation	SW.16 IWA & Grundfos Youth Action for SDG6 Fellowship	T 1.10 Partnerships and Local Approaches
15.30 - 17.00	Plenary	CLOSING CEREMONY										

T denotes Technical Session
W denotes Workshop
SW denotes Special Workshop

Theme 1 - T 1.xx / W 1.xx	Ensure safe drinking water: innovative approaches for treatment and supply
Theme 2 - T 2.xx / W 2.xx	Advancing wastewater treatment and sanitation services: sustainable solutions for all
Theme 3 - T 3.xx / W 3.xx	Smart water management: integrated approaches for effective water management and planning
Theme 4 - T 4.xx / W 4.xx	Enhancing utility management and operations for sustainable growth
Theme 5 - T 5.xx / W 5.xx	Strengthening governance and financial systems for long-term development

Water and Development Congress & Exhibition 2025

Preliminary Technical Session Programme

Theme 1 - Ensure Safe Drinking Water: Innovative approaches for treatment and supply

T1.01: Sustainable Technologies for Safe Drinking Water Access

Tuesday 9 December, Session 1

In this session, water treatment options are presented for ensuring the safety of drinking water under different scenarios. Low cost technologies are presented and described to respond to the impact of climate change and vatiability in some examples. Other water treatment options emphasize the various ways of contaminant removal in compromised surface and ground water.

Predicting Effects Of Groundwater Elements In Arsenic Mobilization Using Machine Learning Algorithms: BDT, LR And RF, Asef Redwan, Bangladesh.

Sustainable Wastewater Treatment Focused On Water Reuse through Innovative Advanced Oxidation Processes, Marina Prisciandaro, Italy.

Rapid, Low-cost Removal Of Cr(VI) From California Groundwater Using Iron Electrocoagulation, Andrea Naranjo-Soledad, United States.

Low-cost Manufacturing And Characterization Of Ultrafiltration Membranes: Application Of The Phase Inversion Method, Paola Andrea Alvizuri Tintaya, Bolivia.

Electrochemical Disinfection As A Resilient Solution For Microbial Safety In Rural And Remote Drinking Water Supplies, Mingyue Hu, Australia.

Solutions In Traditional Knowledge: How Gravity Driven Water Filters Could Help Reduce Single-use Plastics In Sub-Saharan Africa, Guus Wiersma, Netherlands.

T1.02: Cutting-Edge Innovations in Water Quality Monitoring and Risk Assessment

Tuesday 9 December, Session 2

This session explores advanced methodologies for enhancing water quality monitoring and risk assessment across diverse contexts. Presentations focus on the integration of machine learning and real-time sensing technologies to predict and detect contaminants such as microplastics and emerging pollutants like PFAS. Case studies from Tanzania, Malaysia, and global research efforts demonstrate how data-driven tools and laboratory innovations are transforming water quality assurance and supporting evidence-based public health interventions.

Real-Time Detection Of Microplastics In Water Utilizing Electrical Sensing Zone Method Integrated With Machine Learning Techniques, Sameera Sandaruwan Yakdehi Kankanamge, Thailand.

Elevating Public Health Assurance Standards: Air Selangor's Laboratory Strategies On Per- & Polyfluoroalkyl Substances (PFAS), Humairah Yeoh Yee Voon, Malaysia.

Assessing Drinking Water Quality Of A Native American Tribe Through Genomics, Maria Jose Uribe Perez, United States.

Public Health Risks Of Refilled Drinking Water In Urban Indonesia, D. Daniel, Indonesia.

Closing The Data Inequity Gap With Context-appropriate Microbial Water Quality Testing, Caetano Dorea, Canada.

Online Bacteriological Monitoring And Early Warning Systems For Microbiological Contamination In Nairobi City Water & Sewerage Company Ltd (NCWSC) DistributionNetwork In Kenya, Francis Mwanza, Kenya.

T1.03: Advances in Water Quality and Managment for Climate Resilient Cities

Tuesday 9 December, Session 3

This session highlights innovative approaches and technological advancements in urban water quality improvement and sustainable water management. Case studies from diverse geographic contexts—including reservoir modelling, treatment optimization, and integrated strategies for arid regions and net-zero buildings—demonstrate how cities can enhance water security and build resilience to climate change. Emphasis is placed on data-driven solutions, interdisciplinary design, and scalable practices for climate-resilient urban infrastructure.

Optimizing Artificial Destratification Strategies For Oberon Reservoir: A Modelling Approach, Lalantha Senevirathna, Australia.
Mitigating Manganese-Induced Discoloration In Metro Manila's Tap Water: A Case Study Of La Mesa Water Treatment Plants 1&2, Guia Publico, Philippines.
Emergent Themes And Knowledge Gaps In River Water Temperature Research And Climate Change, Ali Jahanbakhshi, Singapore.
Innovative Water Management Strategies For Net-Zero Water Buildings: Integrating Efficiency And Climate Resilience, Josh Hua, United Kingdom.
Enhancing Water Security And Quality: Design And Implementation Of An Off-River Storage Facility In Ghana Water LTD.'s Konongo WTP, Mawunyo Kofiloto, Ghana.
Legionella Contamination In South African Water Systems: Socio-economic And Climatic Determinants, Atheesha Singh, South Africa.

T1.04: Data-Driven Insights for Water Treatment Efficiency

Tuesday 9 December, Session 3

This session presents innovative research and analytical approaches aimed at improving water treatment performance and understanding contamination risks. Topics include simulation of sludge dynamics under high turbidity conditions, application of smart metering to analyze consumption behavior, assessment of microbial risks influenced by abstraction methods, and pesticide risk evaluation in surface water sources. Drawing from case studies in the Philippines, Nepal, and Kenya, the session highlights how data-driven strategies can enhance operational decision-making and safeguard water quality in diverse settings.

Simulation Analysis Of Sludge Accumulation In La Mesa Water Treatment Plants 1 And 2 Under Prolonged High Turbidity, Guia Publico, Philippines.
Water Abstraction Method Shapes Microbial Communities And Pathogen Risks In Kenyan Sand Dam Aquifers, Reuben Duncan, United Kingdom.
Low-Cost Method For Comparing Turbidity Data To Guide Drinking Water Distribution System Interventions, Roman Tijsseling, United Kingdom.
Evaluation Framework For Smart Predictive Digital Twin For Water Supply Systems: A Case Study In Portugal, Mariana Alão, Portugal.
Smart Water Distribution System Management: Exploring Digital Twin Simulation Models, Bong Seog Jung, Korea, Republic of.
Smart Metering Technology For Determining Water Consumption Behaviour, A Case Study From Nepal, Jens Dyrberg Nielsen, Denmark

T1.05: Innovative Water Technologies

Wednesday 10 December, Session 1

This session highlights innovative, energy-efficient water solutions for climate-vulnerable and rural areas. It includes solar-powered desalination, atmospheric water harvesting, selective electrodialysis, and deionization for safe drinking water. Projects also feature modular treatment plants, rainwater systems for healthcare facilities, and smart sensors for pipeline monitoring advancing SDG 6 with sustainable, low-energy technologies.

Developing Innovative Atmospheric Water Harvesting And Solar Desalination Technologies For Water Production In Water-stressed Areas, Alexandros Stefanakis, Greece.

Performance Characterization Of A Multi-Stage Air Gap Membrane Distillation System With Direct Thermoelectric Integration, Jaber Asiri, Saudi Arabia.

Innovative And Energy-Efficient Flow-Electrode Capacitive Deionization For Heavy Metal Removal In Climate-Vulnerable Drinking Water Systems, Seungkwan Hong, Korea, Republic of.

Advancing SDG 6: Continuous Drinking Water Supply Via Solar-Powered, Low-Energy Battery Integrated Selective Electrodialysis for Rural Sri Lanka, Binghui Tian, China.

Solar-Powered Piped Water Supply For Communities: A Sustainable And Climate-Resilient Initiative In Rural Bangladesh, Mr. Md Yasin Arafat , Bangladesh.

Easy-Maintenance Assembled Drinking Water Plant, Chengzhi Hu, China.

T1.06: Novel Treatment Mechanisms

Wednesday 10 December, Session 2

This session presents innovative research on novel mechanisms for treating emerging and persistent contaminants in water systems. Together, these approaches highlight promising directions for safe and sustainable water treatment.

Magnetic Sludge Biochar Encapsulated In Sodium Alginate For Microplastic Removal: Synthesis, Characterization, And Adsorption Kinetics, Muhamad AliYuzir, Malaysia.

Effects Of Water Supply Plants With Ozone Biological Activated Carbon Process On The Physicochemical Properties Of Drinking Water Distribution Systems, Xin Song, China.

Deciphering The Virucidal Potential Of Hydroxyl Radicals In Ozonation: Mechanistic Insights And Water Safety Implications, Zhiting Liang, China.

Effective Use of Thermoelectric Modules in Water Distillation, Dia'Afaneh, Saudi Arabia.

Clean-in-Place Of Dense Membrane Systems Reduces Metabolic Activity Of Biofouling Layer: Implication For Dissolved Organic Carbon (DOC) Transmission, Zhao Li, Germany.

KMnO4--Fe(II) Pretreatment To Enhance Algae Removal By Aluminum Coagulation, Jing Qi, China.

T1.07: New Approaches for the Removal of Contaminants

Wednesday 10 December, Session 3

This session will cover experimental and innovative approaches for the detection and removal of various chemical contaminants.

Highly Sensitive Detection Of The Tetracycline Resistance Gene TetA In Water Supply Systems With An Autocatalytic Deoxyribonucleic Acid--Based Cascade Circuit, Yu Zhou, China.

Modification Of An Electrodisinfection System For Nitrate Removal From Groundwaters In Australian Regional And Remote Communities, Ni Made S Suliartini, Australia.

Effectiveness Of Orthophosphate Corrosion Inhibitor In Controlling Ni Release From Stainless Steel Plumbing Materials In Drinking Water, Ding Quan Ng, Chinese Taipei.
Optimization Of Diclofenac Sodium Removal By Adsorption Onto Powdered Activated Carbon From Coconut Endocarp, Juliana Delgado Tinôco, Brazil.
Physicochemical Transformations Of Assimilable Organic Carbon (AOC) Through Ozone Treatment, Eric Cowan, United Kingdom.
Direct Photolysis Of Ciprofloxacin And Levofloxacin Under UV-LED Irradiation: Influence Of Wavelength And Light Intensity, Zi Bin Tang, Chinese Taipei.

T1.08: Emerging Contaminants and Disinfection in Water Treatment Systems

Thursday 11 December, Session 1

This session explores current challenges and advancements in drinking water treatment, focusing on microbial contamination, emerging pollutants, and treatment resilience. Topics include antimicrobial membrane technologies using quaternary ammonium compounds, microplastics behavior during irrigation and disinfection, and the comparative effectiveness of treatment systems across water sources. Additional studies address Legionella detection in hotel systems, biological processes for treatment plant resilience, optimization of geosmin removal using activated carbon, and quality control in packaged water production. Together, these works highlight innovations and risks shaping safe water supply strategies.

Antimicrobial Polylactic Acid Membrane Grafted With Quaternary Ammonium Salt For Effective And Durable Water Disinfection, Kai Zhao, China.

Experimental Insights into PET and PTFE Microplastic Transport in Soils, Mohd Faraz Khan, India.

A Comparison Of Microbial Removal Efficacy Of Different Water Treatment Process Systems On Different Water Sources, Bei Zhao, China.
Detection Of Species In Hotel Water Systems Using Culture-based And Molecular Methods, Benya Nontaleerak, Thailand.

Enhancing Resiliency Of WTPs With Biological Treatment Of Drinking Water, Hayat Raza, Canada.

Optimizing Geosmin Removal In Drinking Water Treatment Using Powdered Activated Carbon, Dailin Currie, South Africa.

T1.09: Managing the safety of water services in urban and rural setups

Thursday 11 December, Session 2

In this session factors that can compromised the integrity nad safety of wash services in both riral and urban set ups are discussed. This includes the nature of material used in didtribution systems, contaminants that can impact on the safety of drinking water especially the biological quality that results in waterborne diseases in marginalized communities. The need for climate resistent water services infrastructure is also presented and emphasized for the protection of vulnerable communities. Presentations are across the globe and emphasize the importance of managing risks acros the value chains.

Unveiling The Corrosion Of Stainless Steel Pipe In Drinking Water Distribution System: Interdisciplinary Insights On Water Quality And Anti-Corrosion Design, Xinyu Pan, China.
Stainless Partially Corrugated Tube (SPCT): A Material For Sustainable And Leakage Resistant Connection To Water Mains, David Nicholas, Australia.
Inclusive Rural Water Supply Services In Maharashtra: Bridging Water Abundance And Accessibility, Upsana Yadav, India.
Association Of Stored Tap Water Contamination With Direct And Indirect Media In Peri-urban Lusaka, Wutyi Naing, Japan.

Locked Out Of Water: A Reflection On WASH Access In US Prisons, Kimberly Worsham, United States,

Conservation In Action: Assessing Water Quality In Untreated Surface Water Sources In Villagarzón, Putumayo, Colombia, Diana Calvo, United States

T1.10: Partnerships and Local Approaches

Friday 12 December, Session 2

Implementers and funders are identifying new models of collaboration to expand access and ensure the financial sustainability of both large and small water systems. This session highlights findings from both local case studies and global comparative studies.

Enabling Piped Water Supply Services At Scale In Developing Contexts: A Global Study Of Private Sector Participation, John Stone , India.
Strategies For The Successful Legal And Political Integration Of Community-based Drinking Water Providers In Contemporary Nation States, Katharina Lindt, Germany.
Climate Resilience And Socio-Economic Impact Of Water Supply In Marginalized Urban Communities: A Case Study Of Cumilla City Corporation, Bangladesh, Khan Muhammad Golam Rabbani, Bangladesh.

Revolving Funds For Social Connections In Ghana, Benjamin Wiredu, Ghana.

From Well To Home: Understanding Water Quality Changes In A Wayuu Indigenous Community, Diana Calvo, United States.
Building Resilience In Rural Healthcare: Innovative Strategies For Introducing Water Treatment Technologies In Underserved Communities, Christabel Kambala, Malawi.

Theme 2 - Advancing Wastewater Treatment and Sanitation Services: Sustainable solutions for all

T2.01: Circular Economy in Wastewater: Innovations in Energy Recovery, Resource Reuse, and Sustainable Treatment

Tuesday 9 December, Session 1

This session highlights transformative approaches in wastewater and sludge management that align with circular economy goals. Topics include microbial fuel cells and MECs for energy generation, CO_2-to-fuel photoelectrochemical systems, and enhanced biogas production using co-digestion and biochar. Presentations also explore the reuse of biosolids for agriculture, development of sustainable disposal regulations in India, and nutrient recovery for rice cultivation. Together, these innovations demonstrate how wastewater systems can evolve into multifunctional hubs for energy, water, and resource recovery, promoting sustainability across treatment infrastructures.

Enhancing Contaminant Removal And Chlorination Byproduct Control In Saline Sewage Treatment Through Integrating CO2-to-fuel Conversion In A Multifunctional Photoelectrochemical System, Dong Taoran, Hong Kong, China.

Sustainable Hydrogen Production In A Two-Chamber MEC: Effect Of Synthetic And Real Substrate Feeding On System Performance, Angela Marchetti, Italy.

From Waste To Grain: Boosting Protein-Rich Rice Production With Sludge-Derived Fertilizers, Jittrera Buates, Japan.

Energy Recovery Through Co-digestion Of Biosolids And Food Waste: A Microbial Perspective, Nirakar Pradhan, Hong Kong, China

All Waste Shouldn't Be Put To Waste! Circular Economy In Wastewater Treatment: Resource Recovery Through Biogas, Fertilizer, And Water Reuse, Morena Akurut, Uganda.

Developing Wastewater Bio-solids (Sludge) Management Strategies And New Disposal Regulations With Reuse To Achieve An Effective Circular Economy -- Need Of The Hour In India, Uday Kelkar, Japan.

T2.02: Sanitation and Public Health: Evidence-Based Approaches for Safe, Inclusive, and Standardized Solutions

Tuesday 9 December, Session 1

This session presents evidence-based research and field experiences focused on the performance, safety, and standardization of sanitation systems in both urban and rural settings. Drawing on case studies from Bangladesh, Fiji, Nepal, Indonesia and India, these presentations will examine the extent and health implications of greywater and fecal contamination, risks to shallow groundwater, and pathogen exposure in non-sewered sanitation systems.Through rigorous data and field case studies, this session aims to inform the development of inclusive, safe, and performance-driven sanitation strategies, with a focus on human and environmental health.

Greywater Contamination In Urban Bangladesh: Challenges And Pathways To Sustainable Management, Mostafizur Rahman, Thailand

Faecal Contamination In Latrine Front-ends In Rural Fiji And Nepal: Implications And Recommendations For Sanitation And Hygiene Interventions, Sabita Adhikari, Australia.

On-site Sanitation System And Faecal Contamination In Shallow Groundwater In Urban Indonesia: Assessing Influence Of Distance And Rainfall Variables, Gita Puri, Australia.

Advancing Urban Wastewater Management Standards By Recognizing Neglected Pathogenic Risks, Shu-Hong Gao, China.

Treating Fecal Sludge In The City - An Indian FSM Success Story, Sasikumar Eswaramurthy, India.

How Effective Is The Sanitation Intervention In Cox's Bazar Rohingya Camp?, Md Azizur Rahman, Bangladesh.

T2.03: Decarbonizing Wastewater and Sanitation: Emissions, Resilience, and Climate

Tuesday 9 December, Session 1

This session focuses on the critical role of wastewater and sanitation systems in climate mitigation, showcasing research and field applications aimed at measuring, evaluating, and reducing greenhouse gas (GHG) emissions across both sewered and non-sewered contexts. Presentations include empirical studies on methane emissions from decentralized sanitation systems, as well as advanced treatment processes. In addition to technical approaches, the session explores institutional strategies for climate resilience, including the integration of energy audits and solar infrastructure within WASH systems. By combining emissions quantification with system-wide mitigation and adaptation strategies, this session offers a comprehensive view of how wastewater and sanitation can be decarbonized while contributing to broader sustainability and climate resilience goals.

Measuring, Scaling, And Reporting Methane Emissions From Low-Cost Non-Sewered Sanitation To Advance Mitigation Strategies, Kelsey Shaw, Canada.

The Novel In-Situ Pathway For Carbon Reduction, Pollution Mitigation, And Efficiency Enhancement In High-Density Urban Wastewater Treatment: An Empirical Study On The AOA-MBBR Process, Ma Hanqing, China.

Evaluating Methane Emissions And Exploring Potential Methane Capturing Mechanisms Across The Sanitation Service Chain, Aasim Mansuri, India.

Greenhouse Gas Emission From Non-Sewered Sanitation-A Case Study In Faridpur City, Bangladesh, Sharmistha Debnath, Bangladesh.

Moving Towards Climate Resilient WASH Services Through Energy Audit And Solar Infrastructure, Arwa Bharmal, India.

Decarbonizing Wastewater Treatment And Sanitation Through Integration Of Sewered And Non-sewered Treatment Technologies, Anad Patel, United States

T2.04: Advancing Resource Recovery in Wastewater and Fecal Sludge Management

Tuesday 9 December, Session 2

This session explores innovative approaches to resource recovery within wastewater and fecal sludge management, emphasizing solutions that promote sustainability and circularity. It highlights emerging technologies and strategies for recovering valuable resources such as nutrients and energy, and reusing treated water and biosolids. Case studies demonstrate the practical application of electrochemical methods, material reuse, and microbial analysis, while also examining the development of decision-making tools like quality indices and circular economy frameworks. Policy integration and system-level planning are also discussed to support the scalable adoption of these solutions in diverse contexts, from urban centers to island nations.

Stabilization Of Carbonized Fecal Sludge In Brick Fabrication: Sustainable Approach, Md. Abul Hashem, Bangladesh.

Recovery Of Phosphorous From Anaerobic Digestate Using Electrochemical Struvite Precipitation, Kripa Singh, Canada.

Feasibility Study For The Reuse Of Treated Used Water: Case Of Rajkot, India, Vikash Mishra, India.

Assessment Of The Microbiome, Mobilome And Antimicrobial Residues In The Process Of Urine To Struvite Conversion, Adey Desta, Ethiopia.

Development Of A Faecal Sludge Quality Index (FSQI) For Sustainable Faecal Sludge Management And Resource Recovery: A Case Study From Rajasthan, India, Ajit Pratap Singh, India.

Faecal Sludge Management Strategy For Fiji -- A Circular Economy Systems Approach, Pierre Mukheibir, Australia.

T2.05: Wastewater Surveillance and the Challenge of Antimicrobial Resistance (AMR

Tuesday 9 December, Session 2

As antimicrobial resistance (AMR) continues to pose a global health threat, its presence and persistence in wastewater systems demand urgent attention. This session examines the role of wastewater surveillance in tracking AMR and viral pathogens, focusing on both detection and mitigation strategies. Topics include the occurrence and removal of antibiotic-resistant bacteria and genes in treatment systems across various regions, from Kashmir to Southeast Asia. The session also explores advanced disinfection techniques such as ozone treatment, and how campus and rural surveillance systems have been adapted for pathogens like SARS-CoV-2 and seasonal influenza. Institutional frameworks and practical considerations for implementing surveillance in diverse settings will also be discussed, supporting broader efforts in public health and environmental protection.

Occurrence Of Antibiotic-Resistant Bacteria In The Influent And Effluent Of Wastewater Treatment Plants In The Kashmir Region, Umer Gojiree, India.

Removal Of Antibiotic Resistance Genes From Wastewater Treatment Plant And Their Distribution In Asian Communities, Sadhana Shrestha, Japan.

Campus Source To Sink Wastewater Surveillance Of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), Miles Folkes, UK.

Phenotypic Antimicrobial Resistance Profile Of Escherichia Coli In The Water Environment And Sewage Of Hong Kong, Michael Cheng, Hong Kong, China.

"Wastewater Surveillance For Seasonal Influenza Epidemics: Strategies And Considerations For Small Public Health Units And Rural Regions", Banu Ormeci, Canada.

Effective Viral Inactivation By Ozone In Wastewater: Decoupling Matrix Effects And Mechanistic Insights, Xiaoyuan Zhang, China.

T2.06: Disaster-Ready Sanitation: Safeguarding Health and Infrastructure in Disaster prone areas

Tuesday 9 December, Session 2

This session emphasise on disaster-ready sanitation solutions that protect public health and critical infrastructure in disaster-prone and climate-vulnerable regions. Presentations will showcase resilient sanitation technologies, emergency response systems, and adaptive infrastructure designs tailored to withstand floods, and other extreme events. Case studies will highlight successful implementations in both urban and rural settings, emphasizing rapid deployment, low-cost construction, and community engagement. The session will also explore policy frameworks, risk assessments, and capacity-building strategies essential for preparedness and recovery. By promoting resilient and inclusive sanitation systems, the session aims to reduce health risks and strengthen community resilience in the face of disasters.

When The Shit Hits The Fan: Analysing Sanitation And Flood Risk In Kibera After The 2024 El Niño Flood, James Wallace, UK.

A Case Study On SOP Enhancement With Biosensor Technology, Sami Aljohani, Saudi Arabia.

Inclusive And Sustainable Sanitation Intervention: A Data-driven Decision-making Approach For Marginalized Urban Communities In Bangladesh, Dilruba Farzana, Bangladesh.

An Investigation Of Containment Safety And Risk Framework For On-site Sanitation Back-ends: A Rural Context, Nabeela Nasim, Australia.

Dramatic Increases In Chlorophenylacetonitriles Following Storm Events: Indole In Sewer Sediments Serve As An Overlooked Precursor, Tianyi Dong, China.

Mapping Vulnerability: A GIS-Driven Environmental Risk Assessment For Sanitation Planning At Household Level, Bussakorn Krittanusarn, Thailand.

T2.07: Advancing Pathways to Circularity and Sustainability in Sludge Management

Tuesday 9 December, Session 3

This technical session highlights cutting-edge research and practical innovations aimed at enhancing the efficiency, sustainability, and economic performance of sludge treatment and management. Presentations will explore a range of topics, including the development of high-value products such as bio-asphalt from fecal sludge, improved sludge pre-treatment strategies to optimize dewatering and reduce costs, and novel thermal processes like microwave treatment to boost sludge reuse potential.The session will also feature national-level strategies such as China's path toward carbon neutrality and India's evolving regulatory frameworks to promote sustainable sludge disposal and reuse.Special emphasis will be placed on the integration of these technologies into circular economy models, with relevance for both developed and developing contexts.

Microwave Treatment Of Sludge Using A New Pilot Set-up To Enhance Its Market Value For Reuse. Case Study: A Wastewater Treatment Plant In Mostar City, Bosnia And Herzegovina, Morena Akurut, Uganda.
Valorization Of Sludge: Enhancing Performance & Economics With Wastewater By-Product Pre-Treatment, Subham Meher, India.
Towards The Carbon Neutrality Of Sludge Treatment And Disposal In China: A Nationwide Analysis Based On Life Cycle Assessment And Scenario Discovery, Xue Zhou, China.
The Science Of Sludge Dewatering: Effect Of G-force On Dewatering Centrifuge Performance: G-Volume As A Key Metric For Centrifuge Scaling, Dinesh Gehani, Germany.
Production Of Performance Grade Bio-asphalt From Fecal Sludge Using Natural Clay Catalysts Through Hydrothermal Liquefaction, Md. Khalekuzzaman, Bangladesh.
Recycling Of Sewage Sludge Ash To Produce Artificial Coarse Aggregate For The Construction Industry, Tanvir Ahmed, Bangladesh.

T2.08: Emerging Contaminants and Microbial and Microplastic Risks in Wastewater: Monitoring, Mitigation, and Molecular Insights

Tuesday 9 December, Session 3

This session highlights the latest research on the fate, transformation, and health risks of emerging contaminants in wastewater systems. Presentations cover antibiotic resistance in plastispheres, microplastic contamination in sludge, and seasonal variations affecting environmental safety. Innovative monitoring tools such as nanoplate digital PCR and molecular-level EPS analysis are showcased alongside advanced treatment strategies using biochar, nanomaterials, and UV/PAA disinfection. The session also explores the impact of treatment processes like anaerobic digestion and constructed wetlands on microbial diversity and pollutant degradation. Together, these studies inform safer, smarter wastewater reuse and risk mitigation practices.

Analyzing Changes In Antibiotics And Microbial Diversity Within A Constructed Wetland Treating Livestock Wastewater, Yugyeong Oh, Korea, Republic of
Seasonal Variation Of Microplastics In Wastewater Treatment Plant Sludges And Implications For Agricultural Use, Banu Ormeci, Canada.
Tracking The Transformation Of EPS During The UV/PAA Disinfection Process: A Molecular-level Analysis, Lin Wang, China.
Enhancing Carbendazim Removal Efficiency With Co-pyrolyzed Biochar: A Comparative Analysis Of Waste-derived Adsorbents, Saheem Rasool, India.
Application Of Nanoplate-based Five-plex Digital PCR To Simultaneous Detection Of Pathogenic Viruses And Bacteria In Wastewater, Soichiro Hirai, Japan.

Smart Nanomaterials For Advanced Micropollutant Degradation, Andrea Veciana, Australia.

T2.09: Policy and Economic Tools for Sustainable Waste and Water Management

Tuesday 9 December, Session 3

This session focuses on the critical role of policy frameworks and economic instruments in advancing sustainable waste and water management. Presentations will explore tools such as life cycle assessment, cost-benefit analysis, and market-based incentives that drive effective decision-making and resource allocation. Case studies from diverse governance contexts will illustrate how integrated policies and economic strategies can promote circular economy practices, improve service delivery, and ensure environmental compliance. The session aims to foster dialogue on aligning regulatory mechanisms, institutional capacity, and financial models to support resilient, inclusive, and environmentally sound waste and water management systems worldwide.

Environmental Impact And Economic Performance Analysis Of Two Faecal Sludge Treatment Plants In Beijing: A Life Cycle Perspective, Shikun Cheng, China.

Ten Years Of THP AAD For Biosolids Management In Beijing -- Strategies And Performance, Julien Chauzy, Norway.

Strength And Gap Analysis Using CWIS Mentor City Indicators For Sustainable Sanitation In Bangladesh, Asef Redwan, Bangladesh.

Evaluating The Sustainability Of A Wastewater Treatment Facility Upgrade In Metro Manila: A Life Cycle Perspective On Nutrient Removal, Angelica Euara Manrique, Philippines.

Sustainable Wastewater Treatment In Pakistan: Advancing The Reed Bed System For Water Management, Muhammad Keryo, Pakistan

Wastewater Collection And Treatment Projects And A River Restoration Program In Hanoi City, Vietnam, Viet-Anh Nguyen, Vietnam.

T2.10: Transforming Sanitation Through Decentralized and Non-Sewered Systems

Wednesday 10 December, Session 1

This session highlights innovative approaches and practical strategies for implementing and scaling non-sewered and decentralized sanitation systems. With growing interest in resilient and locally adaptable solutions, the presentations cover a range of topics including population-based system design, climate-adapted technologies, and data-driven monitoring techniques. Case studies from India, South Africa, and beyond explore governance frameworks, performance assessments under extreme conditions, and the role of container-based and on-site systems in improving sanitation access.

Determining Population Equivalents For Individual, Non-sewered Sanitation Systems, Linda Strande, Switzerland.

The Resilience Of Container Based Sanitation, Alison Parker, UK.

Comparative Analysis Of Climate-Adapted On-Site Sanitation Technologies: Performance And Suitability Under Extreme Environmental Conditions, Tatchai Pussayanavin, Thailand.

Governance Of Decentralised Water Reuse In Bengaluru, India, Abishek Narayan, Switzerland.

Scaling Water-Efficient And Non-Sewered Sanitation Systems In South Africa: Lessons From The WRC's SASTEP Demonstration Programme, Phillip Majeke, South Africa.

Measuring TSS And TDS Inside Septic Tanks To Inform Fecal Sludge Treatment Plant Design In Rural India, Monisha Naik, Canada.

T2.11: Enhancing Wastewater Treatment through Emerging Technologies and Artificial Intelligence

Wednesday 10 December, Session 1

This session highlights advanced and cutting-edge technologies aimed at significantly enhancing the performance, sustainability, and resource recovery potential of wastewater treatment systems. The featured presentations, spans applications of artificial intelligence and machine learning for operational optimization as well as the deployment of novel treatment technologies beyond traditional frameworks. These studies demonstrate the technical feasibility and environmental relevance of next-generation treatment technologies aligned with circular economy and decarbonization goals.

Demonstration Test Of AI Guidance Technology To Support Advanced Operation Of Wastewater Treatment Plants, Yoshihiro Ishii, Japan.
High-performance Bio-digester (HPBD-2) For Efficient And Sustainable Blackwater Treatment: Optimization And Performance Evaluation, Anurag Tomar, India.
Efficient Wastewater Treatment By Combined Low-temperature Plasma And Ultrathin Graphitic Carbon Nitride Nanoflakes, Frantisek Zazímal, Czech Republic.

A Machine Learning Approach To Chemical Dosing Optimization In WWTPs, Viktoria Yavorska, Norway.

Integrating Anaerobic Membrane Bioreactors With Hydroponic Controlled Environment Agriculture: Advancing Urban Wastewater Treatment And Food Production, Seungkwan Hong, Korea Republic of
Electrochemical Oxidation Efficiently Decouples Trace Cu-DOMs In Biologically Treated Landfill Leachate, Shuzhao Pei, China.

T2.12: Cutting-Edge Nitrogen Removal Strategies in Wastewater Treatment

Wednesday 10 December, Session 1

This session delves into cutting-edge strategies for nitrogen removal in wastewater treatment, with a strong focus on Anammox and other innovative biological and physico-chemical processes. Presentations will cover advancements in Anammox applications, shortcut nitrogen removal, and hybrid technologies that improve energy efficiency and reduce greenhouse gas emissions. Researchers and practitioners will share insights into reactor design, process optimization, microbial ecology, and operational challenges. The session aims to showcase scalable, low-carbon nitrogen management solutions that align with sustainability goals and emerging regulatory demands, offering transformative pathways for next-generation wastewater treatment systems.

Full - Scale Integrated Fixed-biofilm Activated Sludge (IFAS) - Partial Nitritation/anammox (PN/A) Process For Treating Sludge Dewatering Liquor From Anaerobic Digestion After Thermal Hydrolysis, Bingyu Zheng, China.
Biochar Enhanced Sludge Granulation And Microbial Growth In Anammox Systems: Insights From EPS And Interface Thermodynamics, Jingwei Fu, China.
The Simultaneous Removal Of Ammonium From Water And NO From Flue Gas In NO-dependent Anammox System, Zexi Zhang, China.
Optimization Of Nitrogen Removal In Wastewater Treatment: Assessment Of Limonite-Based Adsorption And Process Efficiency At The Viacha WWTP, Bolivia, Cristhian Carrasco Villanueva, Bolivia.
Unveiling An Anaerobic Ammonium Oxidation Coupled To Fe(III) Reduction Pathway To N2: Intermediates And Metabolic Insights, Shiyong Zhang, China.
Anammox Bacteria Act As The Organics Supply Station For The Feeding Of Bacteria And Archaea In Anammox Consortia, Qi Zhang, China.

T2.13: Decentralized Sanitation Innovations and Scalable Solutions for Inclusive Urban-Rural Wastewater Management

Wednesday 10 December, Session 2

This session explores transformative approaches to urban and rural sanitation through innovative technologies, system optimization, and inclusive policy models. Topics include codigestion strategies for enhanced sludge treatment, onsite urine repurposing, urban-rural sanitation convergence, and the role of locally fabricated FSM technologies. Case studies from Kenya, Nepal, and across Asia highlight efforts to standardize septic systems, scale sanitation enterprises, and reduce overflows through smart sewer infrastructure controls. Together, these initiatives offer actionable pathways for cost-effective, eco-friendly, and sustainable sanitation services in the Global South.

Impact Of Pretreatment On Codigestion Of SBR Sludge And Municipal Solid Waste, Ashish Sahu, Norway.

Process Design, System Development, And Performance Evaluation Of An Integrated Onsite Urine Repurposing Technology, Sangeetha Vivekanandan, India.

Urban-Rural Convergence: A Proactive Approach To Reinforce The Existing Sanitation Situation In Asian Context, Harshi Sirisena, Thailand.

Locally Fabricated FSM Technologies: A Sustainable Journey Toward Safely Managed Sanitation, Sumaya Tabassum, Bangladesh.

Scaling Sanitation Enterprises: Addressing Capacity Gaps For Sustainable Market-Based Sanitation In Kenya, Eric Machango, Kenya.

Standardization Of Septic Tanks In Mahalaxmi Municipality: An Initiative For Low-cost Sustainable Decentralized Sanitation Approach In Global South For Wastewater Management, Hari Govinda Shrestha, Nepal.

T2.14: Understanding Microbial Interactions for Enhanced Treatment Performance

Wednesday 10 December, Session 2

This session delves into the microbial and ecological processes at the heart of wastewater treatment systems. Presentations highlight the role of microbial consortia, stress responses, and spatial patterns in treatment performance across various systems and strategies. By deepening our understanding of microbial and community-level dynamics, this session supports the development of advanced and resilient treatment solutions for diverse wastewater contexts.

Microbial Community Dynamics And Septic Tank Performance In Kazakhstan: A Case Study From A Cold Region, Aiman Uteyeva, UK.

Development Of Microalgae-bacteria Consortia For The Tertiary Treatment Of Wastewater, Yogita Gupta, India.

Investigating The Dynamics, Formation, And Degradation Of Sulfamate In Wastewater Systems And Implications For Treatment Strategies, Claudia Hledik, Austria.

Bioaugmentation For Enhanced Nitrogen Removal In Wastewater Treatment: A Sustainable And Cost-effective Solution For Climate-resilient Wastewater Treatment, Dirk Westensee, UK.

Evaluation Of Enzymatic Pre-treatment Coupled With Expanded Granular Sludge Bed Reactor (EGSBR) For Dairy Wastewater Remediation, Moses Basitere, South Africa.

T2.15: Decentralized and Inclusive Wastewater Solutions: Low-Energy Innovations for Resilient Sanitation Systems

Wednesday 10 December, Session 3

This session presents pioneering approaches to decentralized and community-scale sanitation, combining technical innovation with social equity. Topics include solar-powered septic systems, modular phytoremediation for urban drains, humus bioreactors, and mobile septage treatment units. Papers also explore advanced processes such as sulphur autotrophic denitrification and solar photocatalysis for persistent pollutants. A case study from Indonesia links toilet access with income and education, highlighting behavioral and equity considerations. Together, these presentations offer holistic, scalable solutions to improve sanitation in resource-constrained and underserved settings across Asia and beyond.

High-performance Sulphur Autotrophic Denitrification From Low-C/N Wastewater Using Novel Suspended Bio-S0 Filters In Short-process, Rashmi Koju, China.

Advancing Solar Septic Tank Technology: Performance Evaluation And Technical Validation In Southeast Asia, Tatchai Pussayanavin, Thailand.

Modular Biofilm-Phytoremediation System For In-Situ Urban Drain Remediation: A Low-Energy Solution In Resource-Constrained Settings, Ligy Philip, India.

Solar-Activated Tin Oxide For Photocatalytic Treatment Of Oil Sands Process Water: Degradation Of Naphthenic Acids And Toxicity Reduction, Hadi Mokarizadeh, Canada.

Assessment Of Toilet Ownership In Relation To Educational Attainment And Income Levels In Surabaya: A Case Study Of Semampir District, Nurina Fitriani, Indonesia.

Innovations In Sanitation For Underserved Communities, Pinky Kunene, South Africa.

T2.16: Harnessing Nature-Based Solutions for Resilient and Sustainable Wastewater Management

Wednesday 10 December, Session 3

This session explores the evovling role of nature-based solutions (NbS) in tackling water and wastewater management challenges, particularly in decentralized, rural, and resource-constrained environments. Through a series of diverse application, presenters will showcase innovative approaches such as macrophyte-assisted vermifiltration, bio-carrier systems using microalgae for micro/nano plastic removal. The session will also feature a case of over two decades of global implementation experience to highlight best practices and key lessons learned in designing and sustaining NbS in low- and middle-income countries. Collectively, the presentations illustrate how NbS can contribute to environmental sustainability, community resilience, and circular economy goals

Nature-Based Wastewater Treatment For Resilient Communities In Himalayan Region: A Demonstration Project At The District Police Line, Leh, Union Territory Of India, Ansu Susan Cherian, India.

Nature-Based Solution For Decentralized Water Management In Wildlife Facilities: A Case Study Of Barcelona Zoo, Cinthia Padilla, Spain.

Nature-based Approach To Close The E-cycle And Keep Water Safety, Bruno Henriques, Portugal.

Anabaena 418 As A Bio-Carrier For Micro/Nano Plastic Removal: Adsorption Mechanisms And Adaptive Responses, Baiyun Lu, China.

Performance Evaluation Of Canna Indica And Saccharum Spontaneum In Macrophyte-Assisted Vermifiltration For Cattle Feedlot Wastewater Treatment, Shruti Singh, India.

Nature-based Solutions For Wastewater Treatment In Low- And Middle-Income Countries: Lessons Learnt From 25 Years Of IRIDRA's Worldwide Experience, Anacleto Rizzo, Italy.

T2.17: Innovative Membrane and Adsorptive Technologies for Sustainable Wastewater Reuse and Resource Recovery

Thursday 11 December, Session 1

This session showcases cutting-edge advancements in membrane science and adsorptive materials to tackle membrane fouling, enhance wastewater treatment, and recover valuable resources. Topics include biochar-assisted fouling mitigation in high-solids AnMBRs, novel vertical green wall systems for low-cost water reuse, and membrane enhancements for biochemical recovery and lithium extraction. Emerging strategies such as limited-aeration MBRs, thermodynamic modeling, and ionic liquid membranes are also explored. Insights from CFD, material engineering, and interface thermodynamics provide a multi-scale understanding of water-energy nexus challenges and solutions.

Multi-Scale Mechanisms Of Biochar-Driven Membrane Fouling Mitigation In High-Solids AnMBRs: Insights From CFD And Interface Thermodynamics, Chengfan Jiao, China,

Applications Of Novel Adsorptive Media In Vertical Green Wall System (VGW) As A Low-cost Water Reuse Technology In Municipal Wastewater Treatment Systems, Chawalit Chaiwong, Thailand.

Shaking With Limited Air: A Novel Strategy For Effective Membrane Fouling Control In Membrane Bioreactors, Jiale Wang, China.

Enhancement Of Polyvinyl Alcohol Adsorbent Membrane Via Crosslink With Citric Acid And Lysin For Biochemical Recovery From Food Processing Waste Streams, Thu Hang Duong, Veitnam.

Electrospun Dual Nanofiber Membrane With Local Wettability For Enhanced Evaporation And Sludge Solidification In Zero Liquid Discharge (ZLD) Systems, Heechul Choi, Korea, Republic of

T2.18: Emerging Solutions for Toxic Metal and Contaminant Removal

Thursday 11 December, Session 2

This session explores emerging solutions for the removal of toxic metals and hazardous contaminants from wastewater systems. Presentations will highlight advanced treatment technologies such as adsorption using novel materials, nanotechnology-based filters, electrochemical processes, and bioremediation techniques. Case studies and experimental findings will demonstrate the effectiveness, scalability, and environmental safety of these innovative approaches in diverse settings. The session will also address the challenges of selectivity, cost-efficiency, and regulatory compliance. By showcasing cutting-edge research and practical applications, this session aims to drive forward sustainable and effective strategies for mitigating the risks associated with heavy metals and persistent environmental toxins.

Enhanced Removal Of Heavy Metals Using Sawdust And Rice Husk Derived Biochar From Aqueous Solutions, Abhijit Debnath, India.

Sorption Of Rare Earth Elements By GO-PEI: A Sustainable Approach For Water Purification, Nicole Ferreira, Portugal.

Harnessing Fe3O4-modified G-C3N4 And BNNS For Cutting-Edge Microplastic Remediation In Water Treatment, Riona Indhur, South Africa.

Single-step Synthesis Of MgAl2O4/MgO Nanocomposites From MgAl Scraps By Thermal Plasma Technique For Bi-functional Applications Of Supercapacitor And Waste-water Treatment, Kumaresan Lakshamanan, Thailand.

Advancing Biochar-Based Strategies For Heavy Metal Remediation In Wastewater: A Critical Review, Manoj Ozha, India.

Carbon-based Electrocatalytic Dual-membrane System Bolsters Singlet Oxygen Production For Ultrafast Water Decontamination, Ni Yan, China.

T2.19: Waste-to-Farm: Enhancing Soil Health through Safe Reuse Practices

Thursday 11 December, Session 3

This session highlights the potential of safely reusing treated wastewater, biosolids, and organic waste in agriculture to enhance soil health and support sustainable farming. Presentations will explore innovative treatment methods, risk mitigation strategies, and nutrient recovery techniques that enable the safe application of waste-derived products to land. Case studies from diverse agroclimatic regions will demonstrate improvements in soil fertility, crop yield, and carbon sequestration. The session emphasizes the importance of regulatory frameworks, stakeholder engagement, and monitoring to ensure environmental and public health safety.

Composted Sewage Sludge Application Enhances Soil Health And Potentially Mitigates Greenhouse Gas Emissions In Rice Paddies, Luc Phung, Japan.

Municipal Anaerobic Filter Effluent Treatment Using Advanced Oxidation Processes For Crop Production, Benton Otieno, South Africa.

Pathogens Reduction In Faecal Sludge During The Treatment By Planted Drying Beds: Value For Agricultural Production In Low-income Countries, Wilfried Arsene Letah Nzouebet, Cameroon.

Evaluating Co-compost Produced From Integrated Faecal Sludge Treatment Plants (FSTPs) In India, Shirish Singh, Netherlands.

Turning Human Urine Into Fertilizer Using Reverse Osmosis: A Pilot Study, Njabulo Thela, South Africa.

Performance Assessment Of Soil Conditioner, A Byproduct From Faecal Sludge Treatment Plant (FSTP), Md Shakhawat Hossain, Bangladesh.

T2.20: Tailored Treatment Solutions for Industrial Wastewater

Thursday 11 December, Session 3

This session explores innovative and tailored approaches for treating industrial wastewater, recognizing that each industry presents unique challenges and characteristics. The presentations highlight cutting-edge technologies and full-scale applications, from microbial electrochemical systems and bioremediation to electrocoagulation and selective resource recovery. Case studies cover a range of industrial sectors including textile, mining, and shale gas, demonstrating how specialized solutions can effectively address complex contaminants and support sustainable water management in industrial contexts.

Dye Another Day: Electrically Active Microbes In EULand And Membranes To The Rescue, Tjandra Setiadi, Indonesia.

Bioremediation Of Fluorinated Pollutants By Pseudomonas Sp. Strain 273, Yongchao Xie, China.

Integrated Co- Treatment System For Acid Mine Water And Industrial Wastewater: An Innovative Approach, Thobeka Makhathini, South Africa.

Treatment Of The Spin Cycle Effluent Using Electrocoagulation And Granular Activated Carbon, Shamik Prabhu Chodnekar, India.

Selective Lithium Extraction From Shale Gas Wastewater By A Rocking-chair Electroadsorption System With Al-F Co-dopped LiMn2O4 Electrodes, Chanyong Zhang, China.

Characterization Of Microbial Electrolysis Cell's Bioanode Performances Through Potentiostatic And Potentiodynamic Techniques, Marco Zeppilli, Italy.

Theme 3 - Smart Water Management: Integrated approaches for effective water management and planning

T3.01: Resilient Infrastructure & Tackling Non-Revenue Water Loss

Tuesday 9 December, Session 1

This session highlights strategies for non-revenue water (NRW) reduction, infrastructure efficiency, and smart utility management

Taiwan Water Corporation's NRW Reduction Journey - High Road Or Low Road?, Joe Lim, Chinese Taipei.

24x7 Water Supply In Rajkot : A Water Security Plan, Prerna Jadhav, India

MCC Mongolia Water Compact -- A Smart Water Management Initiative For Ulaanbaatara, Kumar Ranganathan, United States.

Pipe Failure Prediction In Water Transmission Lines Using Interpretable Machine Learning With Imbalanced Data, Taegon Ko, United Kingdom.

From 54% To 12% Of NRW -- Strategies And Tools Of An Excellence Program Of Porto To Increase Efficiency & Sustainability, Flávio Oliveira, Portugal.

Enhancing Water Management Efficiency Through A Centralized Operation Control Center: The Semarang Water Utility Success Story, Ardian Wiedilaksono, Indonesia.

T3.02: From Data to Drops: AI in Smart Water Management

Tuesday 9 December, Session 1

Focuses on AI, machine learning, and digital twin technologies for flood prediction, leak detection, and water system optimization.

Integrating Flood Risk Modeling Into Urban Digital Twins: A Framework For Real-Time Assessment, Decision-Making And Public Engagement, Lars Backhaus, Germany.

A Model Predictive Control Framework For Smart Predictive Digital Twins In Water Supply Systems, Ana Luísa Reis, Portugal.

Building Resilient Water Systems With AI-enhanced WASH Data, Rajit Ojha, Nepal

InnoWave: The Power Of Digital And Artificial Intelligence In Water Efficiency, Flávio Oliveira, Portugal.

Research On The Multi-Parameter Collaborative Verification Method Of Pump Characteristic Curves Based On Big Data Analytics, Xiaoyu li, China.

Water Leakage Identification And Accurate Location Based On AI Algorithm, Dongmei Qin, China

T3.03: Connected Communities: Digital Platforms for Inclusive Engagement

Tuesday 9 December, Session 2

Features digital tools, public engagement, and data-driven decision-making for water management.

Collaboration Between Water Users And Water Utilities Using Smartphone Apps, Kazuya Naito, Japan.

Wastewater Masterplanning Tools At Settlement, Regional, And Global Scales Reduce Costs To Realize SDG 6, Jan Friesen, Germany.

Evaluating The Effectiveness Of Smart Water Management Systems In Enhancing The Resilience And Sustainability Of Water Infrastructure In Developing Countries, Saravanamuthu Vigneswaran, Australia.

Automatic Fault Detection In Water-quality Sensors Using Predictive Machine Learning Models, Wedahitha Yapa, Sri Lanka.
DREINCAM: New Intelligent Drainage Management System In Madrid Region, Antonio Lastra de la Rubia, Spain.
Remote Sensing-Driven Phytoremediation: A Sustainable Approach To Heavy Metal Pollution In Water Resources, Deepika Sharma, India.

T3.04: Navigating Flood Hazards: Enhancing Urban Resilience

Thursday 11 December, Session 1

Addresses flood risk assessment, climate-adaptive drainage, and nature-based solutions for urban resilience.

Case Study On Carbon Reduction In A Water Cycle City Based On Water Reuse, Soon Buhm Kwon, Korea, Republic of
Resilient Urban Drainage Systems: Towards Cost-Effective And Climate-Adaptive Solutions, Darko Joksimovic, Canada.
A Framework For Selecting And Assessing Nature-Based Solutions For Soil Erosion Control In Water Resource Management In Addis Ababa, Ethiopia, Kimberly Wang, Netherlands.

Understanding The MNF For DMAs: How Much Night Water Consumption Is Contained?, Qiang Xu, China.

AI-Driven Urban Flood Risk Assessment: Integrating Machine Learning For Resilient Water Management, Shafayet Rahman, Bangladesh.
A Virtual Reality Visualization Of Urban Flooding Simulation Coupled With The SWMM, Jiye Park, Korea, Republic of

T3.05: Rural Water Security through Small-Scale, Localized & Decentralized Solutions

Thursday 11 December, Session 1

Showcases decentralized, rural, and community-led water/sanitation solutions.

The Story Of The Matsu Islands - Transforming For Smart And Resilient Water Systems, Menghsu (Andrew) Yu, Chinese Taipei.
Water To Cherish In Urban Landscapes In The Global South - Nature-Based Solutions For Climate Resilient Water Design In Low Income Neighorhoods In South-Africa And Nambia, Martin Knuijt, Netherlands.
Can Solar Disinfection Of Harvested Rainwater Improve Access To Safe Water In Healthcare Centers In Rural Malawi?, Kevin McGuigan, Ireland.
Digital Platforms Supporting Mahalaxmi Municipality In Standardizing Sanitation System, Irisa Shrestha, NEpal.
Examining The Interlinkage Between Water Poverty And Vulnerability In Coastal India, Anubhav Sharma, India.
Evaluation Of Plant Performance In Enhancing Pollutant Removal In Constructed Floating Wetlands, Ranjan Sarukkalige, Australia.

T3.06: Climate-Resilient Water Security: Strategies for a Changing World

Thursday 11 December, Session 3

Examines climate adaptation, water security, and hydrological modeling in vulnerable regions.

Resource Recovery Through Stormwater Reuse: Enhancing Water Security In The Himalayan Ridge Town Of Darjeeling, Suvajit Dey , India.
Basin-scale Hydrological Modeling For Simulation Of Trends In Streamflow And River Morphology In The Lower GBM Basin, Md Golam Mostafa, Bangladesh.

The Effect Of Wildfires On Soil Hydraulic Properties And Groundwater Recharge In San José De Chiquitos, Bolivia, Mónica Guzmán-Rojo, Bolivia.
Adaptations To The Impacts Of Climate And Demographic Changes On Water Supply And Demand In Nairobi, Kenya, Lydia Munene, Kenya.
Adaptation To Water Insecurity In The Vietnamese Mekong Delta: A Case Study Of Soc Trang Province, David Rodgers, Australia.
Integrated Spatial Planning Design With NbS For Critical Infrastructure Protection Against Multiple Climate Driven Hazards, Carme Machí Castañer , Austria.

T3.07: Regenerative Water Management: Sustainable & Circular Approaches

Friday 12 December, Session 1

Explores circular economy approaches, resource recovery, and sustainable technologies for water treatment.

Sustainable Approach For Waste Management: Advancing Circular Economy In Wastewater Treatment, Narasamma Nippatlapalli, India.

Mitigate Urban Floods Caused By Extreme Rainfall Using Nature-Based Solutions, Nian She, China.

Sustainable Activated Carbon Production From Agricultural Waste For Climate Change Mitigation And Water Treatment, Hayat Raza, Canada.

Advancing Off-grid Water Self-sufficiency On Household Level, Devi Buehler, Switzerland.

Extreme Weather Exposure Assessment Of Green Stormwater Infrastructure In Urban Areas Through Index Development, Miguel Enrico Robles, Korea, Republic of.

Utilising UAVs In Turbidity Measurement And Catchment Management Planning, Gabriel Njokaphiri, Malawi.

T3.08: Navigating the Industrial Water Crisis: Technologies and Best Practices

Friday 12 December, Session 1

Tackles industrial/mining wastewater challenges, metal recovery, and advanced monitoring

Assistive Water Intelligence (AWI): A Scalable Digital Framework For Industrial And Urban Water Sustainability, Sri Harsha Karumanchi, India.
Establishing Sulfate Concentration Limits For Integrating Secondary Battery Wastewater To Public Wastewater Treatment Plants In South Korea, Sang Yeob Kim, Korea, Republic of
Carbon Source Dosage Intelligent Determination Using A Multi-feature Sensitive Back Propagation Neural Network Model, Aijiao Zhou, China.
Optimizing Hydropower Generation In Cascade Reservoirs: A Climate-Resilient Approach To Achieve Indonesia's Renewable Energy Goals, Angeline Kusumaningrum, Indonesia.
Green Solutions For Acidic Mining Waters: Seaweed-based removal And Recovery Of Critical Metals, Thainara Viana, Portugal.
Messages From The Electrical Sensing Zone (ESZ): A Novel Approach To Characterizing Particulate Matter In Water Environment, Kang Xiao, China.

T3.09: From Ideas to Impact: Innovating Policy and Governance

Friday 12 December, Session 2

Covers policy frameworks, governance tools, and SDG-aligned planning for water systems.

Circular Economy And Wastewater Reuse: A Comparative Analysis Between India And Global Practices, Manikprabhu Dhanorkar, India.
Ensuring Safe Drinking Water: Climate-Resilient Water Resource Management In Small Island States -- Lessons From Timor-Leste, Mario Santos, Timor-Leste.

GIS-Driven Strategies For Sustainable And Smart Water Resource Management And Climate Adaptation, Abhaye Mahajan, India.

Application Research Of Model-driven Based Adaptive Scheduling In Water Distribution Systems, Dai Xiong Qi, China.

Development Of A Failure Risk Estimation Technique For The Pipes In Water Distribution Systems, Suwan Park, Korea, Republic of.

A Systemic Approach To Urban Water And Sanitation Planning In Heterogeneous Contexts In Low- And Middle-income Countries, Simon Ross, Australia.

T3.10: Water Integrity: Advanced Solutions for Quality Preservation and Pollution Re

Friday 12 December, Session 2

Investigates water pollution, contaminant detection, and remediation strategies for safe water.

Comprehensive Detection Of ARGs In Wastewater, River, And Seawater In Thailand Using HT-qPCR, Thitima Srathongneam, Thailand.

Prevalence Of Antibiotic Resistant Bacteria In Urban Surface Water In Khulna, Bangladesh, M M Majedul Islam, Bangladesh.

Spatial Assessment Of Microplastic And Heavy Metal Pollution In Deepor Beel: An Urban Ramsar Wetland In Northeast India, Sumantra Chaudhuri, India.

Tracing The Footprints Of Land Use Land Cover Changes On Water Quality In The Delhi Stretch Of The Yamuna River, Neenu Neenu, India.

Development Of Fluorescent Sensor For Detection Of Pb2+ In Drinking Water, Minerva Teli, United States.

Resuscitation, Regrowth And Release Of Escherichia Coli In Biofilm To Chlorinated Reclaimed Wastewater, Hisashi Satoh, Japan.

Theme 4 - Enhancing Utility Management and Operations for Sustainable Growth

T4.01: Equity & Access in Water Distribution

Tuesday 9 December, Session 2

The session explores equitable water access, service benchmarking, and inclusive solutions for underserved communities.

Quantifying Seasonal Demand For Reliable Piped Water Supply In Kumasi, Emmanuel Opoku, Ghana.

Development Of An Innovative Water Services Institutional Model Through Licensing And Regulation -- A South African Experience, Jayant Bhagwan, South Africa.

Challenges Of Water Supply Improvement In Informal Settlements: The Transient Nature Of The Urban Poor -- A Case Of Kampala City, Evelyn Mukajusi, Uganda.

Leveraging Customer Feedback For Sustainable Water Service Improvement: A Case Study Of PDAM Semarang, Ardian Wiedilaksono, Indonesia.

Enhancing Energy Efficiency In Water Utilities: Challenges And Opportunities In Low-Income Countries, Jonas Aabe-ere, Ghana.

Rethinking Community Water Management Model In Piped Water Systems, Beatrice Kyomuhendo, Uganda.

T4.02: Urban Water Resilience & Infrastructure

Wednesday 10 December, Session 1

The session addresses urban water resilience, flood prevention, digital transformation, and infrastructure management in cities.

Strategy And Action Plan Of Integrating Management Between Water And Wastewater Service, Raden Ridhoni, Indonesia.

Decentralized Sewage Interventions: Comparative Study Of The Water Quality Of Two Streams In The São Francisco Basin In The Rural Area Of The Municipality Of Ouro Branco, Dr. Jackson Oliveira, Brazil.

From Water Loss Reduction And Energy Efficiency To Climate Resilience: A Case Study Of PDAM Sleman, Dwinita Wulandini , Indonesia.

Improving Implementation Of Water Safety Plans Through Policy Establishment, Induka Werellagama, New Zealand.

What Proportion Of Nodes Is Sufficient For Assessing The Resilience Of Water Distribution Networks?, Xipeng Yu , China.

Machine Learning-Based Prediction Of Nitrous Oxide Emissions In Wastewater Treatment: A Climate-Smart Approach For Resilient Sanitation And Process Optimization, Gnanaraj Augustine, United States.

T4.03: Sustainable Water Management & Circular Economy

Wednesday 10 December, Session 2

The session focuses on sustainable water management and circular economy practices like zero liquid discharge, nutrient recovery, circular economy models, and sludge management to enhance water system sustainability

Sustainable Consumption Towards Zero Liquid Discharge - The Case Of Air Selangor, Nurul Sa'dah Bahar, Malaysia.

Innovative Approach To Sewage Sludge Anaerobic Digestion For Energy Recovery Maximization, Andrea Capodaglio, Italy.

Advanced Anaerobic Digestion At Polish Sludge Treatment Center Achieves High Throughput And Energy Efficiency, Ashish Kumar Sahu, Norway.

Treated Municipal Wastewater Fertigation For Circular Nutrient Recovery And Greenhouse Gas Mitigation In Rice Cultivation, Jittrera Buates, Japan.
Enhancing Sustainability And Efficiency In FSSM Plants: Assessment Of O&M Models In Uttar Pradesh, Hari Haihyvanshi, India.
The Wat(t)er FabLab: Pioneering 3D Printing For A Circular Economy In Water Management, Joana Fonseca, Portugal

T4.04: Data-Driven Water Management

Wednesday 10 December, Session 2

The session highlights data analytics, smart metering, and digital tools for efficient water utility operations and NRW reduction.

A Rosetta Stone Approach To Understanding Inter-relationships Between Real Loss KPIs, Kate Stanton-Davies, United Kingdom.
Optimizing Pipeline Management: Tackling Leaks, Non-Revenue Water, And Operational Challenges At Ghana Water Limited (GWL), Christina Koranteng, Ghana.

Evaluating Water Supply Services In Pokhara, Nepal: Insights From NWASH-MIS Data, Noboru OZAKI, Japan.

Development Of An Optimized Tariff Modelling In Support Of 'Fair Water Billing For All' Within EThekwini Municipality, Durban, Ismail Banoo, South Africa.

Accountability Mechanisms And Initiatives For Utility Management, Arwa Bharmal, India

Enhancing Utility Management And Operations For Sustainable Growth: A Case Study Of Non-Revenue Water Management At National Water And Sewerage Corporation, Uganda, Ivam Akambona, Uganda.

T4.05: Rural & Climate-Resilient Solutions

Friday 12 December, Session 1

The session covers rural water resilience, informal settlement challenges, and climate adaptation in developing regions.

Climate Resilience Of Urban Water Supply And Sanitation Systems: A Case Study Of Urban Water Resources And Infrastructure Operations In Bangkok, Thailand , Maria Anjelica Ancheta , Thailand
Development And Piloting Of The Rural Water Supply Climate-Resilience Monitoring Tool (RWS-CRMT) In Indonesia, D. Daniel, Indonesia.

Driving Climate Resilience Through Inclusive Water Services, Lady Owusua Asiedu, Ghana.

Employing Smart Metering For Climate-Smart Water Management And Resilience: A Case Study Of Ghana Water Limited (GWL), Christina Koranteng, Ghana
Bridging Theory And Practice: Transforming Water Utility Management Through Simulation Training, Nancy Godson, Ghana.

Reliability Assessment Framework Of Customer In Urban Water Supply System, Yuequan Bao, China.

T4.06: Industrial & Health Risk Mitigation

Friday 12 December, Session 2

The session examines industrial wastewater risks, health impacts of contamination, and sanitation solutions for vulnerable groups.

Investigating WASH Systems For Industrial Migrant Workers: The Case Of Surat, Ishank Mishra, India.

Evaluating Simplified Sewerage In Sub-Saharan Africa: A Multi-case Study Approach, Matthew Jackson-Koufie, United Kingdom.

The Servicing Of Container-based Sanitation Users And Its Impact On Quality Of Life, Alison Parker, United Kingdom.

A New Approach To Controlling An SBR Process: A Full-Scale Application In An STP For The Southeast Asian Market, Alessandro Aguiari, Italy.

Risk Analysis Of Fecal Contamination In The Residential Area Around A Communal Domestic Wastewater Treatment Plant, Ahmad Setiyawan, Indonesia.

Life Cycle And Human Health Risk Assessment Of Water Treatment Sludge Disposal Alternatives, Alisher Alibekov, Kazakhstan.

Theme 5 - Strengthening Governance and Financial Systems for Long-Term Development

T5.01: Financing & Economic Approaches

Tuesday 9 December, Session 3

Explores financing mechanisms, cost recovery models, and economic strategies to achieve sustainable and inclusive WASH services.

Financial Strategy For Inclusive Onsite Sanitation In Low-Income Communities In Urban Centers In Bangladesh, MD Habibur Rahman, Bangladesh.
Cost Of Universal Access To WASH Services: Learning From A Comprehensive WASH Plan In A Coastal Sub-district Of Bangladesh, Md Golam Rasul, Bangladesh.

Creditworthiness Assessments- An Approach For Indian Cities, Dhruvkumar Bhavsar, India.

Innovative Financing Options For Infrastructure Development In Developing Countries In The Face Of Declining Donor Financing: A Case Of Uganda's National Water And Sewerage Corporation, Denis Taremwa Kamugisha, Uganda.

Sustainable WASH Financing For Low-Income Households, Mingma Sherpa, Nepal.

The Cost Of Inaction: Assessing Impacts Of Inadequate WASH Funding In Bangladesh, Ramkrishna Paul , India.

T5.02: Environmental Health & Circular Economy

Wednesday 10 December, Session 3

Focuses on environmental health risks, circular economy applications, and sustainable practices in WASH systems.

Multi-Stakeholder Dialogues For Safe Wastewater Reuse In Urban Agriculture: Opportunities And Limitations, David Galibourg, United Kingdom.
Investigating Microplastic Pollution In Alpine Lakes And Cryospheric Regions Of The North-Western Himalayas, Shahid Dar, India.

The Hidden Costs Of Water Sachet Waste, Elizabeth Cullen, United Kingdom.

The SCS SAP Project Actions Toward Land-based Pollution Management In The South China Sea And Gulf Of Thailand, Si Tuan Vo, Vietnam.
Do Household Water Connection Procedures Influence The SDG 6? Evidence From Indian Municipalities, Pranesh Muthuchami, India.

Securing Safe And Affordable Water Under The Economic Crisis In South Sudan, Ms. Jabe Jermalili, Japan.

T5.03: Climate Resilience & Adaptation

Thursday 11 December, Session 2

Explores inclusive sanitation solution, gender equity, and approaches to address sanitation challenges in underserved communities.

Impacts Of Long-term Climate Change On Water- And Mosquito-borne Diseases: Outcomes From A Global Scoping Review Of Quantitative Research, Jesse Limaheluw, Netherlands.
Bridging Water Governance Gaps In Darjeeling: Addressing Scarcity With Inclusive, Sustainable Solutions In The Himalayas, Suvajit Dey, India.
Evidence Of Resilience Of Rural Water Supplies And Household Toilets From Southern And Western Africa, Anisha Nijhawan, United Kingdom.

Costing Safely Managed And Climate-resilient Rural Sanitation Systems: A Life-cycle Analysis In Lao PDR, Alejandro Medina Valenzuela, Australia.
Empowering Climate Migrants For A Resilient Future: Addressing WASH Challenges For Climate Migrants In Low-Income Communities Of Bangladesh, Ramkrishna Paul, India.
Tailored Business Models For Nature-Based Solutions: Context-Driven Value Propositions In Global Urban Water Management, Carme Machí Castañer, Austria.

T5.04: Technology & Innovation

Thursday 11 December, Session 2

Highlights the technological enhancements and innovations including use of digital tools and programmatic approaches to improve WASH service delivery

Public Awareness, Trust, And Readiness To Adopt AI-driven WASH Policies, Dr Rathin Biswas, India.

Strategic Sanitation Planning In Urban Bangladesh: Leveraging Digital Tools For Targeted Investments, Sonia Shahid, Bangladesh.
Bridging Policy To Practice : Leveraging Desludging Tool For Sustainable FSSM Operations In The Uttarakhand, India, Shantanu Kumar Padhi, India.
WASH Systems Index Assessment In Bangladesh: Transformation To Strengthen WASH Service Delivery, Md Shakhawat Hossain, Bangladesh.
Using Peer Learning To Build Local Government Capacity For Delivering Improved Sanitation, Jamie Myers, United Kingdom.
Strengthening External Support For More Sustainable Community-based Rural Water Systems: An Analysis Of PAMSIMAS Program In Indonesia, Cindy Priadi, Indonesia.

T5.05: Equitable WASH Solutions

Friday 12 December, Session 1

Explores inclusive sanitation solution, gender equity, and approaches to address sanitation challenges in underserved communities

Measuring Urban Sanitation And Women Empowerment: Exploring The Role Of Governance And Finance, Raisa Habib, Bangladesh.
Bridging Economic And Sustainability Gaps In Institutional WASH: A Risk Assessment And Cost Recovery Approach To Combat Toilet Loss In Schools And Health Centres, Sandra van Soelen, Netherlands.
Strategic Shift To Sustain Operation And Maintenance For Public Water And Sanitation Facilities In Bangladesh, Md Azizur Rahman, Bangladesh.
Health Status And Quality Of Life Among Historically Discriminated Community: A Case Study Of Indian Female Manual Scavengers , Rajan Ram, India.
Inspiring State Owned Water Utilities From Low And Middle Income Countries To Use Alternative Project Financing: A Case Study Of Tanga UWASA's Green Bond Issuance, Geofrey Hilly, Tanzania.
Bridging The Sanitation Divide: Innovations For Inclusive And Resilient Urban Sanitation In Nepal, Satish Shahi, Nepal.

T5.06: Governance & Policy for WASH Systems

Friday 12 December, Session 2

Focuses on governance models, policy reforms, data systems, and multi-stakeholder approaches to strengthen WASH service delivery and management.

Investment Challenges In Water Infrastructure: An Initial Policy Review Of Public-Private Partnership (PPP) Reforms In The Philippines, John Pepard Rinchon, Philippines.
Sustainable, Inclusive, And Evidence-based Sanitation Governance: Lessons From Strengthening Public Data Systems In Bangladesh And Uganda, Ankit Chatri, India.

Advancing The Evidence For Water, Sanitation, And Hygiene (WASH) Systems Strengthening: A Delphi Study To Define Research Priorities, Ruth Sylvester, United Kingdom.
Sanitation Data Reformation In Bangladesh: Challenges, Coordination Mechanisms, And Sustainable Solutions, Shishir Biswas, Bangladesh.
Advances And Challenges In The Implementation Of The Guidelines Of The Basic Sanitation Legal Framework, Patrícia Areal, Brazil.
Improving Water Supply And Sanitation Access In Southeast Asia - Addressing Climate, Economic, And Policy Barriers, Ramkrishna Paul, India.

Water and Development Congress & Exhibition 2025

Preliminary Workshop Programme

Theme 1 - Ensure Safe Drinking Water: Innovative approaches for treatment and supply

W 1.01 - Effecting Improved Intermittent Water Supply (IWS)
Tuesday 9 December, Session 1

W 1.02 - Ensuring Rural Drinking Water Safety In Developing Countries: Challenges And Opportunities
Wednesday 10 December, Session 1

W 1.03 - Strengthening The Impact of Water Safety Plan Training
Wednesday 10 December, Session 2

W 1.04 - HRWM Workshop for Pathogen Risk Management for Drinking Water Consumption
Wednesday 10 December, Session 3

W 1.05 - Innovative DX Solutions for Sustainable Water Supply
Thursday 11 December, Session 3

W 1.06 - Solving Water Pollution Through Youth-Led Community Based Water Solution Framework
Friday 12 December, Session 2

Theme 2 - Advancing Wastewater Treatment and Sanitation Services: Sustainable solutions for all

W 2.01 - Design Sprint: Building Future Water-Sensitive Cities
Tuesday 9 December, Session 3

W 2.02 - Pre-Assessment for Carbon Finance: Evaluating Wastewater & Sanitation Project Eligibility for Carbon Finance
Wednesday 10 December, Session 2

W 2.03 - Empowering Communities Through Resource-oriented Sanitation
Thursday 11 December, Session 2

W 2.04 - Transformative Water Practices in The Circular Economy
Thursday 11 December, Session 2

W 2.05 - The Science You Need to Understand Emissions from Non-sewered Sanitation
Thursday 11 December, Session 3

W 2.06 - From Climate Vulnerability to Climate Resilience: Innovation and Systems Change in Urban Sanitation
Thursday 11 December, Session 3

W 2.07 - Development of Global Database for Faecal Sludge Characteristics
Friday 12 December, Session 1

W 2.08 - Bridging The Gap: Overcoming Implementation Barriers to Scale Sustainable Sanitation Solutions
Friday 12 December, Session 1

Theme 3 - Smart Water Management: Integrated approaches for effective water management and planning

W 3.01 - Scaling Water-Sensitive Urban NbS for Equitable and Lasting Impact
Tuesday 9 December, Session 1

W 3.02 - Catchment-level Approach for Climate Resilience in Water Systems
Tuesday 9 December, Session 2

W 3.03 - Understanding the NRW Water Balance
Tuesday 9 December, Session 2

W 3.04 - Designing A Sustainability Index Framework: A Hands-On Workshop for Enhancing Water Network Performance Evaluation
Tuesday 9 December, Session 3

W 3.05 - Circular Economy as an Innovation Pathway for Resilient, Inclusive Water and Sanitation
Thursday 11 December, Session 1

W 3.06 - Data Insights for Better Utility Management: Your Path to Improvement?!
Thursday 11 December, Session 2

W 3.07 - Topic TBC
Friday 12 December, Session 2

Theme 4 - Enhancing Utility Management and Operations for Sustainable Growth

W 4.01 - Scaling Up Peer Learning Partnerships in Water and Sanitation: A Capacity Development Approach
Tuesday 9 December, Session 2

W 4.02 - The State of Water and Sanitation Utilities: Utility and System-level Perspectives for
Wednesday 10 December, Session 1

W 4.03 - Unlocking The Power of AI to Transform Operational Performance of Water Utilities
Wednesday 10 December, Session 3

W 4.04 - Strengthening Governance and Financial Systems for Long-Term Development Through Circular Multi-Purpose Wastewater Reuse In Urban Areas
Thursday 11 December, Session 1

W 4.05 - Practical Toolkits on Gender Mainstreaming in Water and Sanitation
Thursday 11 December, Session 2

W 4.06 Community-driven Participatory Monitoring for Safe, Equitable, Sustainable and Climate Resilient Water, Sanitation, And Hygiene Services
Thursday 11 December, Session 3

W 4.07 - Young Water Leaders' Global Roundtable. Leading Question: How Can Young Water Professionals Drive Innovative Solutions for Water Resilience?
Friday 12 December, Session 1

Theme 5 - Strengthening Governance and Financial Systems for Long-Term Development

W 5.01 - WASH System Index Tool: An Opportunity to Strengthen WASH Service Delivery
Tuesday 9 December, Session 1

W 5.02 - Empowerment of Women in Sanitation Enterprises: Innovations for Inclusive Governance for Reaching Unserved Communities
Tuesday 9 December, Session 3

W 5.03 - Geo-Dashboards Innovatively Powering Water Service Regulation, Bolstering Investments and Coverage
Thursday 11 December, Session 1

W 5.04 - Topic TBC
Thursday 11 December, Session 3

W 5.05 - Come Together: The Challenges of an Alliance on Safe Sanitation
Friday 12 December, Session 1

W 5.06 - Water Security and Water Resilience Beyond the SDGs
Friday 12 December, Session 1

W 5.07 - Strengthen Institutionalization Of Marginalized Community Networks/CBOs In WASH Governance
Friday 12 December, Session 1

W 5.08 - Enhancing Water Resilience Through Nature-based Solutions: Policy, Implementation and Urban Benefits
Friday 12 December, Session 2

Special Workshops

SW.01 - Special Workshop

Tuesday 9 December, Session 1

SW.02 - Special Workshop

Tuesday 9 December, Session 2

SW.03 - Special Workshop

Tuesday 9 December, Session 3

SW.04 - Charting the Course to Water Security: The Asian Water Development Outlook 2025

Wednesday 10 December, Session 1

SW.05 - Trends in Climate Resilient Water and Sanitation Systems in Asia and the Pacific

Wednesday 10 December, Session 2

SW.06 - Special Workshop

Wednesday 10 December, Session 3

SW.07 - Special Workshop

Wednesday 10 December, Session 1

SW.08 - Special Workshop

Wednesday 10 December, Session 2

SW.09 - Special Workshop

Wednesday 10 December, Session 3

SW.10 - Special Workshop

Wednesday 10 December, Session 3

SW.11 - Special Workshop on Systems Leadership

Thursday 11 December, Session 1

SW.12 - Special Workshop

Thursday 11 December, Session 3

SW.13 - Digital Water in Emerging Economy： Needs, Opportunities, and Challenges

Friday 12 December, Session 1

SW.14 - Scaling Up Water & Sanitation? What about the critical Human Capital bottleneck?

Friday 12 December, Session 2

SW.15 - Integrated water management for fast-developing cities in Asian countries

Friday 12 December, Session 2

SW.16 - IWA & Grundfos Youth Action for SDG6 Fellowship - Interactive discussion on enabling community-led solutions for water challenges

Friday 12 December, Session 2