



# Water and Metropolitanisation

A bioclimatic city of lakes,  
Hyderabad comes full  
circle as Health Capital of  
the world

International  
urban workshop in  
Hyderabad, India,  
2024

**les Ateliers**  
maîtrise d'œuvre urbaine



# les Ateliers

maîtrise d'œuvre urbaine

Les Ateliers is a non-governmental organisation that brings together an international network of professionals, scholars and decision-makers in the field of urban development. Focused on the practice of urban management, the association organizes workshops imagined as sources of design and creativity aimed at providing local decision-makers with international perspectives and innovative proposals for their development challenges.

Founded in 1982, Les Ateliers was originally aimed at students and young professionals. In response to requests of local communities, governments and other partners, it expanded in 2005 to include workshops for experienced professionals and volunteers. Held both in France and internationally, these workshops provide local authorities with illustrated and innovative proposals for their strategic territorial and urban development projects. By bringing together diverse professions and cultures, these workshops also serve to challenge conventional learning models and encourage high-level exchanges.

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The International Urban Workshop "Water and Metropolitanisation - A Bioclimatic City of Lakes, Hyderabad Comes Full Circle as Health Capital of the World" took place from 25 November to 06 December, 2024, in Hyderabad. This workshop was organised at the request of the Municipal Administration and Urban Development (MA&UD) Department of the Government of Telangana, represented by the Musi Riverfront Development Corporation Limited, with the support of the French Development Agency and the French Embassy in India.

Following the Indo-French seminar co-organised by the Regional Economic Service of the French Embassy in Delhi in September 2022 and a preliminary mission in Hyderabad in July 2023, the workshop was formally commissioned by Mr Dana Kishore, Principal Secretary of MA&UD, Government of Telangana, in April 2024. This workshop is in line with the ongoing Musi Riverfront project, led by the Musi Riverfront Development Corporation Limited in Hyderabad and with the international impetus on water, notably the One Water Summit held in December 2024.

From 25 November to 6 December 2024, the on-site workshop brought together fifteen local and international experts from various disciplines for two weeks, committed to volunteering their time in Hyderabad for a unique collaborative process. After a few intense days of visits and collective work, the three teams of participants presented localised, strategic, and innovative ideas to steer the Hyderabad metropolis and its water ecosystems towards a resilient future. The workshop's methodology enables the participants to develop creative and forward-looking proposals, promoting a collaborative working platform that brings together elected officials, local stakeholders, organisations, businesses, and civil society representatives to address the city's major challenges. The final proposals of the workshop teams were presented during the final restitution on 6 December to an international and local panel of guests of honour, elected representatives, and experts.

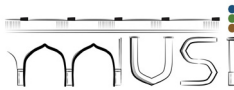
This synthesis document encapsulates the transversal analysis and conclusions developed during and after the international workshop.

## THE WORKSHOP'S TEAM

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All images from Les Ateliers, except when indicated

Partenaires de  
l'atelier

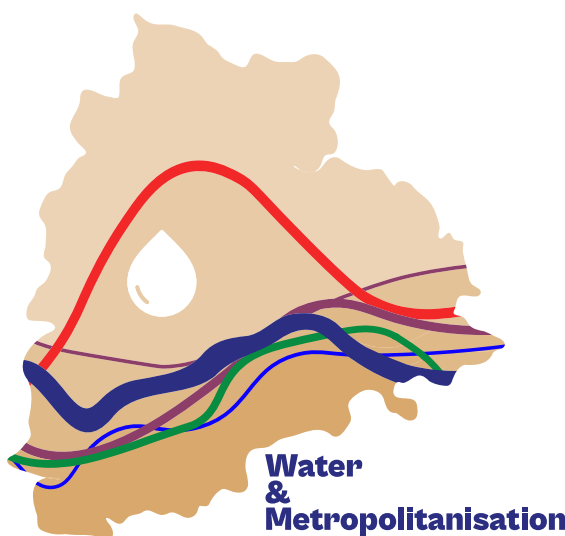


Partenaires  
structurels des  
Ateliers



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Health Capital of the  
world



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THE PROGRAMME OF  
THE WORKSHOP

PREPARATORY ROUNDTABLES (ONLINE)

16 September 2024, 10 October 2024, 14 November 2024

FIELD VISITS AND CONFERENCES

From Monday 25 November 2024 to Wednesday 27 November 2024

TEAMWORK

From Thursday 28 November 2024 to Thursday 5 December 2024

EXCHANGE FORUM

Friday 29 November 2024 afternoon

FINAL PRESENTATIONS AND  
DEBATE OF THE PANEL

Friday 6 December 2024

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# A bioclimatic City of Lakes: Reviving a Threatened Ecosystem



Hyderabad, capital of India's Telangana State

# From riverfront to ecosystem: a holistic vision for Hyderabad

## Hyderabad: A Bioclimatic Legacy at Risk

Hyderabad, historically cherished as the City of Lakes, is built on a bioclimatic water ecosystem, now threatened by irreversible changes caused by rapid urbanisation.

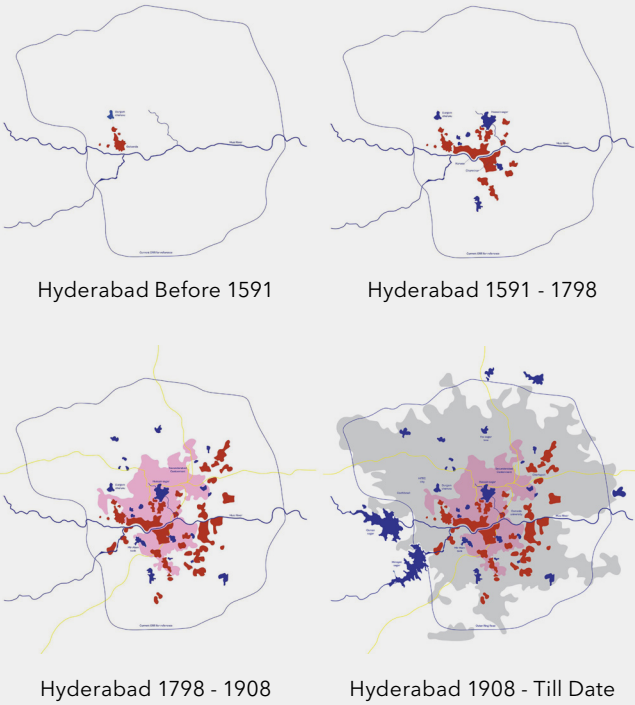
The workshop aims to identify the key actions for Hyderabad to reclaim its legacy through systemic ecosystem restoration and a data-driven, community-led urban model, positioning itself as the World Health Capital, a pioneering city reviving its essence and thriving with 20 million inhabitants.

Hyderabad, the thriving capital of India's Telangana state, is one of the country's fastest-growing megacities. Designed on bioclimatic principles, it historically managed water through an interconnected system of lakes, tanks, and stepwells, creating a green and liveable microclimate despite the arid conditions of the Deccan Plateau.

At each stage of urbanisation, new lakes and tanks were built to ensure a continuous water supply for drinking and agriculture, making the city self-sufficient. However, rapid expansion driven by the IT boom has placed immense pressure on this system. With no natural geographical barriers limiting growth, the real constraint is now the sustainable and responsible management of water resources and mobility – balancing environmental impact, energy costs and urban liveability.

With over 11 million people, Hyderabad is expected to be one of the 30 most populous cities in the world by 2030. The city's bioclimatic legacy is gradually depleting and degrading, leaving it vulnerable to the challenges of explosive urban expansion well beyond its administrative limits.

Hyderabad has already witnessed a substantial loss of its lakes, with over 3000 water bodies disappearing in the past two decades. Encroachments, lake infill for real estate development, and pollution have severely disrupted the city's water systems, threatening its long-term resilience and quality of life.



Mapping Hyderabad's growth: A city shaped by its lakes



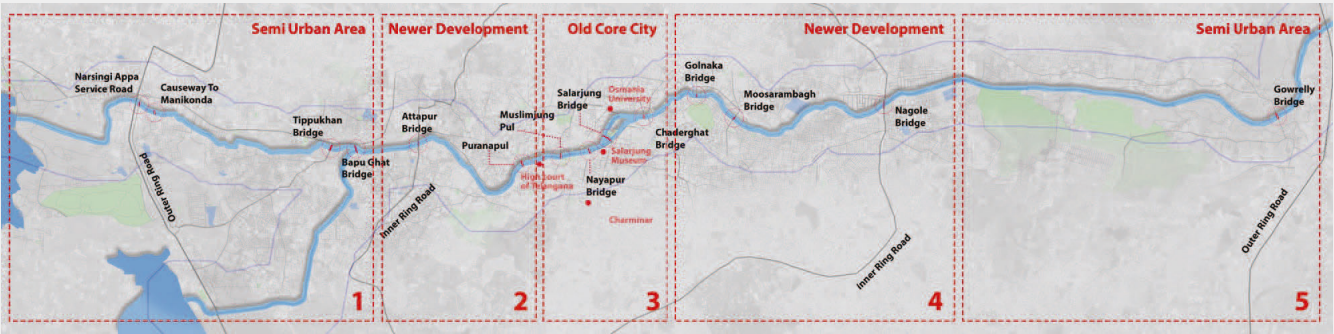
## Musi Riverfront Development: Launchpad for the Workshop

The Telangana government’s Musi Riverfront Development Project is a major initiative to restore the heavily polluted Musi River in Hyderabad. Aimed at creating an eco-friendly and accessible space, the project seeks to mitigate pollution, enhance urban infrastructure, and transform the river into a tourism and economic hub for both residents and visitors. Key objectives include pollution control, improving riverfront access, reduced traffic congestion, and boosting the local economy.

This project served as the starting point for the workshop, where the Telangana government tasked Les Ateliers to explore innovative solutions and strategies for revitalising the Musi Riverfront, with a focus on reconnecting the city to its water heritage.

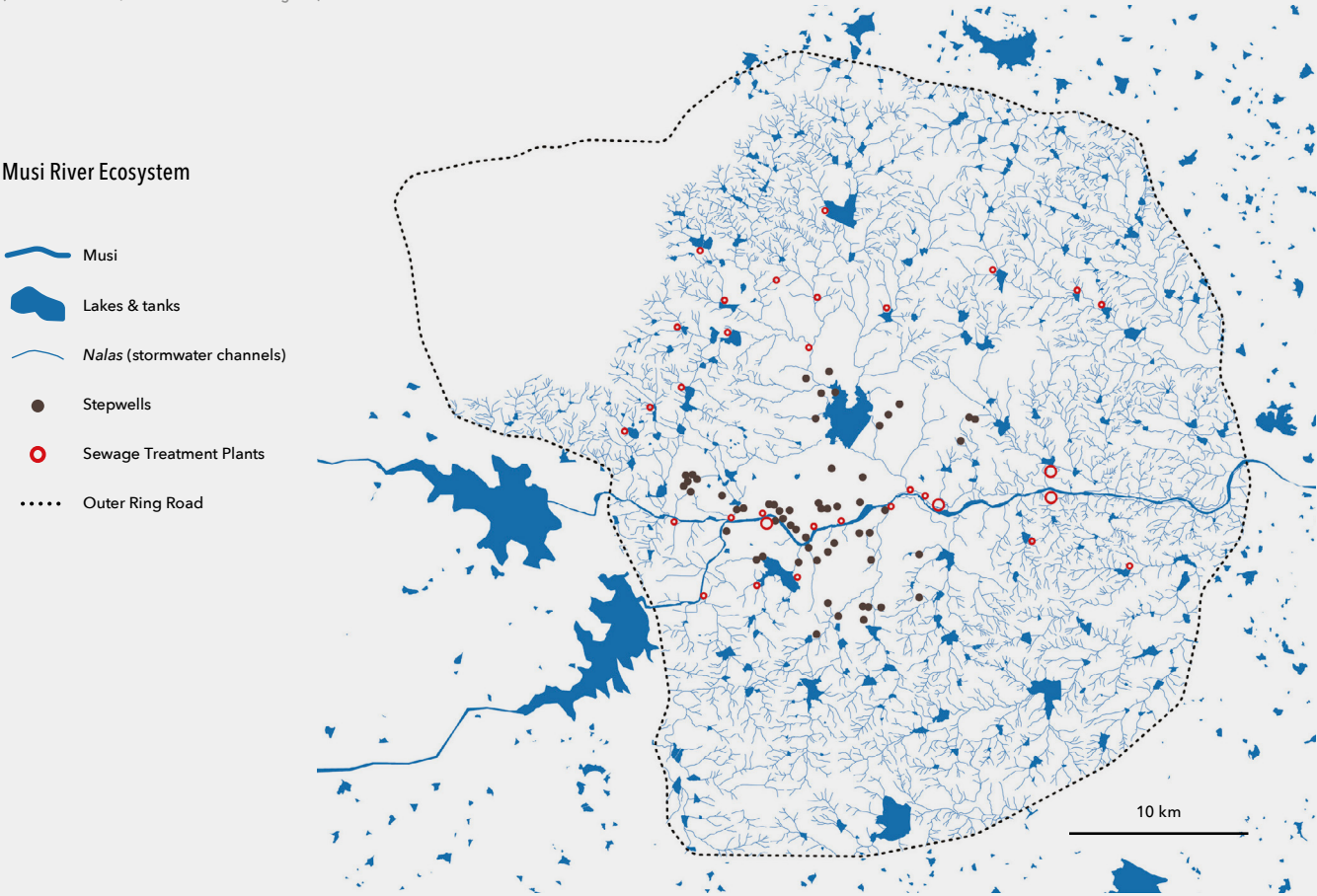
## The Case for Reframing the Musi Riverfront Rejuvenation Project as the Musi Ecosystem Restoration Project

While the initial focus was on the riverfront, the workshop recognised the need for a broader approach. The river is part of a vast ecosystem that requires holistic restoration, starting upstream. Prioritising the health of the entire network of interconnected lakes, ponds, tanks, canals, wetlands and stepwells is essential to revitalising the river and its banks. The Musi Riverfront Development Project presents an opportunity for Hyderabad to unlock the immense functional, social, and ecological potential of its water heritage. By restoring and reconnecting its water systems through visionary leadership and community engagement, Hyderabad can build the self-reliance and resilience needed to tackle 21st-century challenges.



Musi Riverfront Development Project - A 55 km stretch across Hyderabad

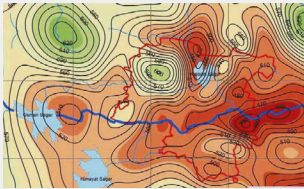
(Source: MRDCL, Government of Telangana)



Natural



Surface water networks of rivers, lakes & wetlands



Groundwater networks

Manmade



Surface water infrastructure of ponds, tanks & canals



Inverted water architecture (stepwells)

Intangible

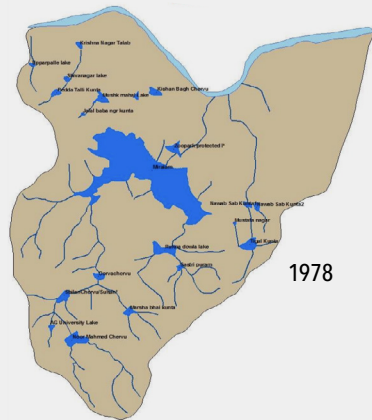


Social, cultural and spiritual importance of water bodies for communities



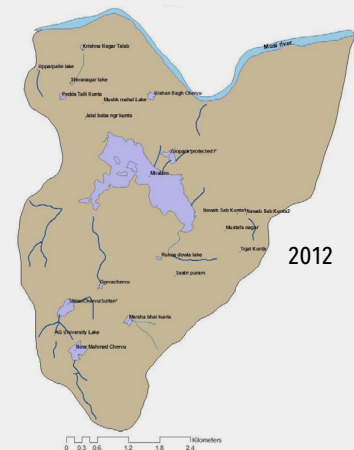
Digital innovation for micro level urban water governance

The 3 levels of Hyderabad's water heritage



Shrinking drainage catchment of the Mir Alam Meso-catchment (1978 & 2012)

(Source: SACI waters, 2012)



- drainage
- river
- lake / tank
- meso catchment

# Reimagining Hyderabad: integrating water, mobility, and resilience

## The Workshop Framework

The workshop adopts a multi-scale framework, addressing hyper-local conditions within the broader metropolitan context. Using the Musi Riverfront Project as a starting point, it expands its scope to the Hyderabad Metropolitan Region, tracing the river's network from the *nalas* that feed it to the lakes in its drainage basin and areas beyond the Outer Ring Road, both upstream and downstream.

## Water Challenges in Hyderabad: Pollution, Shrinking Bodies, and Cultural Loss

Urbanisation and unchecked development have severely degraded Hyderabad's water systems, pushing them toward collapse. Expanding urban areas have encroached upon green spaces, disrupting the city's once-integrated drainage networks. Groundwater levels are depleting, lakes are shrinking, and urban heat islands are intensifying.

Pollution from industrial waste, domestic sewage, and heavy metals has contaminated both riverine and lake systems, triggering waterborne diseases and endangering aquatic life. Water bodies that once provided flood control, drinking water, and recreation are now fragmented, depleted, and encroached upon. Beyond environmental consequences, the socio-cultural heritage tied to these water bodies—once vibrant communal spaces—is eroding due to insufficient protection and evolving urban pressures.

## Mosaic City: Urban flow and connectivity

Hyderabad's urban fabric is uniquely shaped by its topography and watershed, distinguishing it from monocentric or polycentric cities. The city's development has historically been closely tied to its water networks, from the Musi River at the metropolitan scale to smaller lakes, *nalas*, ponds, and stepwells at the neighbourhood level. These water bodies have not only shaped the city's physical landscape but also its social and cultural fabric.



As the water bodies at the small scale disappear due to unchecked real estate and infrastructure development, the city's delicate balance of water governance is threatened. The loss of local water networks undermines community resilience, impacting everything from water availability to the quality of life in Hyderabad's diverse neighbourhoods. A more integrated approach to governance is needed to protect and restore these essential resources at multiple scales.

Hyderabad's mobility structure reflects its distinctive urban layout. The city features a primary network of waterways, roadways, and metro lines but lacks a central business district and a cohesive secondary road network. This absence of secondary roads has resulted in a city of narrow, tree-lined streets. Rather than being a constraint, these streets enhance walkability and contribute to Hyderabad's unique charm and liveability.

In turn, this urban structure opens up significant opportunities for micro-mobility. With many daily commutes under 10 km, the city has the potential to prioritise last-mile connectivity, reducing reliance on heavy infrastructure. Thoughtfully scaled micro-hubs can link neighbourhoods directly to the broader metropolitan transport network, reducing congestion, improving liveability, and supporting ecological sustainability.

The combination of water governance and micro-mobility can significantly enhance Hyderabad's urban resilience. With thoughtful integration, the city can safeguard its water ecosystems and strengthen its communities, ensuring a high quality of life for its residents.

**Social Resilience and Local Governance**

Water availability and management have shaped Hyderabad, influencing both community resilience and water resilience. Resident Welfare Associations (RWAs) play a key role in urban governance, acting as a bridge between residents and municipal authorities while engaging in city planning, public health, and social welfare. RWAs have become vital stakeholders in governance, often referred to as the fourth tier after union, state, and municipal authorities. Hyderabad's digital culture presents immense potential for strengthening local governance, enabling collaboration between public bodies, private operators, universities, and civil society. However, while digital innovation can enhance participatory governance, it also raises concerns around data privacy and control that must be carefully addressed.



Hyderabad's stepwells, once central to community rituals (The Forgotten Stepwells of Telangana)



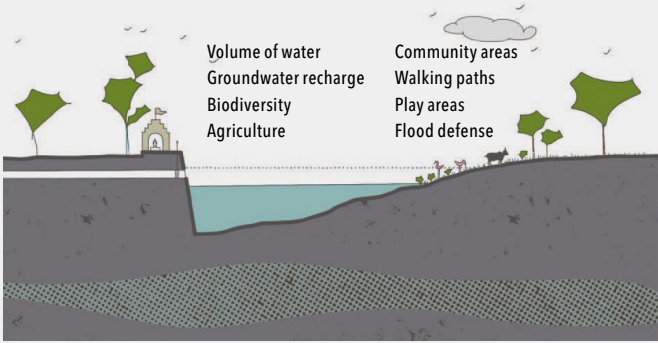
Residents queuing up to collect water from a water tanker



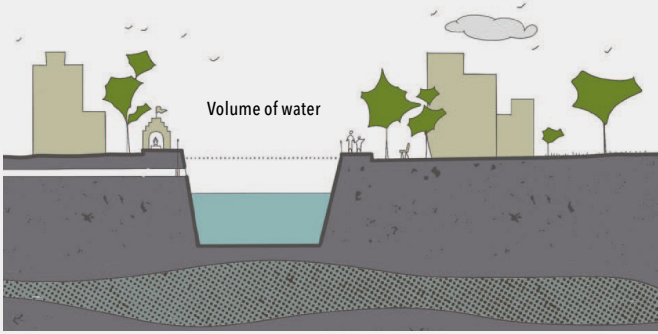
Hyderabad's typical neighbourhood street



Construction of flyovers to accommodate increasing traffic flow  
(Source: Telangana Today)



Before beautification: Lake with foreshore (littoral zone)



After beautification: Lake without foreshore (littoral zone)



A typical *Hyderabad* settlement at the edge of a tank



Durgum Cherevu, a historic lake, now a backdrop to Hyderabad's IT hub, Hitech City

## Safeguarding Hyderabad's Water Ecosystems Amid Urban Growth

Increasing land-use pressures and urban development in Hyderabad have significantly reduced agricultural lands around tanks, encroaching upon littoral zones and converting natural areas into built-up spaces. This disrupts the city's drainage network, shrinking water reserves and exacerbating flood risks. The dumping of construction debris and untreated sewage contaminates freshwater lakes and surface ditches. Beautification projects often compromise the ecological integrity of lake shores by shrinking perimeters, removing littoral zones, and raising the Full Tank Level to maximise housing potential. Rigid paths erected around tanks disregard the importance of gently sloping littoral sides, which are crucial for biodiversity, water purification, aquifer recharge, and mosquito control. These projects discount the importance of extended lake areas for flood defense and other ecosystem services, reducing water bodies to superficial ornaments. Water scarcity now compels Hyderabad to pump water from distant rivers, increasing costs and energy consumption. Adopting circular economy principles, such as efficient wastewater treatment, could help Hyderabad become more self-sufficient in water.

## Hyderabad: World Health Capital

Hyderabad aspires to be a global metropolis, yet it remains deeply rooted in its local heritage. Economic growth and urban branding alone won't guarantee a high quality of life; health and wellbeing must take centre stage in urban planning, especially considering the ongoing water pollution – largely linked to the pharmaceutical industry – as well as the risks associated with water scarcity and flooding. These challenges not only threaten the health of the city's residents but also harm its reputation, as they are increasingly recognised as critical issues. The city's unique identity, shaped by its interconnected lakes, canals, and informal communities, is integral to its character.

By preserving this essence and restoring water systems to improve quality of life for all, Hyderabad can evolve into a bioclimatic city that balances prosperity, water security, and community resilience – reclaiming its vision as the Health Capital of the World, where health is not just an industry but a goal.



## Holistic regeneration

How can we creatively reconstruct the narrative of Hyderabad's water legacy to catalyse an ecological, social, and functional renaissance of its water systems?

How can we restore the health of Hyderabad's river catchment ecosystem in a holistic, integrated manner?

How can we attract sustainable growth and development while making the city more attractive and inclusive?

## Social resilience

How can we protect Hyderabad's neighbourhoods from being overwhelmed by large-scale infrastructure projects?

How do we ensure that arterial networks remain well-connected to neighbourhoods while preserving the pedestrian-friendly character of residential streets?

How can we maximise the potential of neighbourhoods around water bodies to promote social cohesion, local leadership, and community dialogue?

What governance strategies can enable communities to connect to the metropolitan scale?

## Ecological resilience

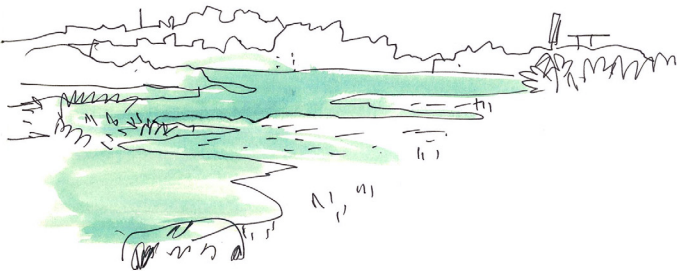
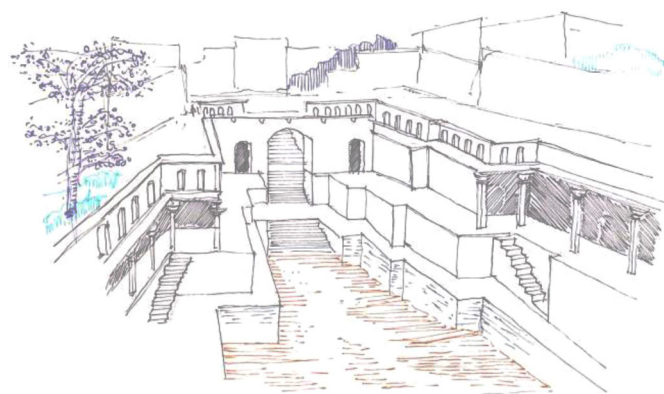
How can nature-based solutions be institutionalised into urban planning policies within the Indian context, and what role can community engagement play in their successful implementation?

How can high-tech innovations and low-tech solutions be combined effectively to address Hyderabad's water crisis, restore natural ecosystems, and improve liveability?

How can urban farming contribute to the preservation of nature in Hyderabad's metropolitan area while aligning local community aspirations with global visions of the city's future?

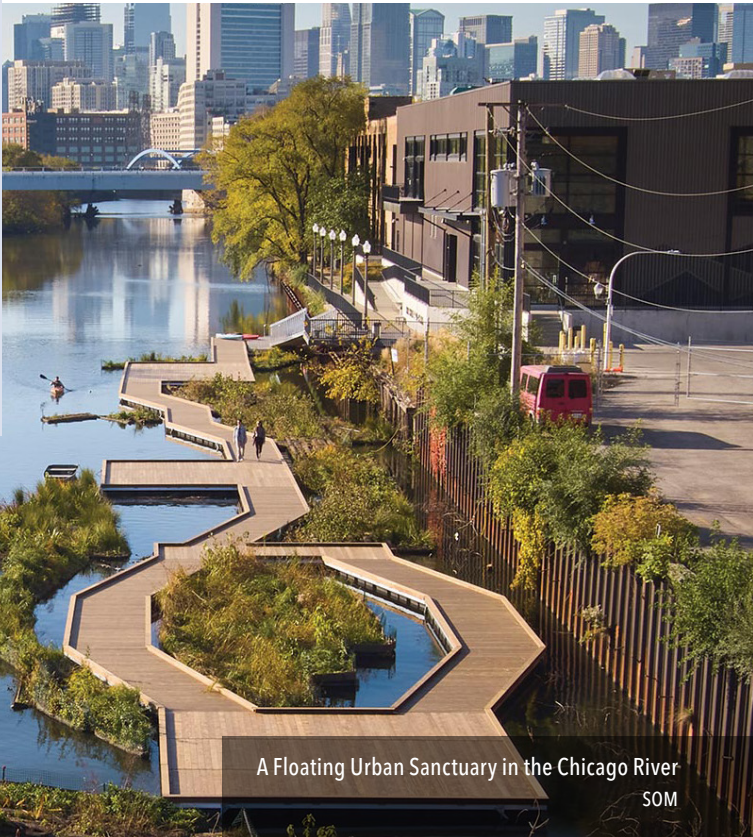
## Critical Inquiries for Exploration

As part of the collaborative workshop process, the pilots engaged teams in addressing key questions that would inform the direction of Hyderabad's transformation. Once known as the City of Lakes, Hyderabad now stands at a crossroads, where rapid urban expansion threatens its bioclimatic water ecosystem. The workshop aimed to identify the most effective levers for transforming Hyderabad into a resilient, thriving eco-city of 20 million people by 2050, with a focus on health, sustainability, and digital innovation. The goal is to create a "Healthy Hyderabad" - a city that balances ecological restoration, community wellbeing, and urban growth.



# Laying the foundations: roundtable discussions

Ahead of the workshop, three roundtable discussions (September–November 2024) were held to explore critical questions on urban water resilience, governance, and ecosystem restoration. These sessions brought together both international and local experts, offering a broader perspective on the city’s challenges and opportunities, and ultimately informing the direction of the workshop.



A Floating Urban Sanctuary in the Chicago River  
SOM

## Round Table 1

# Waterfront regeneration: beyond beautification

The first roundtable delved into the transformative potential of riverfront projects to restore ecosystems, enhance urban resilience, and create vibrant public spaces that benefit both the city and its people. It challenged the perception of riverfront revitalisation as merely aesthetic, emphasising the need for systemic, sustainable interventions.

Key questions addressed included how Indian and global experiences can guide the holistic restoration of river catchments, the role of natural systems and living shorelines in building urban resilience, and ways to ensure inclusivity so that all social groups benefit from such initiatives.

Insights from riverfront projects in Chicago, Sabarmati, and Pune highlighted diverse approaches to riverfront development. The Sabarmati project focused on urban regeneration, creating a monumental cultural asset and public space on a metropolitan scale, with the river having been heavily modified through concrete embankments and extensive riverfront development. In contrast, Pune’s approach

emphasised ecological restoration and rewilding, integrating natural systems to promote environmental resilience.

Discussions on the Yamuna River in Delhi underscored the significance of balancing urbanisation with the livelihoods of riverside communities. The role of urban farming emerged as a crucial element in preserving natural ecosystems, supporting local food security, and strengthening community connections to waterways.

Key takeaways included the necessity of developing unique strategies tailored to Hyderabad’s specific context. Effective communication between stakeholders and local communities was emphasised as essential to ensuring equitable outcomes.

This roundtable reinforced that successful riverfront regeneration requires the creation of urban spaces that restore ecological balance while establishing effective channels of communication between all stakeholders. This approach ensures that both people and nature’s needs are met.



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Swati Janu  
Architect,  
Social Design  
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Round Table 2

Sponge cities and water ecosystems

The second roundtable focused on nature-based solutions for Hyderabad, exploring the role of water ecosystems - particularly tanks and their littoral zones - in groundwater recharge, flood defence, biodiversity, and recreation. Experts discussed strategies for locally managing stormwater, reducing soil sealing, preserving ecosystems, and reusing wastewater.

A key highlight was Kongjian Yu’s Sponge Cities concept, which advocates for slowing, sinking, spreading, and storing water locally. This approach contrasts with the current practice of channelling rainwater into drains, where it is lost instead of being retained and utilised.

Urban ponds were identified as underutilised assets, and the inefficiency of centralised storm-water systems in monsoon-dependent cities like Hyderabad was addressed.

Greywater treatment and reuse were highlighted as crucial for reducing freshwater demand and improving local wastewater management. Urban agriculture was recognised as a key solution to enhance water resilience, offering socio-economic benefits and contributing to food security.

The panel concluded that conserving water bodies is most effective when linked to local economic activities, such as urban farming and responsible tourism, through community engagement and long-term maintenance.



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"Pondman"  
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Kongjian Yu  
Architect  
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Kalpana Ramesh  
Founder of the  
Rainwater Project





Along the Hakimpet lake  
Florent Chiappero

Round Table 3

Communities and Water Networks

This roundtable explored the intricate relationship between communities and water systems, emphasising how water availability and management impact urban life and access to essential services. Hyderabad’s urban fabric has been shaped by its topography and water networks, from stepwells, tanks, and ponds at the neighbourhood level to larger lakes and the Musi River at the metropolitan scale. As local water bodies disappear, both social ties and community resilience are being eroded. Preserving neighbourhood-level water networks has become critical for ensuring community well-being and water resilience. Failing to address this risks neglecting the smaller, yet vital, networks that underpin local life in favour of metropolitan-scale systems.

It was noted that urbanisation has disrupted the intricate connections between lakes, canals, and drains, weakening both natural ecosystems and social networks. However, small-scale placemaking and community-driven initiatives hold potential to make a meaningful impact, enabling residents reconnect with and protect nearby natural resources.

The role of technology was also highlighted. Digital tools such as apps and crowd-sourced data can monitor water supply, wastage, and shortages, empowering communities to actively manage and preserve Hyderabad’s water heritage.



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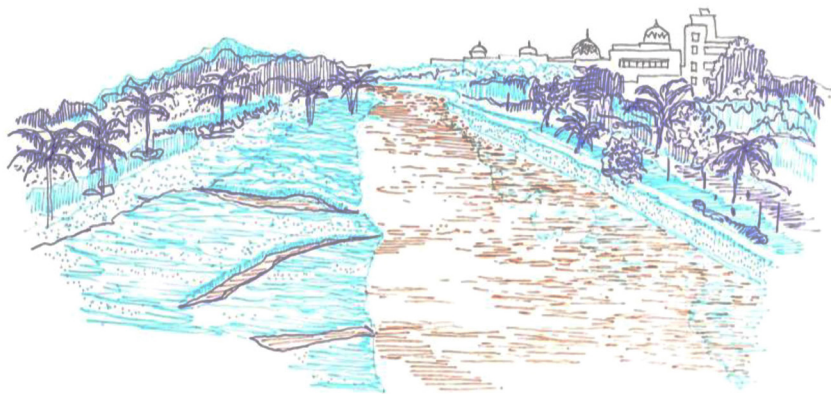
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# Aquapolis: Strategic Proposals for Renaissance



# Team Aquapolis



### Vision statement

Rebranded as *Aquapolis*, Hyderabad embraces its water heritage as central to its evolution, seamlessly linking the city's legacy as the City of Lakes with its water-driven, climate-resilient future. This reimagined identity positions water as both a vital resource and a defining element of urban life.

### Approach

#### Shaping Hyderabad's water renaissance

Team *Aquapolis* builds on Hyderabad's rich legacy as the City of Lakes and Gardens, positioning it as a visionary City of Water – a forward-looking biophilic urban model composed of interconnected clusters, with biodiversity at the forefront and digital innovation driving transformation.

### Core actions / strategic lines

- › **Biodiversity Targets** – Prioritise the reintroduction of fish and birds as key indicators of ecological health, shifting the focus from conventional urban metrics to the life-sustaining vitality of natural ecosystems, placing it at the forefront of urban planning.
- › **Addressing Sewage** – Implement a combination of nature-based and low-tech solutions, such as constructed and floating wetlands in *nalas* and the river, to reduce organic pollution as the final step after sewage treatment plants and septic tank systems.
- › **Addressing Garbage** – Adopt a holistic approach to waste management through coordinated governance, cross-departmental collaboration, and citizen engagement to ensure effective disposal, source segregation, and continuous monitoring, while formalising the role of informal sector workers.

### Governance & public engagement

- › **Perception & Preference Survey** – A live online survey was conducted during the workshop to capture Hyderabadis' perceptions (both positive and negative) of the city's water bodies and their preferences for River Musi's design and identity.
- › **"Water Ripple" App** – *Water Ripple* is an app designed to keep Hyderabadis informed about the city's water health. It provides real-time updates on water quality, sends alerts for flooding risks, and encourages community participation by allowing users to monitor and report issues, share photos, and engage in local water protection efforts.

### Key proposals

- › **Chaderghat Hub** – Reclaim the historic Imli Van as an urban forest, creating a vibrant ecological and recreational space at Chaderghat Island, including a museum and cultural hub.
- › **Urban Lakes** – Introduce multifunctional urban lakes to act as flood mitigation reservoirs, recharge underground aquifers, provide urban cooling and replenish the Musi River.





# Team the Water Speaks

## Vision statement

A thriving economy depends on a healthy ecology. Hyderabad embraces an ecology-first philosophy, shifting from exploitative models to revitalising its water ecosystem and reconnecting society with its water heritage.

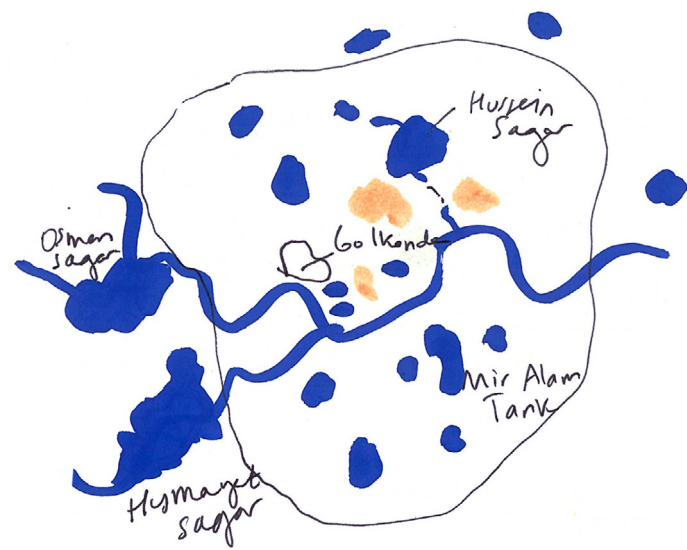
## Approach

### Cultivating Ecological and Social Well-being

Team *The Water Speaks* reimagines Hyderabad as a tranquil ecopolis, prioritising ecology, health and well-being to attract global talent while ensuring inclusive, community-driven efforts where placemaking and ecological restoration go hand in hand.

## Core actions / strategic lines

- › **Clean and Connected Water Bodies** - Rehabilitate water bodies to create a healthy, interconnected aquatic system.
- › **Green and Blue Corridors** - Create ecological pathways along the city's waterways, supporting biodiversity, recreation and urban farming.
- › **Active Mobility and Quality Public Spaces** - Promote walking and cycling with well-designed public spaces that encourage active lifestyles.
- › **Community Participation** - Build trust and inclusivity by engaging residents as active stakeholders in urban planning and ecological restoration.



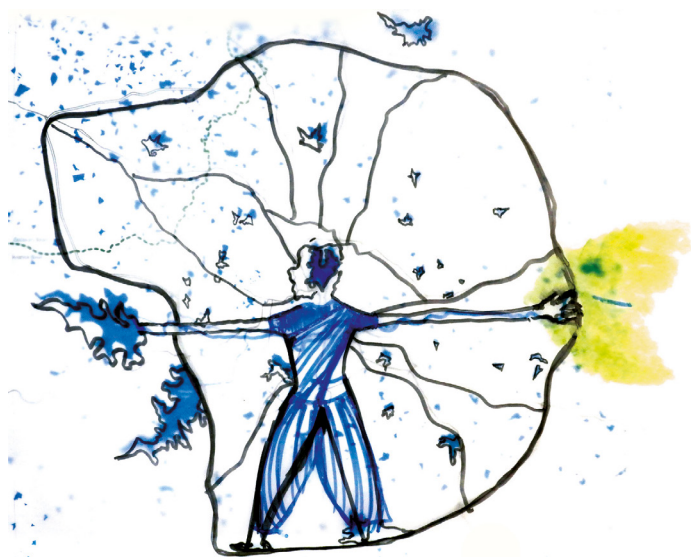
## Governance & public engagement

The House of Common Waters - Create an experimental hub anchored around a lake bringing together interdisciplinary teams, communities, and stakeholders to engage in participatory water management and help regenerate the surrounding public spaces.

## Key proposals

- › **City Centre**
  - Extend beyond the 50m buffer zone to establish a heritage and eco-zone along the Musi River Corridor. This area would feature a tramline, active mobility corridors, public recreation spaces, amenities, and an underground metro line.
  - Gradually increase urban density, starting with low-rise public buildings and amenities near the riverbanks, transitioning to higher-density, high-rise apartment blocks further inland from the river zone.
- › **Mir Alam Tank and its watershed up to the Musi River**
  - Reconnect the Mir Alam Tank watershed to the Musi River through a nala rejuvenation programme, strengthening green-blue corridors and restoring ecological links.
  - Balance development and conservation by establishing primary roads to improve connectivity, while preserving the local character of neighbourhoods.
  - Map challenges and opportunities to develop a comprehensive, metropolitan-scale plan that integrates seamlessly with the surrounding urban fabric.

# Team Guardians for 7 Generations of Musi



## Vision statement

Hyderabad's historic water bodies are reconnected through a regenerative system, revitalising urban infrastructure and celebrating the city's deep cultural relationship with water. Through ecological stewardship and intergenerational responsibility, the city's water heritage is restored for future generations.

## Approach

### Crafting a Regenerative Water System for Future Generations

Team *Guardians for 7 Generations of Musi* leverages Hyderabad's rich water heritage to build a resilient, regenerative system grounded in a whole-systems, circular economy model that enhances the city's infrastructure and cultural connections to water. The approach combines traditional ecological wisdom with innovative green, grey, and blue infrastructure solutions.



## Core actions / strategic lines

- › Framing a Water Vision
- › Grey-Blue-Green Solutions
- › Leveraging Existing Systems
- › Placemaking and Engagement
- › Education and Awareness
- › Redefining STPs
- › Strengthening the Economy
- › Circular Economy

## Governance / public engagement

Governance is built on a participatory model where communities, industries, and government share responsibility for regenerating and maintaining local water bodies.

- › Collaborative Public-Private Partnerships (PPP)
- › Community Custodianship
- › Awareness Campaigns

## Key proposals

- › **Regenerative Infrastructure** – Design systems that integrate grey (urban infrastructure), green (vegetation, trees, wetlands), and blue (water bodies) systems for flood mitigation, water retention, and pollution management.
- › **Water Quality Indicators** – Implement a three-tiered water quality system – smell, swim, and drink – to track improvements over time and ensure transparency.
- › **Cultural Heritage Integration** – Create a cultural and recreational trail connecting Hyderabad's landmarks and water bodies, with spaces for ceremonies and rituals that honour water as sacred.
- › **Waterbody Restoration Projects** – Prioritise the restoration of relatively healthy lakes, *nalas*, and riverfronts, focusing on their ecological and cultural value, to bring them into active public use before significant damage occurs.
- › **Sewage and Wastewater Treatment** – Redesign sewage treatment plants as "Sewage Theme Parks" that integrate ecological functions like nutrient recovery and water reclamation, while adding a playful, engaging element to urban water regeneration.



# The jury's work

## Vision statement

The jury envisions Hyderabad as a model city, where the grandeur of its past, particularly the iconic Musi River, is revived, setting a new global standard for urban water management. In restoring the river's historical splendour, ecological balance is achieved, and water suitability for human consumption is ensured, making Hyderabad the first South Asian city to treat 100% of its water for drinking.

**Dana Kishore** (Principal Secretary of the Telangana MAUD) highlights the Musi River's historical significance, likening the Puranapul Bridge to Paris's Pont Neuf. Inspired by this vision, Prof. **B. Venkateswara Rao** (environmental expert) expresses the hope of revitalising the river to once again irrigate lands and provide drinking water.

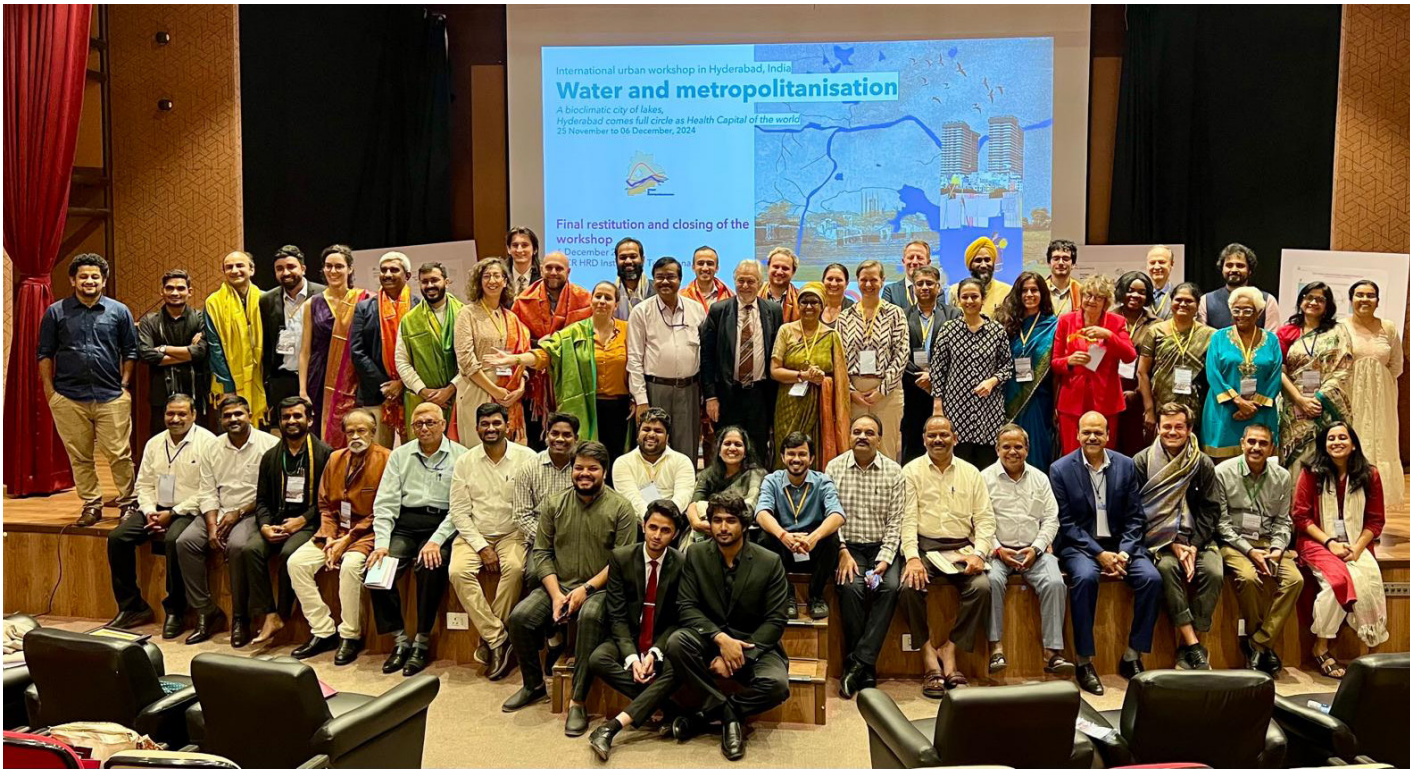
**Rohit Chandragiri** (Adviser at the British High Commission) proposes renaming the project the *Musi River Ecosystem Regeneration Project* to reflect its broader vision.

## Approach

### Blending Tradition and Innovation for Water Ecosystems Restoration

The jury advocates for a balanced, multi-faceted approach that integrates traditional knowledge with modern, nature-based solutions to restore the Musi River and its surrounding water bodies. Ecological restoration and urban development should go hand-in-hand to ensure long-term climate resilience, while prioritising collaborative governance, community participation, land tenure security, and the socio-economic well-being of surrounding communities.

**Thierry Mathou** (Ambassador of France to India) stresses the need for a model city that balances urban development and environmental stewardship, with an emphasis on nature-based solutions, technology, and community engagement.



## Core actions / strategic lines

### › Restoration of Musi River and Water Bodies

Revive the Musi River and its tributaries using nature-based solutions, advanced wastewater treatment, and community involvement, ensuring access to potable water.

### › Buffer Zones and Groundwater Recharge

Define and protect buffer zones, integrating water management strategies to recharge groundwater and reduce pollution, and address land-use issues.

### › Self-Purification and Treatment Technologies

Utilise self-purification and advanced water treatment technologies like bio-remediation and eco-engineering to tackle pollution in the river and *nalas* and create public spaces.

### › Community Engagement

Encourage local communities to take ownership and actively participate in water management, while educating them on their rights and responsibilities.

### › Mobility and Accessibility for All

Ensure all communities, especially those with limited mobility, have access to clean water and are included in decision-making processes.

### › Incentives and Penalties

Establish regulations for land use around water bodies, offering incentives for responsible management and penalties for actions that harm water quality.

## Governance / public engagement

Establish a governance framework that ensures transparency and accountability in water management.

### › Multi-Stakeholder Governance

Develop a collaborative model with local communities, authorities, NGOs, and the private sector for managing water bodies and surrounding land.

### › Land Use Regulations and Water Rights

Implement clear land-use regulations prioritising water conservation, while securing the long-term sustainability of water bodies.

### › Public Education

Launch campaigns to raise awareness about the Musi River, water management, and community responsibilities, using clear and accessible language.

## Key proposals

### › Cultural Heritage and Water Restoration

Create cultural landmarks along the Musi River that restore ecological functions while honouring Hyderabad's rich history and cultural connection to water.

### › 60-Day Action Plans

Develop short-term action plans with clear milestones, focusing on low-cost and high-impact projects to kickstart the restoration process and demonstrate immediate results.

## Specific feedback for the teams

› Conduct a critical analysis of past initiatives in Bangalore and Hyderabad, identifying key lessons learned.

› Extend the scope of proposed sites to a total of ten, ensuring a broader and more impactful influence on the water ecosystem and surrounding communities.

› Clearly define the operational conditions and implementation methods, specifying the land-use strategy and detailing how land and water systems will interact and support one another in the long term.



# Review of proposals and strategic evaluation

## Evaluating Pathways to Position Hyderabad as a Global Leader in Urban Sustainability

Globalisation has intensified the competition for the appeal and attractiveness of cities, and this is influencing the development of Hyderabad. With its exponential, unrestricted growth, the city is on track to become one of the world’s top 10 megacities in the near future.

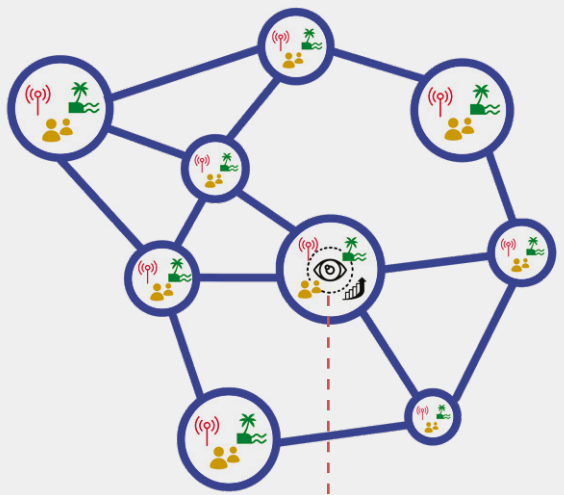
*Les Ateliers de Cergy* and the collaborative efforts over the past two years with the Telangana authorities, the French Embassy in India, AFD, and other partners, have identified key strategies to distinguish Hyderabad as an exemplary and forward-thinking megacity.

A city is a hub of economic and social exchange, and this exchange forms its very foundation. However, it is essential to recognise that these exchanges are not purely economic; they also involve the careful management of infrastructure and resources. This includes managing the physical and social connections within the city, as well as urban eco-logistics in its broadest sense – incorporating the management of water, energy, and waste, all of which are central to the city’s metabolism and urban ecosystem. This approach must address both local and metropolitan resource management, the balance between City and Nature, and the shared responsibility of all stakeholders in protecting biodiversity.

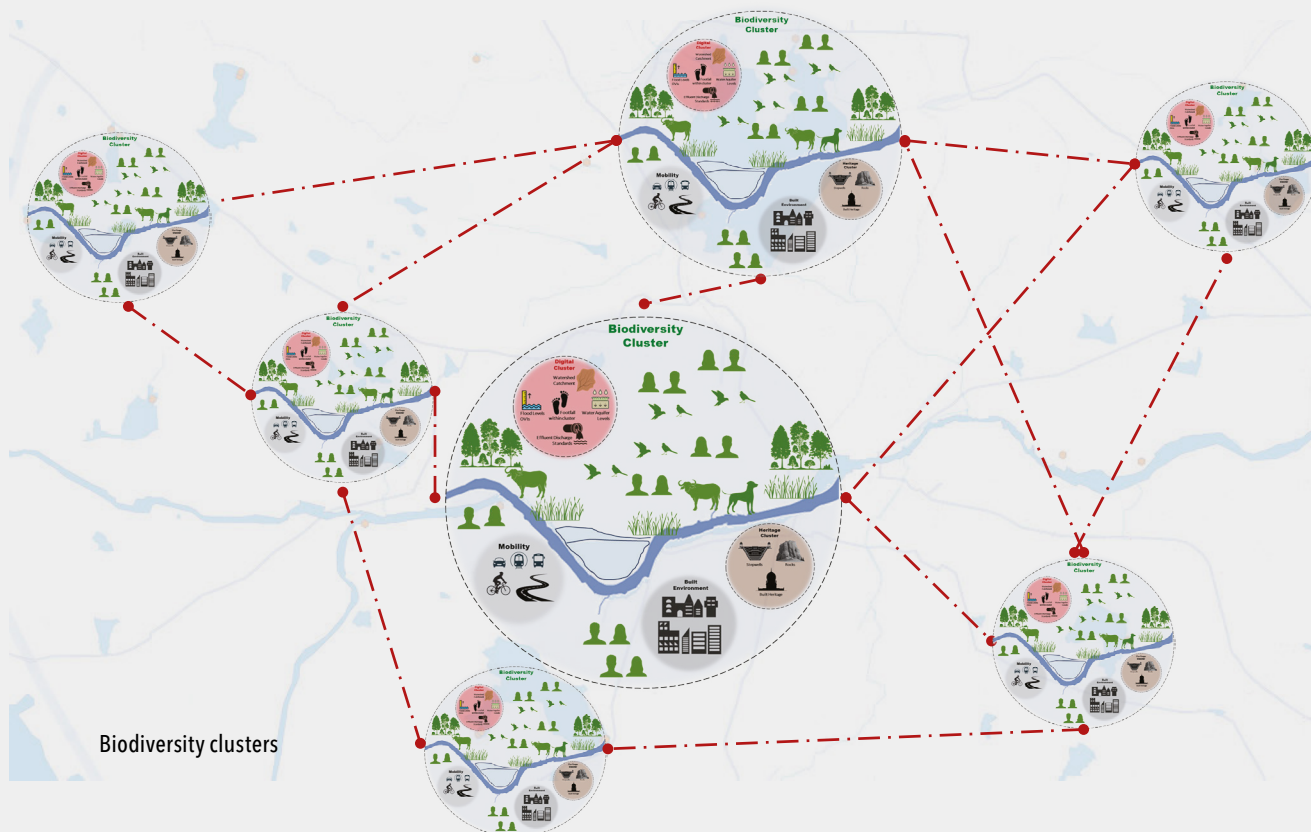
Until two decades ago, Hyderabad’s growth was closely tied to the rational and responsible management of water resources, which ensured the preservation of surrounding ecosystems and promoted a degree of self-sufficiency. This approach has helped shaped the city’s identity, associating it with a high quality of life grounded in sustainable resource management. Today, the city’s distinctive value lies in its ecological system, which must be preserved, restored, and adapted to support its growth as a megacity.

Ecology holds significant economic value and should be integrated into land valuation practices. It is fundamental to the health and well-being of all residents and is essential to supporting a sustainable economy and advancing social equity.

The following themes reflect the comprehensive proposals aimed at positioning Hyderabad as a resource-efficient, sustainable, and resilient megacity prepared for the future:



Hyderabad, a mosaic of interconnected hubs – globally positioned, locally rooted, digitally linked



## AQUAPOLIS: A City Transformed by Water

Hyderabad reclaims its identity as AQUAPOLIS, a city where water shapes urban life, economic vitality, and ecological resilience. Rooted in its legacy as the City of Lakes, Hyderabad transitions from an exploitative model to an ecology-first approach, restoring its historic hydrological network to secure a climate-adaptive and prosperous future.

By regenerating its living water system, the city re-establishes the natural connections between lakes, rivers, and aquifers, transforming water from a vulnerable resource into an engine of well-being, biodiversity, and economic stability. This capillary network irrigates the city in four dimensions, integrating time as a key element in water management, ensuring resilience for future generations.

AQUAPOLIS thrives on the synergy of Well-being, Health, Biodiversity, and “Ecology before Economy”, where hydrological stewardship is not just a responsibility but a shared identity. Through cultural renewal and regenerative design, Hyderabad pioneers a new urban paradigm, where water is celebrated, safeguarded, and embedded in the city’s DNA.

## Integrated strategies

### › Survey and Data

Engage with the community to assess their needs regarding water access, public spaces, and quality of life. Collect data on environmental indicators to inform decision-making.

### › Ecology before Economy

Adopt a whole-systems circular economy approach, recovering waste and pollutants as resources while formally integrating the informal sector into the waste management system.

### › Network of Clusters

- Connect grey, green, and blue infrastructures across metropolitan and local scales using nature-based technologies, low-energy solutions, and regenerative water management to create a resilient urban ecosystem.
- Limit centralised infrastructures by leveraging mini-networks based on the city’s natural topography and water bodies to reduce costs and improve efficiency.
- Integrate mobility, biodiversity, and community participation into urban spaces that support active mobility, high-quality environments and resilient communities.

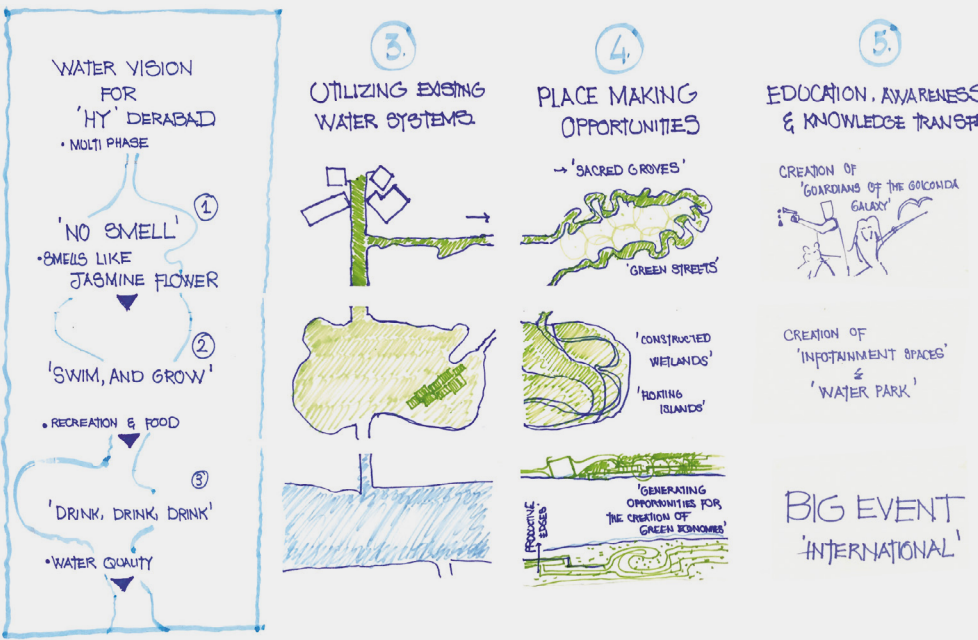




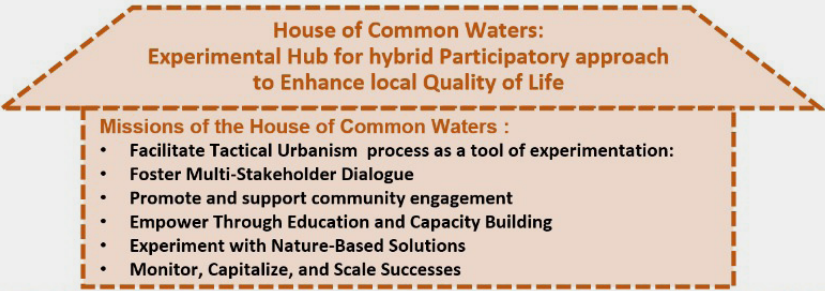
# Governance and Shared Experiences

- › Define a shared vision, identifying key stakeholders, resources, tools, and governance structures to drive the transformation of the city's ecosystem, particularly the Musi River and its surrounding environment.
- › Set clear objectives and establish rights and responsibilities to engage communities, government, and economic actors in lake management. Consider policies that incentivise sustainable water use and penalties for non-compliance.
- › Monitor progress using tangible indicators for water quality, biodiversity, and ecological regeneration, such as:
  - › Smell – Water odor as an early sign of regeneration success.
  - › Swim – Ability to swim safely as a public health benchmark.
  - › Drink – Potability of water for safe human consumption.
  - › Include additional indicators for water quality in the Musi River for irrigation purposes and around lake buffer zones.
- › Utilise digital tools, sensors, and data collection apps to gather scientific and sensory data on water, air, and quality of life, ensuring transparency and active involvement in decision-making.
- › Establish a clear timeline and regularly update data for public access, guiding future actions and monitoring progress.
- › Develop technical action manuals and provide dedicated spaces for experimentation, education, and cultural expression through:
  - › Interpretation Centres at metropolitan hubs.
  - › House of Common Waters at the local level.
- › Place-making events and activities like marathons, walks, and cultural gatherings that encourage hands-on community participation.
- › Address eviction concerns and ensure equitable access to public spaces and lakeside areas, with a focus on protecting vulnerable populations.

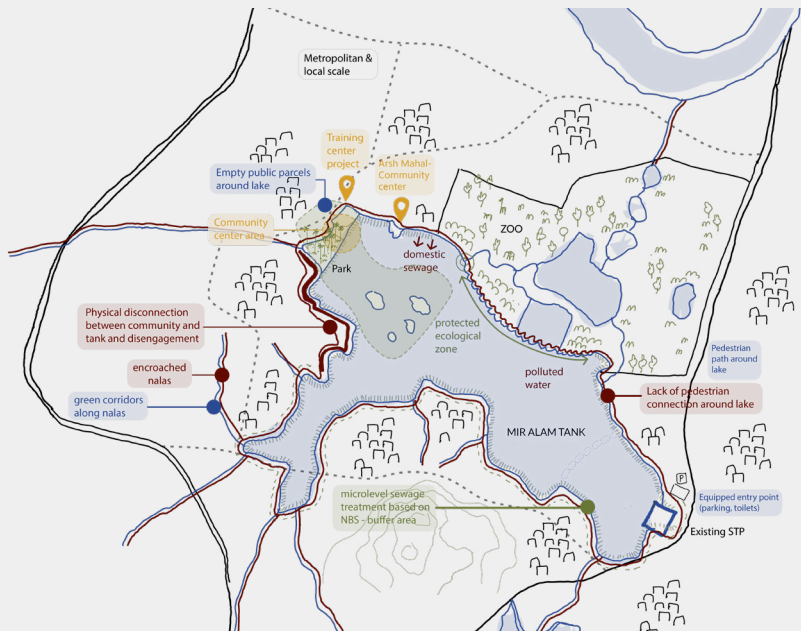
A holistic ecosystem approach



House of Common Waters' missions



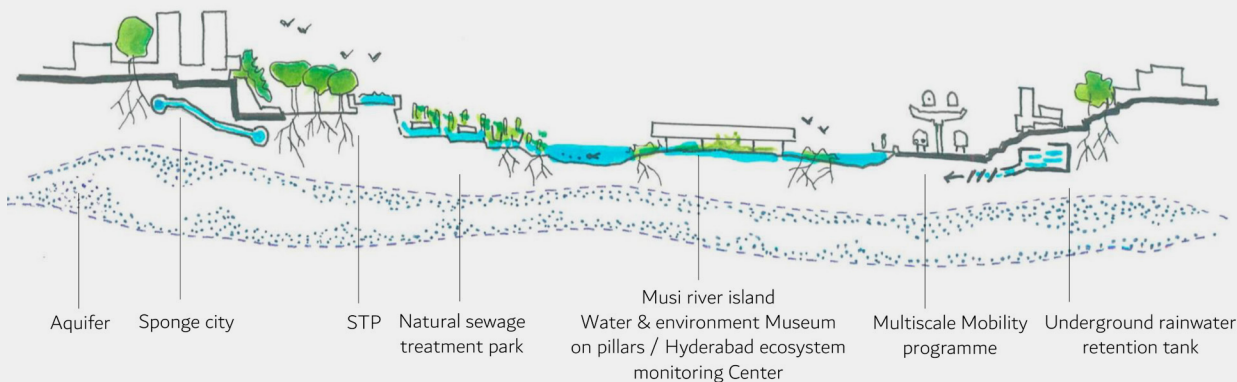




Mir Alam Tank: Map of challenges and opportunities



Envisioning a new future for Chadar Ghat Hub

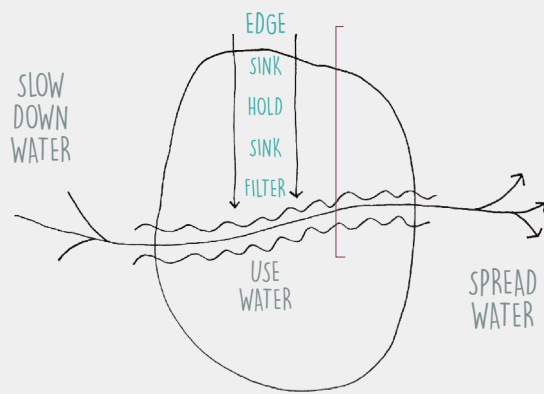


Urban transformation proposal: Repurposing the Chadar Ghat Hub's Bus Terminal Site

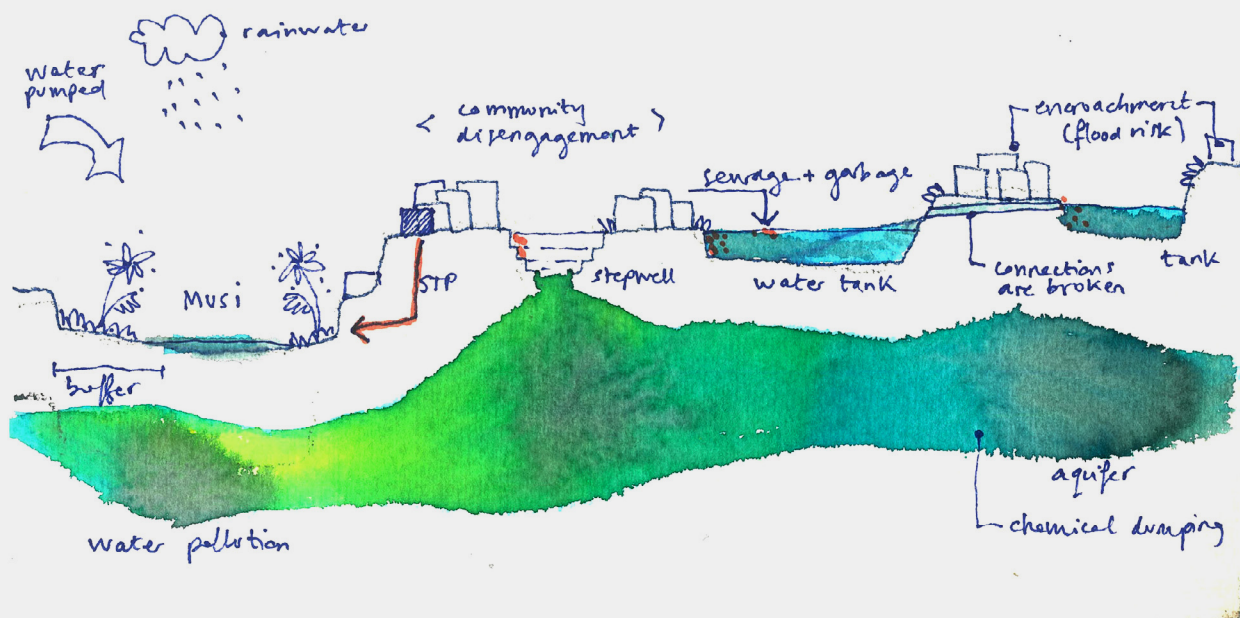
# Restoring the City's Metabolism

Restore Hyderabad's ecological corridors through blue-green infrastructure, integrating people-centred mobility along these networks and creating dedicated spaces for experimentation and implementation. This includes:

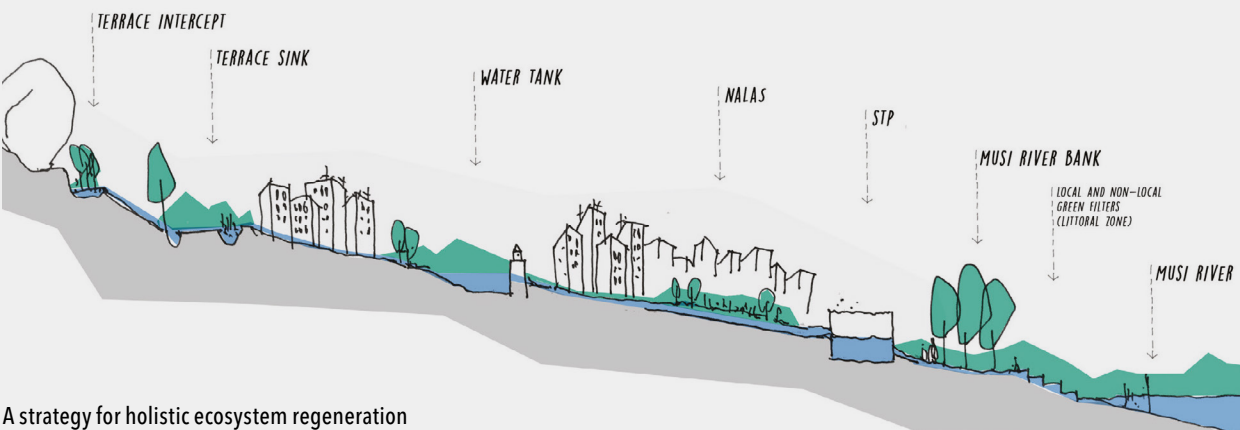
- › Interpretation Centres at the metropolitan scale engaging the public in environmental restoration and sustainability efforts.
- › "Houses of Common Waters" at the local scale, acting as community hubs for water management education, governance, and action.
- › Seamless urban connectivity, strengthening East-West multimodal links while restoring North-South connections to support everyday mobility.



A circular approach to urban hydrology regeneration



Key challenges impacting the water ecosystem in Hyderabad



A strategy for holistic ecosystem regeneration



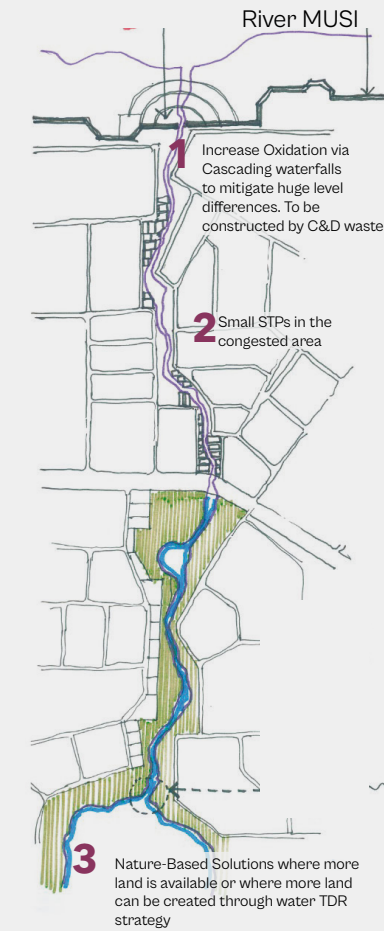
Implementation across key sites

- › To activate this mission, 10 lake-adjacent neighbourhoods will serve as hubs to test shared governance models and implement a structured agenda of actions and events. Each site, anchored by a House of Common Waters, will drive local initiatives while contributing to the wider metropolitan strategy.
- › At a broader scale, 2 to 3 metropolitan sites directly linked to the Musi River will focus on renaturation, habitat preservation, and blue-green infrastructure integration.

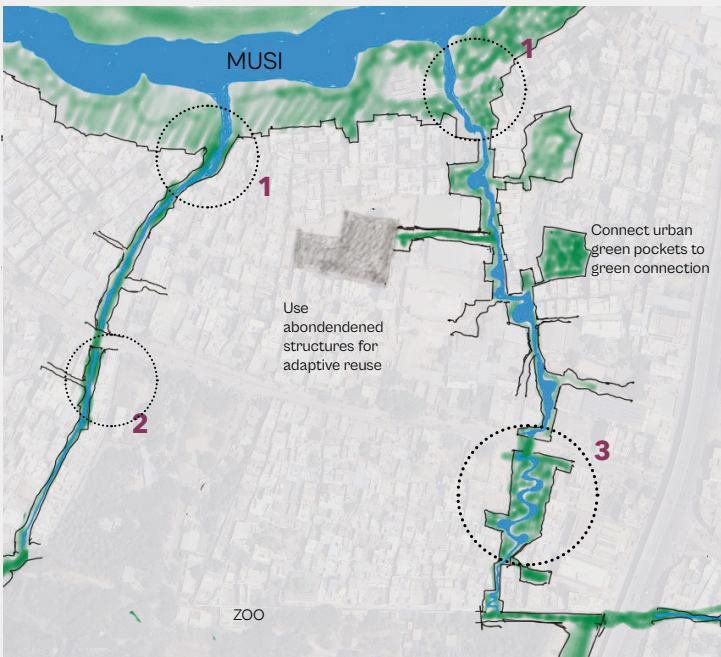


Example of an interconnected hydrological landscape feeding into the Musi River

HYBRID STRATEGY FOR WATER PURIFICATION



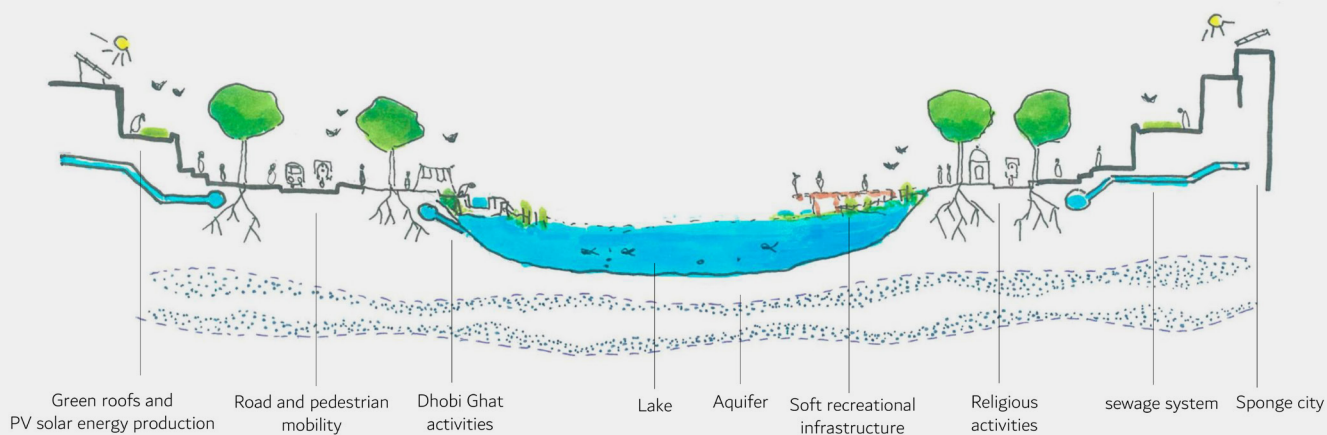
Restoration of the *nalas*



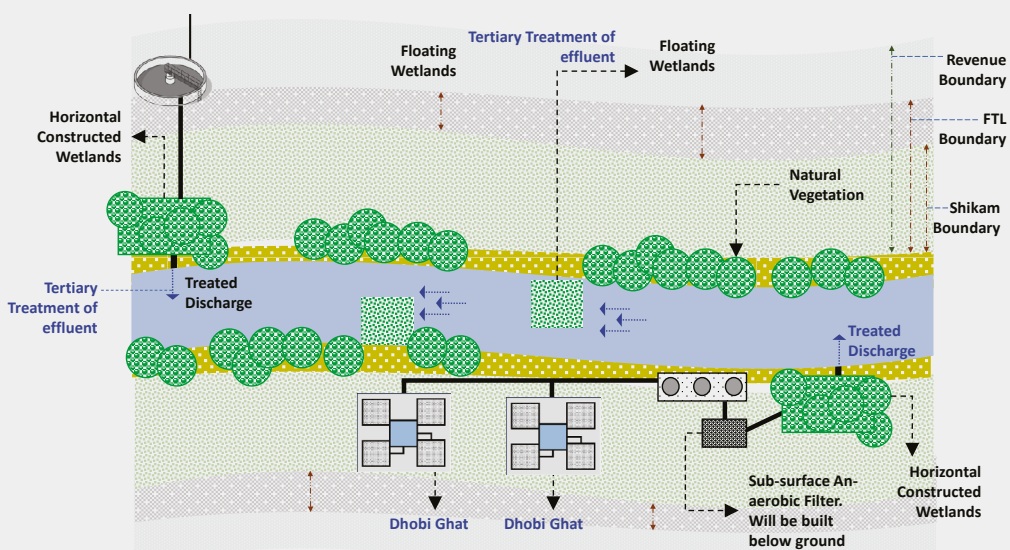
Before and After: Integrating Buffer Zones and Pathways for Water Purification, Walkability, and Resilience



Vision for an urban lake



Cross section of the lake



Addressing the Musi River waste challenges



# Key milestones

The proposed actions will combine daily activities – such as training, knowledge-sharing, art, culture, and sports – with event-driven initiatives that connect local engagement to metropolitan coordination. A structured timeline will guide the phased implementation of these efforts.

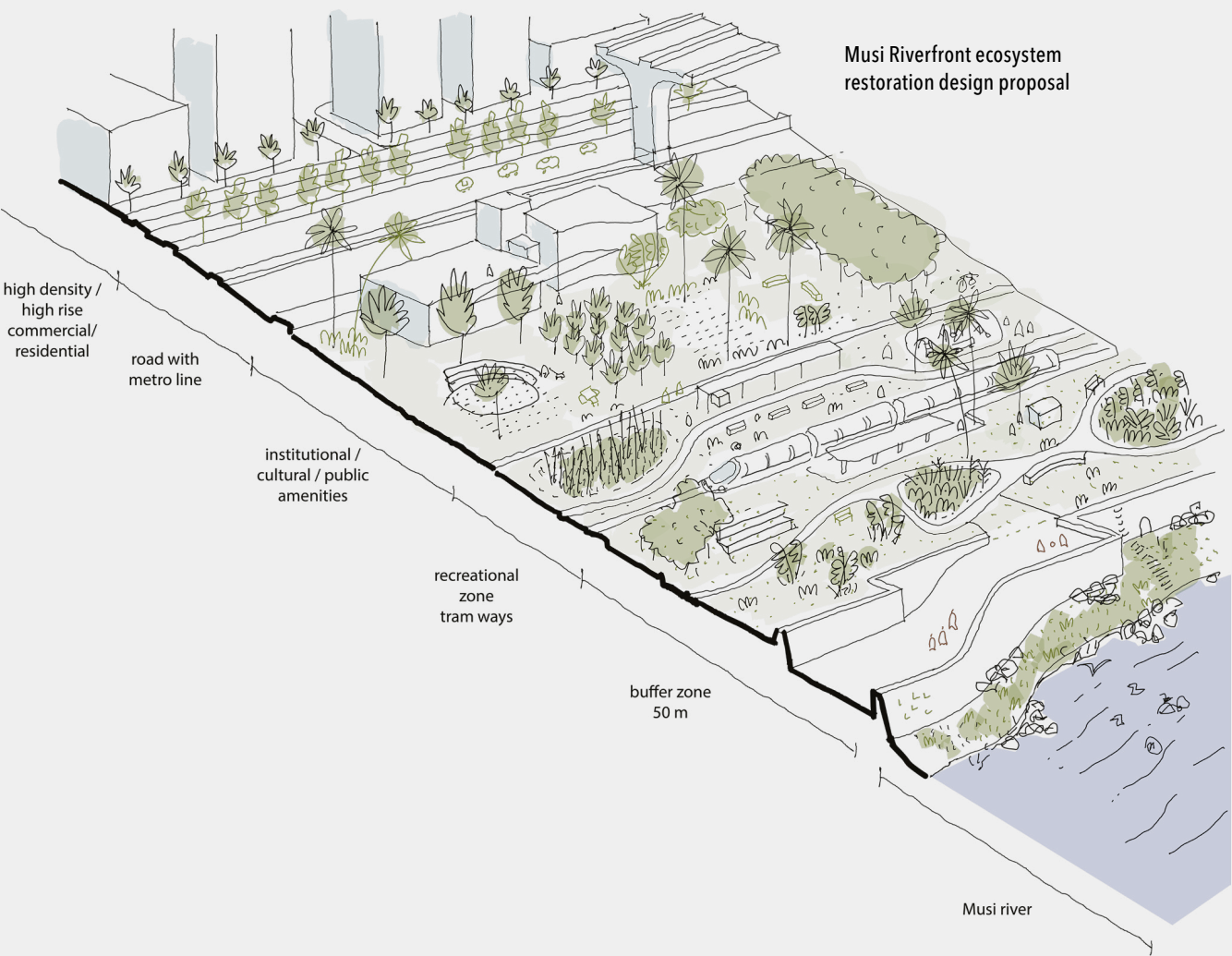
- › **Launch day:** Official launch with branding and communication rollout
- › **60 day action-plan:** Immediate focus on launching priority initiatives
- › **Mid-term and long-term strategy:** A comprehensive roadmap, including selection of key sites and a structured implementation timeline

## City branding: Launch

Position Hyderabad as the World Health Capital, celebrating its unique water heritage and commitment to ecological restoration.

Promote the city as Aquapolis, a global leader in water ecosystems management, cultural revival, and sustainable urban development, with the Musi River as its central symbol.

Conduct a Perception and Preference Survey on the Musi River and the city’s water bodies, gathering qualitative insights on public opinions and future visions.



# 10 Actionable steps

## 1. Programme a dynamic event agenda

Organise events over the short, medium and long term, ranging from weekly, monthly or annual activities. This could include:

### › Weekly

- Workshops on various topics, such as urban agriculture, circular economy processes, biobased materials derived from wetland plants
- Regular maintenance and management, based on a technical manual
- Waste collection and management
- Public realm improvement projects through placemaking and community-led initiatives

### › Monthly

- Data collection via digital platforms and community-driven surveys

### › Quarterly

- Thematic exhibitions or events at an interpretation centre

### › Yearly or biennale

- Marathon linking the Durgam Cherevu circuit to Ibrahim lake and extending along the Musi river
- Triathlon on the Musi river
- Biennale of bioclimatic architecture

## 2. Choose 10 Lakes for the Establishment of Houses of Common Waters

Identify ten lake-adjacent neighbourhoods for the development of “Houses of Common Waters”, guided by the logic of watersheds, to pilot shared governance and community involvement. Potential sites include Mir Alam Tank and other lakes within the watershed, and the chain of lakes between Durgam Cheruvu and Ibrahim Lake.

## 3. Create a dedicated position for the management and operation of the Houses of Common Waters

This role could be fulfilled by a duo – one from France and one local – for the 10 sites. A weekly commitment of half a day per House of Common Waters could be a good starting point for effective management and community engagement.

## 4. Identify priority walking routes for restoration

4.1. Establish pedestrian-friendly routes across the city by integrating trails, walkable streets, and public spaces within ecological corridors.

4.2. Prioritise pathways around relatively healthy water bodies to accelerate restoration efforts and remove barriers to regeneration.

4.3. Design cultural and recreational trails connecting lakes to the Musi River promenade, reinforcing Hyderabad’s active mobility and biodiversity network. Key itineraries could include Durgam Cheruvu to Ibrahim Lake, extending to the Musi River, and Mir Alam Tank with its surrounding *nalas*. These connections will form the backbone of a citywide regeneration strategy.

## 5. Select sites for the first Interpretation Centres

Identify key locations for the first interpretation centres near the Musi River, such as transforming existing sewage treatment plants (STPs) into public spaces that not only treat wastewater but also educate the public on water conservation and ecological stewardship.

## 6. Activate community involvement with digital tools

6.1. Launch a digital application for a public survey to create a shared vision for the Musi Ecosystem Restoration, with the goal to gather community input on future planning, management, and restoration efforts.

6.2. Identify volunteer ambassadors to collaborate with management teams at each House of Common Waters, strengthening community engagement and leadership in local water governance.

6.3. Conduct field surveys and digital reporting with interested residents and universities to document all lakes, including dry ones, to uncover lost ecosystems. This can be achieved through research into historical place names, recovering traces of vanished lakes and their connections, and identifying links between restored and lost bodies of water. For instance, some Houses of Common Waters could focus on dry lake sites to explore restoration possibilities, others could address lakes that have been restored but whose shorelines have been compromised, and some could focus on rural lakes to prevent further degradation.

6.4. Develop a digital monitoring platform that integrates sensory indicators (such as smell and personal wellbeing) with biodiversity targets (observing



# → for regenerative metropolitanisation

fauna and flora), alongside health-related data, such as scientifically analysed water quality (for irrigation, drinking etc.) and groundwater recharge. The goal is to establish a baseline database, carry out continuous monitoring, and share the findings with the scientific community, residents and users. Positive outcomes can be incentivised, while negative ones could be addressed through penalties.

6.5. Perform a critical assessment of lakes that have already been restored in Hyderabad, as well as examples from other cities facing similar challenges (such as Bangalore). This analysis should use the previously defined indicators and targets to evaluate the impact and effectiveness of restoration efforts, identifying successes and areas for improvement.

## 7. Develop Technical Manuals

Develop and distribute technical manuals in collaboration with the management teams of the Houses of Common Waters and all relevant stakeholders. This manual will cover key aspects such as water usage, wastewater treatment, waste management, circular economy practices and construction techniques using biobased materials. The aim is to provide clear guidelines for sustainable practices and effective community engagement across all involved stakeholders.

## 8. Organise short-term events

The Houses of Common Waters will host a series of in-service training sessions and workshops, starting with practical training on constructing shelters for their activities. Participants will gain hands-on experience in sustainable construction techniques using materials such as water hyacinth mats, bamboo, and rammed earth.

## 9. Plan and implement medium and long-term actions

9.1. Establish three levels of environmental protection zones around lakes, *nalas* and the Musi River:

- Riparian zone - The primary water retention and flood mitigation area, essential for maintaining ecological balance, supporting groundwater recharge, and preserving biodiversity by providing critical habitats for flora and fauna.
- Buffer zone - A regulated zone for seasonal water infiltration and groundwater recharge, where construction on stilts or a 10% impervious surface limit may be allowed under strict guidelines in dense areas.
- Ecozone: A highly regulated area where impermeable surfaces are restricted, and only sustainable transport modes are allowed, to protect water, air, and acoustic environments.

9.2. Conduct a comprehensive inventory of all lakes, including historical ones that may have disappeared over time, within the two identified pilot watersheds. Map high-water marks for perennial lakes based on a minimum 20-year recurrence interval and define buffer zones based on a 100-year recurrence interval.

9.3. Explore the potential of relocating the existing bus terminus and transforming it into a heritage park, featuring an urban forest, museum, and cultural centre on stilts.

9.4. Implement a phased relocation for residents in flood-prone areas or buffer zones, with the goal of eventually resettling them in newly constructed habitats that comply with the updated regulations.

9.5. Mandate mixed-income housing around lakes and invest in lake-based economic activities to support sustainable livelihoods and vibrant communities.

9.6. Integrate all the city's ecological corridors and blue-green infrastructure into the masterplans, their inclusion in all planning documents.

9.7. Structure the public transport system around key nodes of the blue-green infrastructure, establishing transport hubs that also serve as centres for culture, education, and information.

9.8. Develop a heritage tramline along the Musi River, connecting key cultural, historical, and ecological sites, ensuring sustainable transport and celebrating the city's legacy.

## 10. Set water and construction regulations

Define clear rules for water management, construction or occupancy rights, specifying the associated rights, duties, and responsibilities. Develop guidelines and terms of reference to prevent water runoff, slow the flow, purify water and ensure groundwater recharge. Implement the 'Avoid, Reduce, Offset' framework for construction activities, tailoring measures to the needs of rural, semi-urban, and highly urbanised areas.

Incentivise the preservation of buffer zones around water bodies through Transferable Development Rights (TDR), allowing development potential to be transferred to more suitable locations.

# 10 Actionable steps for regenerative metropolitanisation

1

## Program a dynamic event Agenda

Organise events over the short, medium and long term, ranging from weekly (eg. workshops, maintenance, placemaking initiatives), monthly (eg. data collection via digital platforms & surveys), or annual activities (eg. marathon along ecological corridors, biennale exhibitions etc).



2

## Establish the Houses of Common Waters

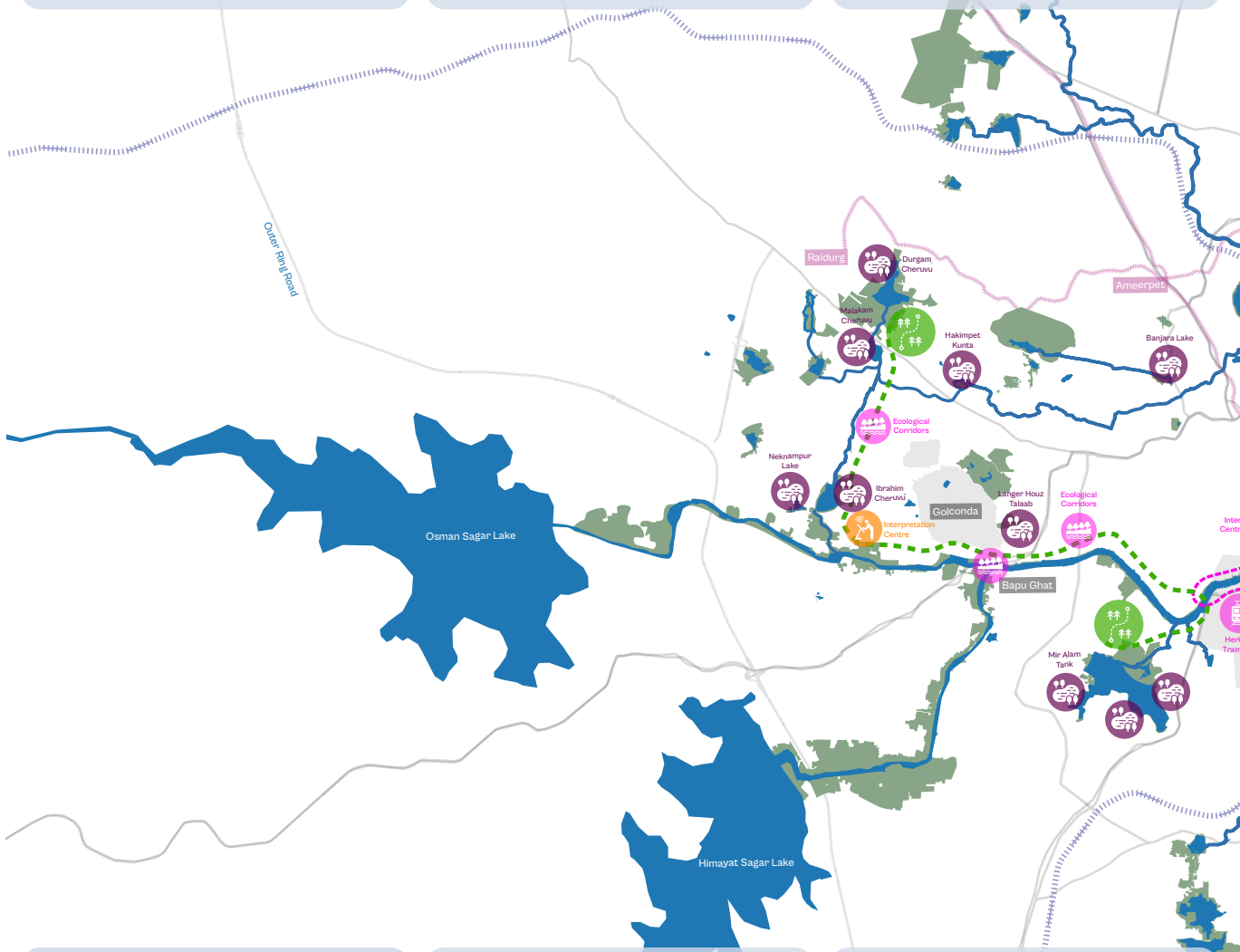
Identify 10 Lakes for the development of Houses of Common Waters, guided by the logic of watersheds, to pilot shared governance & enhance community involvement. Examples: Mir Alam Tank and others lakes in its watershed, chain of lakes between Durgam Cheruvu and Ibrahim Lake.



3

## Create dedicated positions for managing the Houses of Common Waters

This role could be fulfilled by a duo – one from France and one local – for the 10 sites, with a weekly commitment of half a day per House of Common Waters.



## 10 Actionable steps for regenerative metropolitanisation

- Water Bodies
- Green Connections
- Roads
- Railway Lines
- Metro Lines
- Heritage areas
- Heritage Tram Line
- Recreational and Cultural Trails

7

## Develop Technical Manuals

Develop and distribute technical manuals in collaboration with the management teams of the Houses of Common Waters and relevant stakeholders, covering key aspects such as water usage, wastewater treatment, waste management, circular economy practices, etc.



8

## Organise Short-term Events

The Houses of Common Waters will host a series of in-service training sessions and workshops, starting with practical training on constructing shelters for their activities. Participants will gain hands-on experience in sustainable construction techniques.





4

#### Identify walking routes for restoration

Establish pedestrian-friendly routes across the city by integrating trails, walkable streets, and public spaces within ecological corridors. Design recreational & cultural trails that connect lakes to the Musi River promenade, reinforcing active mobility and biodiversity network.



5

#### Select sites for the first Interpretation Centres

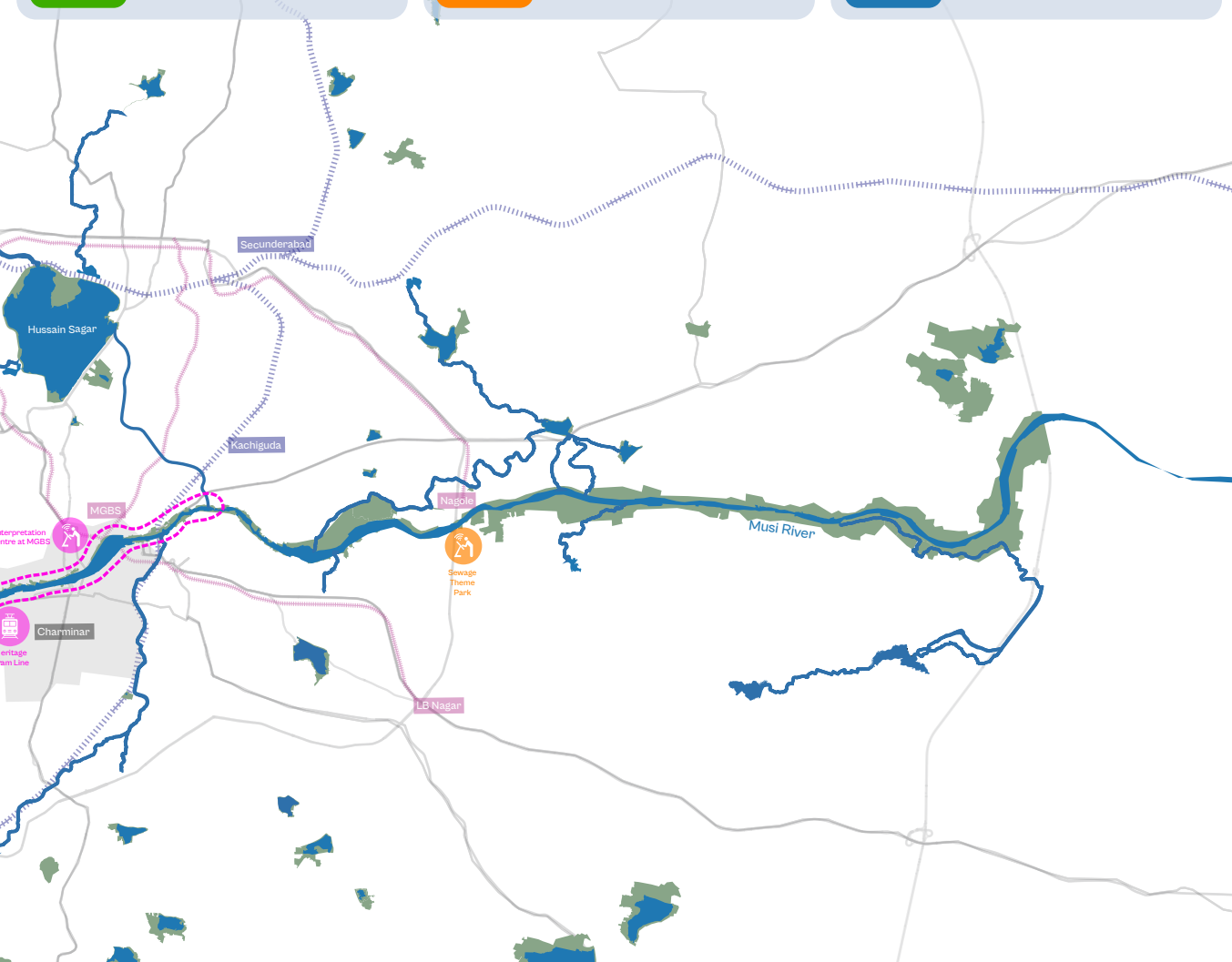
Identify key locations for the first interpretation centres located near the Musi River. For example, transform the existing Sewage Treatment Plants (STPs) into Sewage Theme Parks that not only treat wastewater but also educate the public on water conservation and ecological stewardship.



6

#### Activate community involvement with digital tools

Launch a digital survey for community input on Musi Ecosystem Restoration. Engage volunteer ambassadors for local water governance. Conduct field surveys to document lost lakes. Develop a digital monitoring platform integrating sensory indicators, biodiversity, and health data.



9



#### Plan and Implement Medium and Long-term actions

- Conduct a comprehensive inventory of lakes and watersheds.
- Establish distinct levels of environmental protection zones around the Musi, lakes and the nalas
- Relocate the existing bus terminus and transform it into an ecological island with an interpretation centre
- Implement a phased relocation in flood-prone areas
- Integrate the city's ecological corridors into all planning documents
- Associate public transport to ecological corridors
- Develop a heritage tramline along the Musi River



10

#### Set water and construction regulations

Define clear rules for water management and construction or occupancy rights, specifying the associated rights, duties, and responsibilities. Develop guidelines to prevent water runoff, slow the flow, purify water and ensure groundwater recharge.



# Jury's remarks

## Perception survey

ROHIT LAHOTI

*A perception survey should be conducted to assess the dynamics between the community, government, and natural resources.*

## Micro-macro integration

LISE BREUIL

*Low-cost, community-driven, and nature-based solutions have strong potential, but must integrate local engagement with macro-level economic impact. It's worth exploring how to maintain this cross-cutting, participatory approach and align it with the Musi Riverfront Development Corporation's ongoing projects.*

## Unlocking potential

ANANT MARINGANTI

*Empower communities by reclaiming overlooked land, making it valuable, and giving it back. Hope sparks ripple effects, creating opportunity across geographies.*

## Multifaceted approach

MAHEEP SINGH THAPAR

*The study effectively generated new ideas, broadened perspectives, and explored multi-dimensional linkages at both micro and macro levels.*

## Eco-resilience

JEAN GRÉBERT

*The interconnectedness of water, agriculture, and health through practices such as greywater irrigation, urban farming, fish farming, and medicinal plant cultivation provides sustainable, local alternatives that support community resilience and environmental balance, offering a more natural approach compared to high-tech solutions and industrial farming methods.*

## Action plan

M. SNEHALATHA

*I recommend collaborating with the government or funding agencies to implement one or two solutions, organising a follow-up meeting in two years to assess progress, and creating technology booklets for local builders interested in adoption.*

## Guardianship

SUBBA RAO

*It's crucial to engage the public with key questions about ownership and responsibility of the water bodies, especially since only a minority (255 of 4,500) have defined boundaries, making legal protection difficult. The land-water relationship must also be better reflected in the proposals to address legal and ecological challenges and ensure sustainable stewardship.*

## Community engagement

KALPANA RAMESH

*To motivate people to be more sensitive towards water infrastructure, we must raise awareness about their rights and responsibilities, using education campaigns and incentives for positive behaviour, with penalties to discourage harmful actions. The Musi riverfront development policy and master plan should also include actionable 60-day action plans at local scales for faster implementation.*







This synthesis document presents the transversal analysis and key conclusions from the International Urban Workshop “Water and Metropolis - A Bioclimatic City of Lakes, Hyderabad Comes Full Circle as Health Capital of the World”. The workshop was held in Hyderabad, India, from the 25 November until the 06 December 2024, and was organised by the non-profit organisation Les Ateliers de Cergy in collaboration with the Government of Telangana, represented by the Musi Riverfront Development Corporation Limited, and supported by the French Development Agency and the French Embassy in India.

