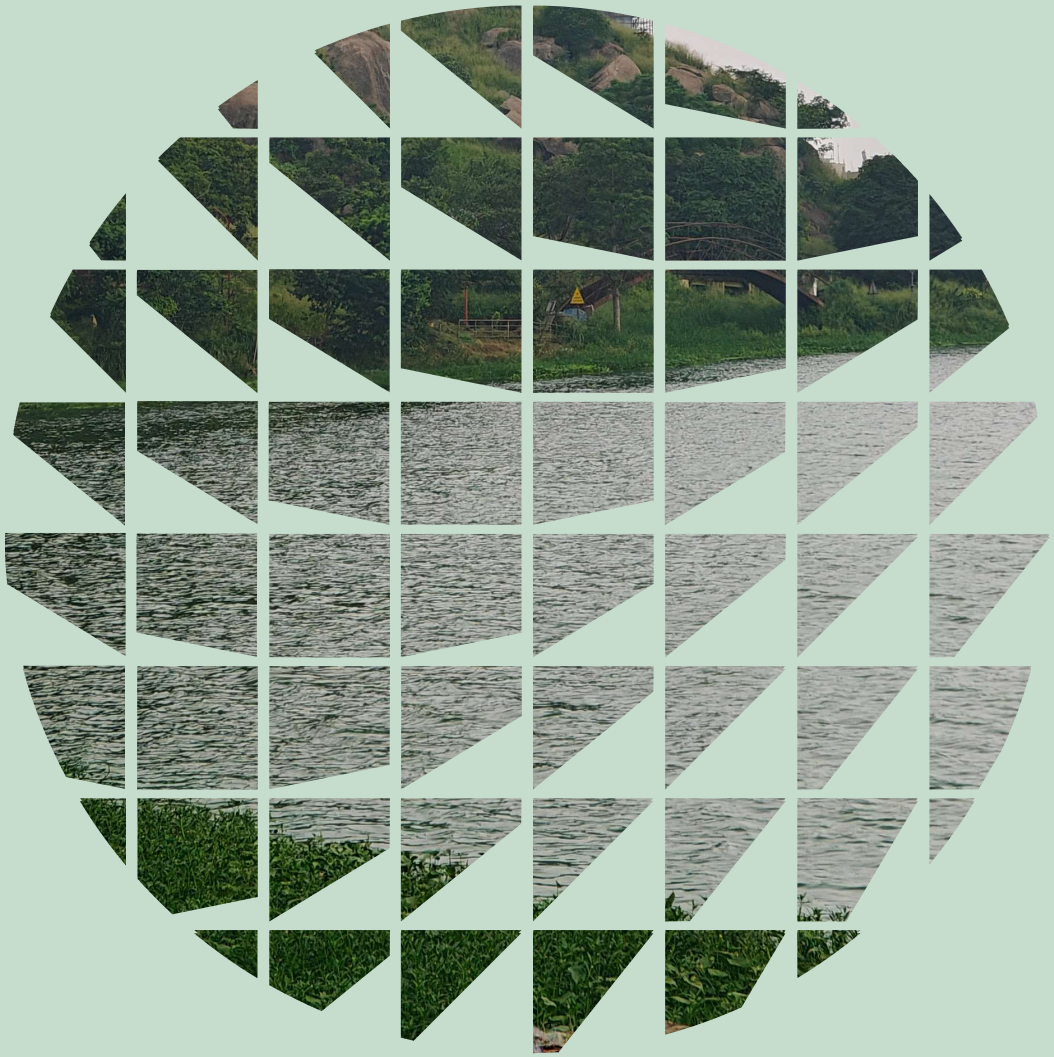
Water Sensitive Cities (WSC) And Multi-stakeholder Collaboration

For Inclusive Water Governance In Indian Cities



TARIKA GULATI AND GEETA SANDAL

India Water Week 2026

TF – 5: Multi Stake-holder Partnerships for Efficient Water Management

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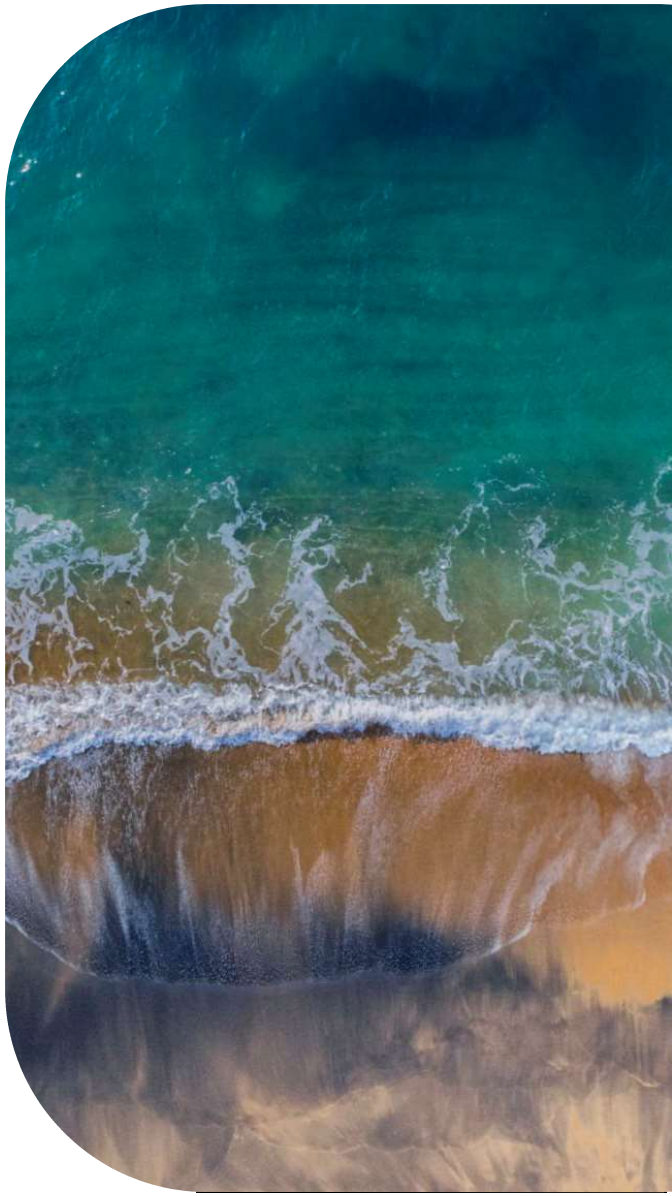
Water Sensitive Cities

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Case study – Agartala City

Learnings

Lessons for Indian Cities



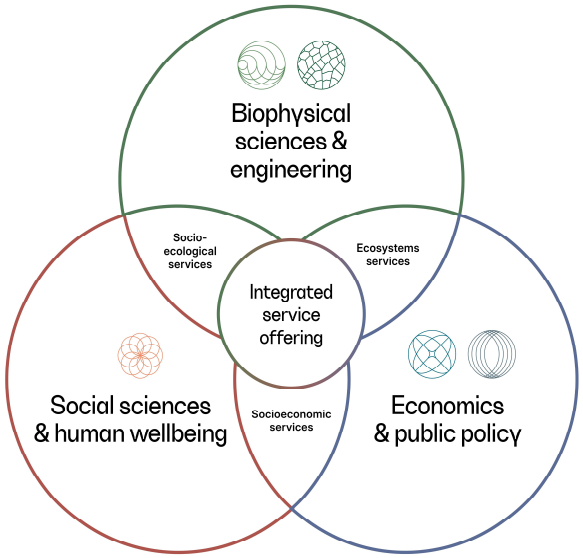
Alluvium Group

Alluvium is an **employee-led environmental and social advisory practice** founded in 2006, with over 200 specialists across Australia and **an established presence across Southeast Asia, South Asia and the Pacific**.

We partner with governments, infrastructure agencies and private developers to address complex water, climate, ecology and urban environment challenges through integrated, place-responsive solutions.

Our expertise spans **urban water planning and design, waterways infrastructure, blue-green infrastructure, open-space planning, nature-positive urban design, climate-responsive master planning and physical climate risk advisory**.

With nearly two decades of trusted client partnerships, Alluvium brings technical rigour, collaborative delivery and integrated design thinking to help shape resilient, liveable and future-ready places.



alluvium consulting	Science, engineering and strategy for catchments, rivers and coasts
natural capital & climate	Economics, policy and strategy for climate resilient and sustainable futures
mosaic insights	Strategy and design for communities with nature at their heart
eco futures	Ecological advice, strategy and design in a changing environment
amperes	Strategy, planning and analysis for energy transition

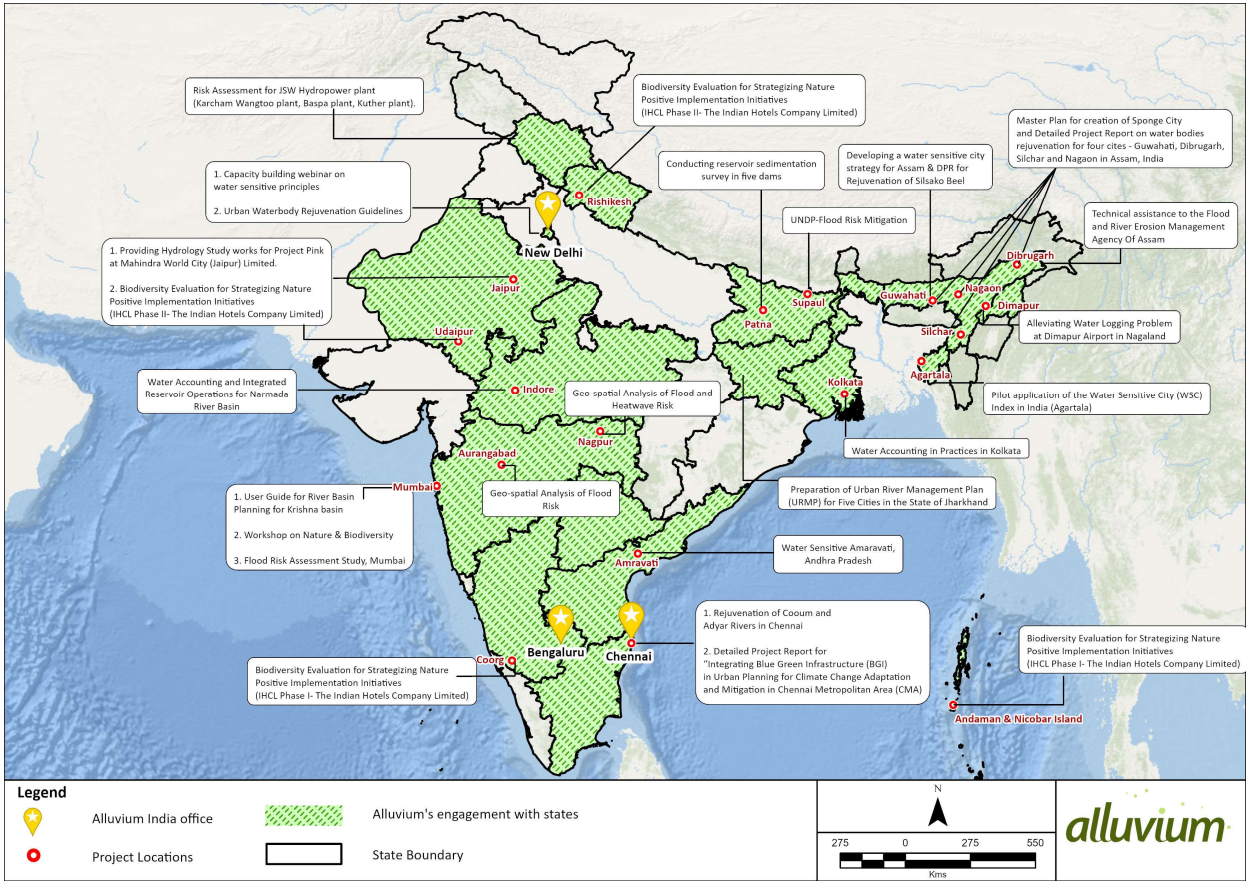
Alluvium Group in India

Alluvium Group has been active in India for close to a decade, with offices in New Delhi, Chennai and Bangalore, and a growing in-country team of scientists, engineers, economists, planners and environmental specialists.

Our India practice **supports some of the country's most pressing urban, water and climate challenges** — from integrated water management, flood resilience and climate adaptation to blue-green infrastructure, urban ecology and nature-based solutions.

India is now a significant part of Alluvium Group's international work across the Asia-Pacific, reflecting the depth of our long-term engagement and the scale of opportunities we see in supporting resilient urban growth.

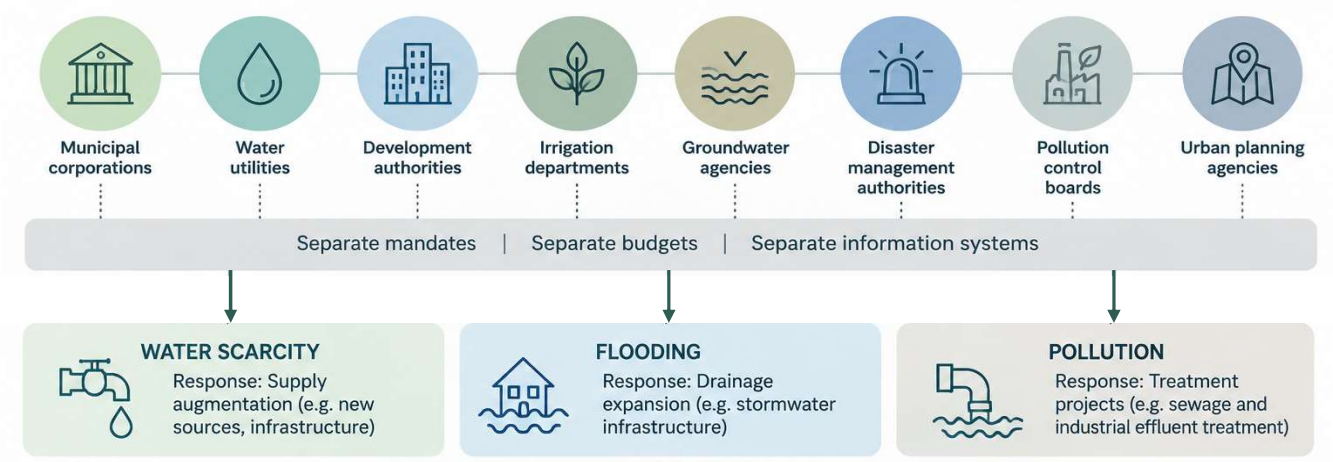
Through our multidisciplinary expertise and global technical experience, **we help Indian clients translate complex environmental and climate considerations into practical planning, design and implementation outcomes.**

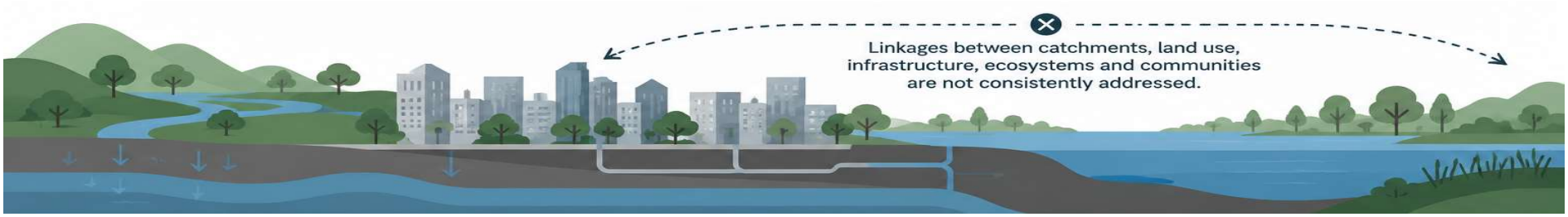


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The Urban Water Challenge

Many Agencies I Different Mandates I Fragmented Response

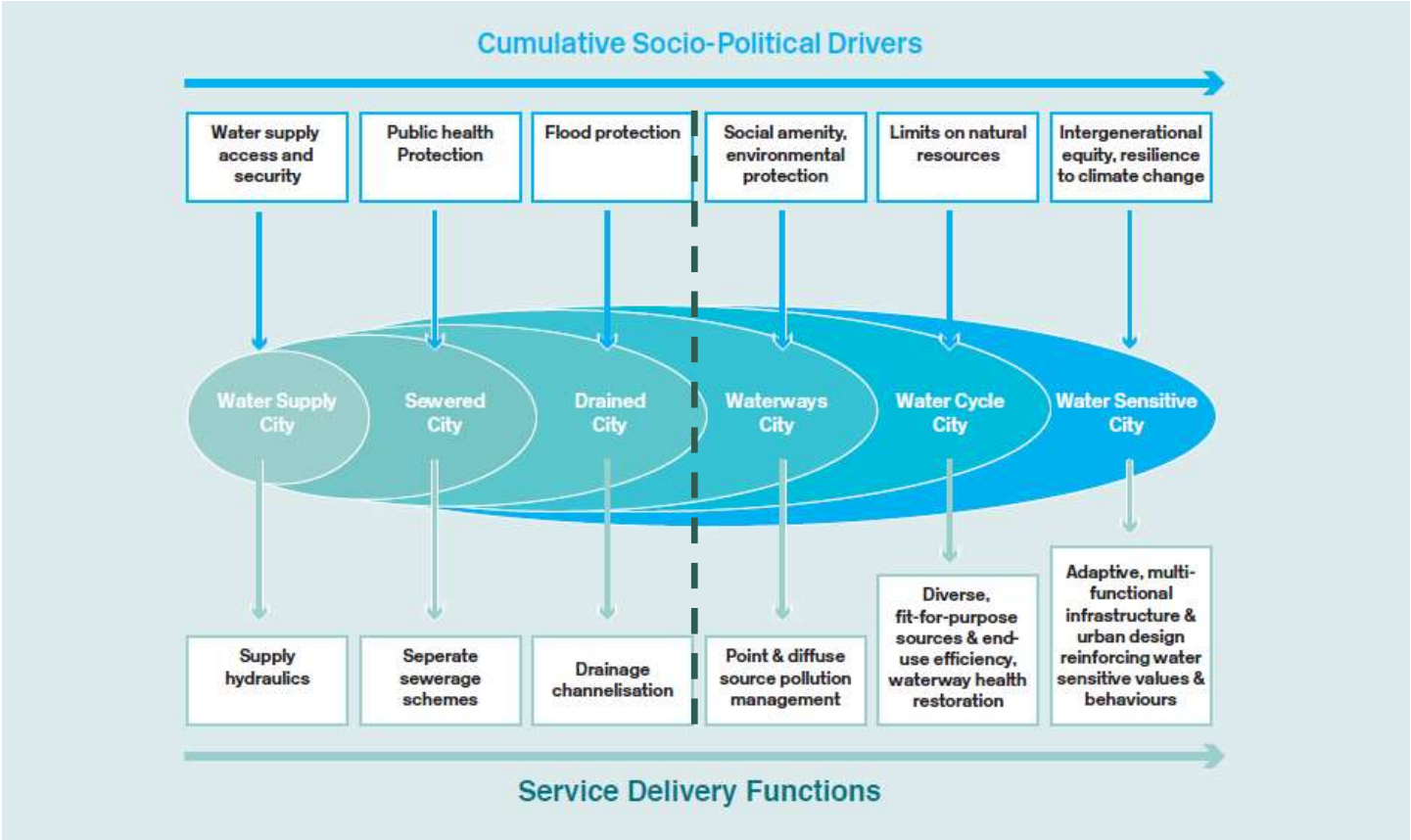




A more integrated, collaborative approach is needed to **manage urban water cycle as a whole**

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Urban Water Transition Framework



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Water Sensitive Cities

Principles • Outcomes

Vision: A water sensitive city of the future is a place where people want to live and work.

It is a place that (3 pillars):

- serves as a **potential water supply catchment (**
- provides **ecosystem services** and a healthy natural environment
- consist of **water sensitive communities** where citizens have the knowledge and desire to make wise choices about water.



Water Sensitive Outcomes

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Water Sensitive Cities Index

7 Goals • 34 Indicators



1. Ensure good water sensitive governance	2. Increase community capital	3. Achieve equity of essential services	4. Improve productivity and resource efficiency	5. Improve ecological health	6. Ensure quality urban space	7. Promote Adaptive infrastructure
1.1 Knowledge, skills and organisational capacity	2.1 Water literacy	3.1 Equitable access to safe and secure water supply	4.1 Benefits across other sectors because of water-related services	5.1 Healthy and biodiverse habitat	6.1 Activating connected urban green and blue space	7.1 Diverse fit-for-purpose water supply system
1.2 Water is key element in city planning and design	2.2 Connection with water	3.2 Equitable access to safe and reliable sanitation	4.2 Low GHG emissions in water sector	5.2 Surface water quality and flows	6.2 Urban elements functioning as part of the urban water system	7.2 Multi-functional water system infrastructure
1.3 Cross-sector institutional arrangements and processes	2.3 Shared ownership, management and responsibility of water assets	3.3 Equitable access to flood protection	4.3 Low end-user potable water demand	5.3 Groundwater quality and replenishment	6.3 Vegetation coverage	7.3 Integration and intelligent control
1.4 Public engagement, participation and transparency	2.4 Community preparedness and response to extreme events	3.4 Equitable and affordable access to amenity values of water-related assets	4.4 Water-related commercial and economic opportunities	5.4 Protect existing areas of high ecological value		7.4 Robust infrastructure
1.5 Leadership, long-term vision and commitment	2.5 Indigenous involvement in water planning		4.5 Maximised resource recovery			7.5 Infrastructure and ownership at multiple scales
1.6 Water resourcing and funding to deliver broad societal value						7.6 Adequate maintenance
1.7 Equitable representation of perspectives						

Not only a scorecard – **a facilitated process of evidence, dialogue and transition planning**

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Agartala : applying WSC Index

Evidence informed Start

- Evidence gathering and data analysis
- Pre-scoring

Desktop Review and pre-scoring

Multi-agency workshop

- 8 Departments representative
- Presenting the evidence

Shared evidence baseline

Indicator level Justification

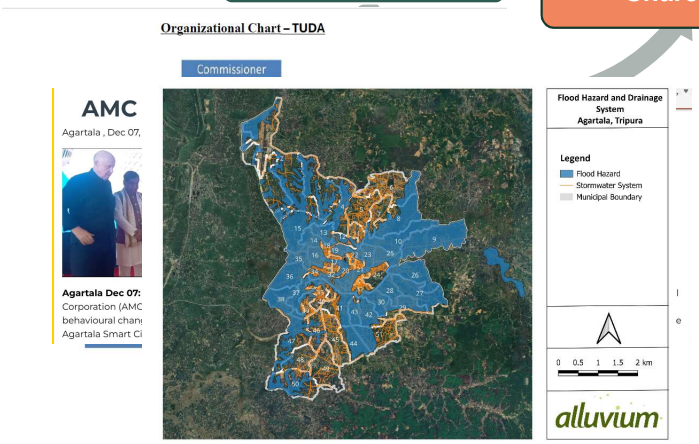
- Consensus for 34 indicators and 8 goals
- Final score established collectively

Consensus Scoring

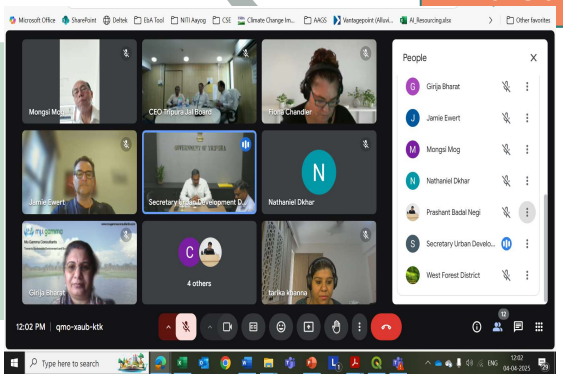
Diagnostic Synthesis

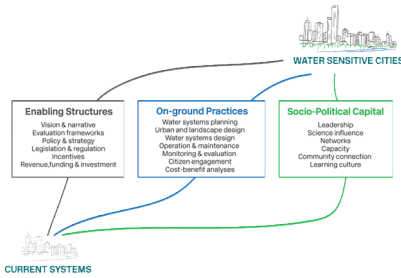
- Understanding of strengths and gaps

Transition Priorities for Agartala



Urban Development
Municipal Corporation
Tripura Jal Board
Disaster Management
Forest
Science & Technology
Smart Cities Limited
Tourism





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What Collaboration Process Revealed

Strengths

Flood management
Blue–green assets
Community engagement

Governance gaps

No dedicated integrated water forum
Agencies largely within separate mandates

Transition gaps

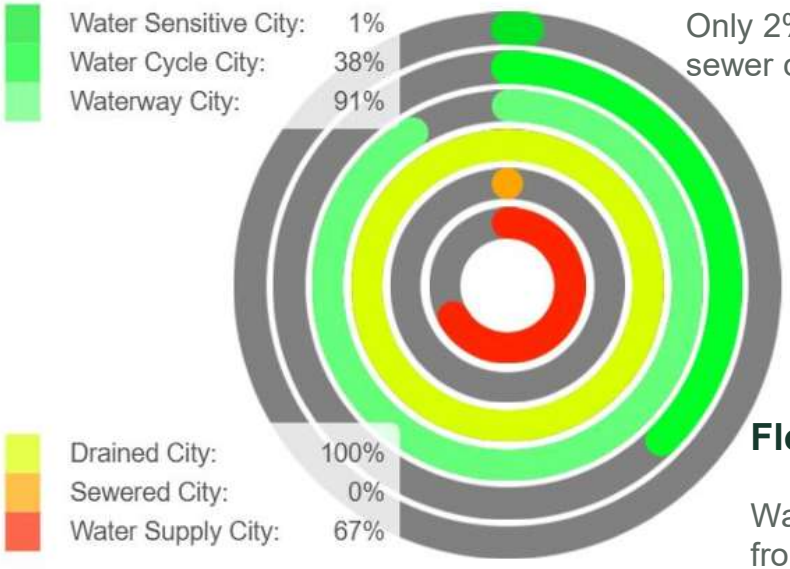
Sanitation
Water Source diversification
WSUD enforcement
Maintenance financing

Community capital

Women SHGs in user-charge collection and doorstep water testing
Disaster preparedness networks

From Diagnostic to Transition Pathway

Agartala city is strong in Drainage but early in water sensitivity

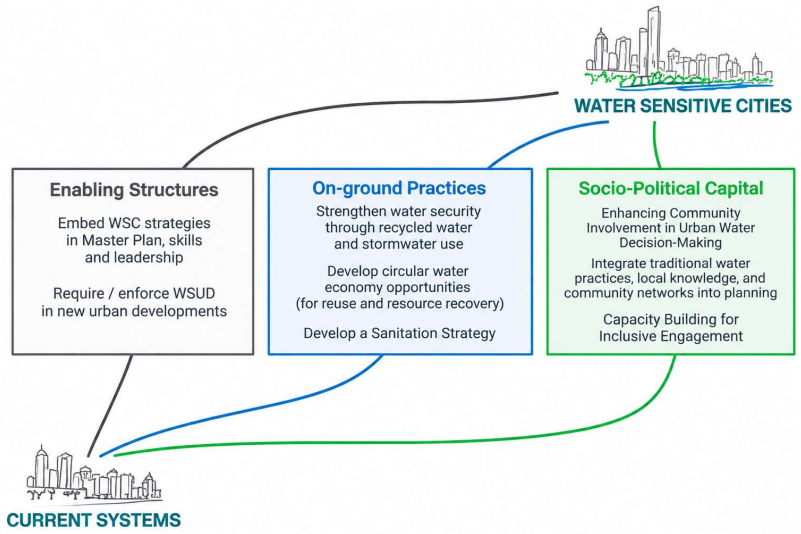


Sanitation gap

Only 2% of the HH have sewer connection

Flood performance

Waterlogging reduced from 2–3 days to 1–2 hours in severallocations



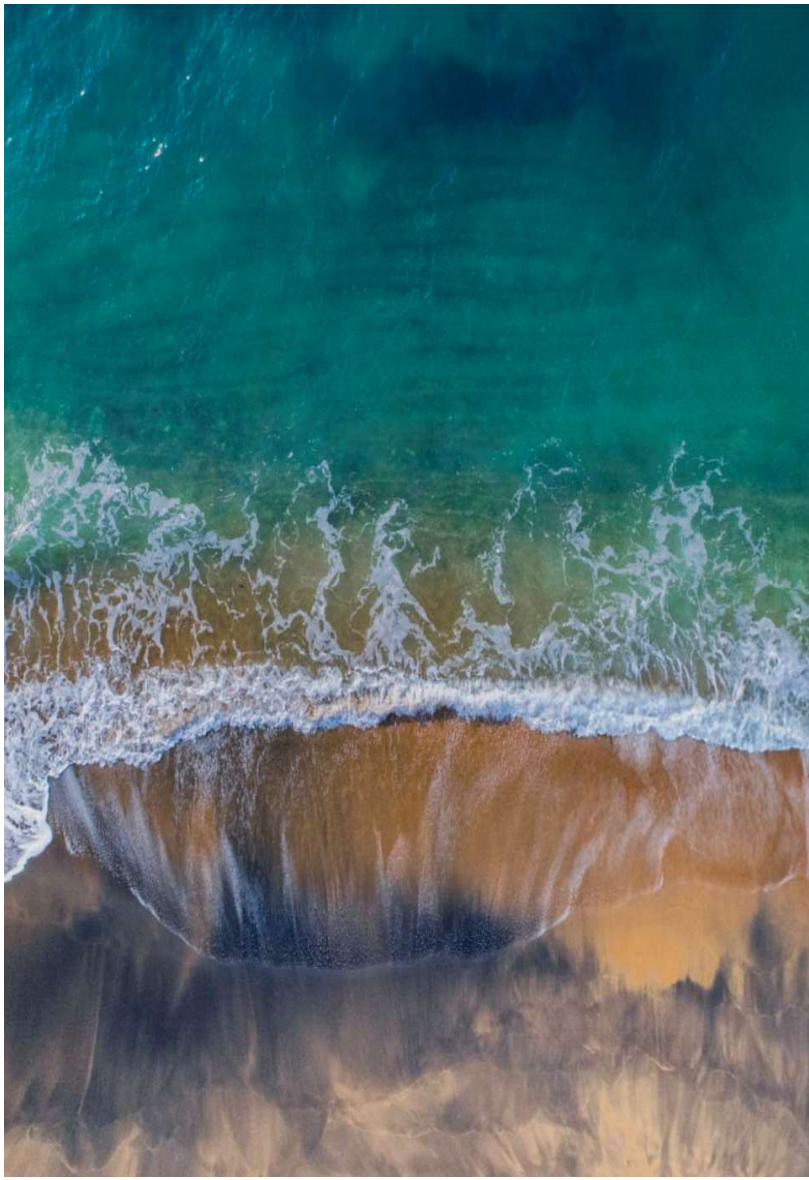
Multi-stakeholder partnerships are the mechanism that connects these pathways

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Five lessons for Indian cities

1. Benchmark together — even with incomplete data
2. Treat urban water cycle as one connected system - make trade-offs visible across the whole water cycle
3. Use benchmarking for transition planning – not just scoring
4. Move participation from consultation to co-design and stewardship
5. Embed IWM and WSUD in formal planning and investment instruments
6. Institutionalise multi-stakeholder collaboration - move beyond project-specific consultation towards formal inter-agency platforms

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Thank you



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