

RIVER CITIES ALLIANCE

Updates about the alliance activities

“Rivers have always occupied a central place in India’s heritage and ethos, and have traditionally been sources of spiritual inspiration, cleansing and penance... We are striving to introduce a new thinking on river cities. The establishment of ‘River Cities Alliance’ (RCA) connecting river cities across the country is one such step in this direction” - Shri Narendra Modi, Hon’ble Prime Minister of India

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City Corner; Dhanbad

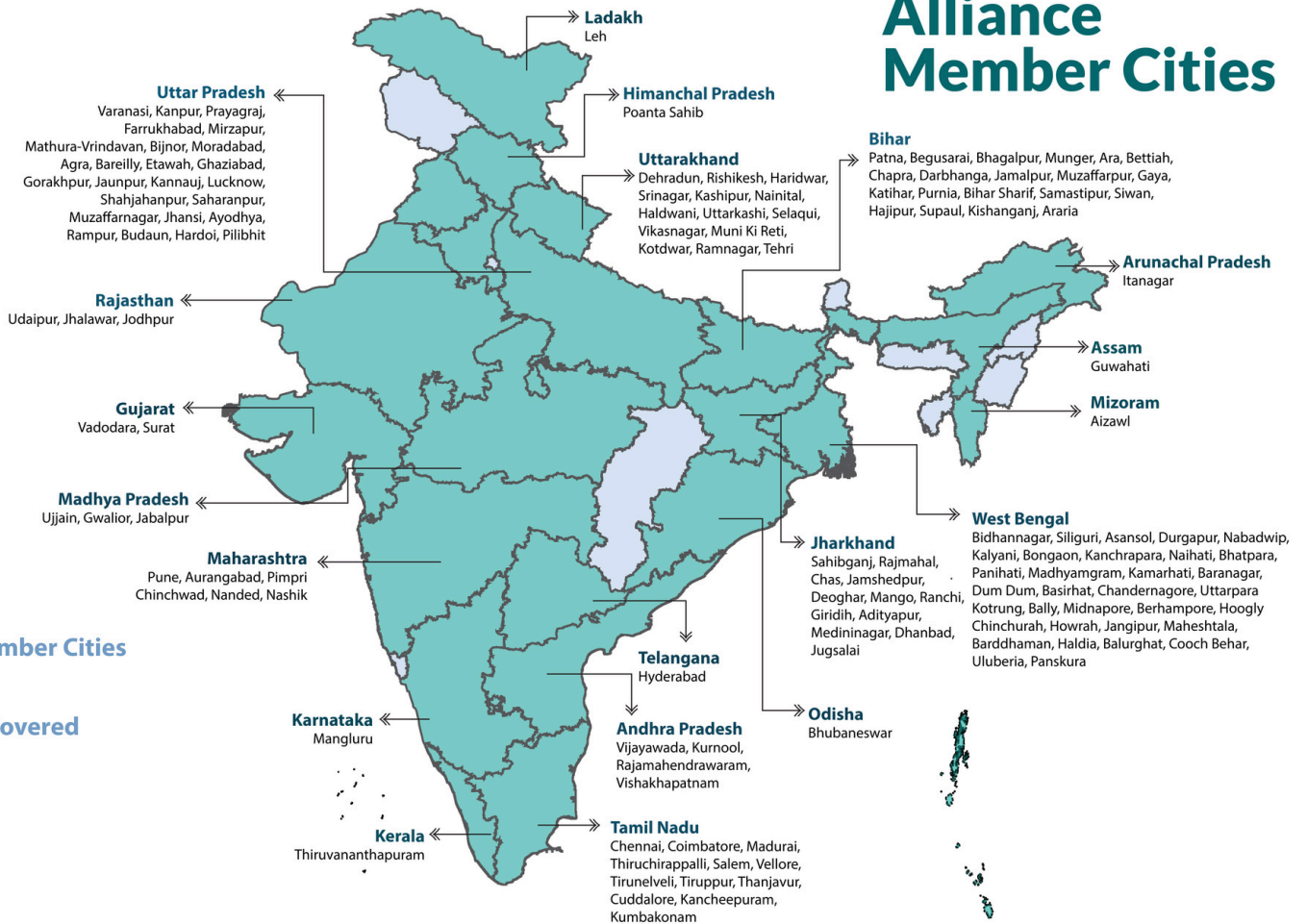
Technology Corner; River Clean up Floating Trash Barrier

RCA CITIES SNAPSHOT

Welcome to the new members of RCA
Phusro, Chirkunda from Jharkhand



Alliance Member Cities



RCA Member Cities

142

States Covered

20

WEBINAR

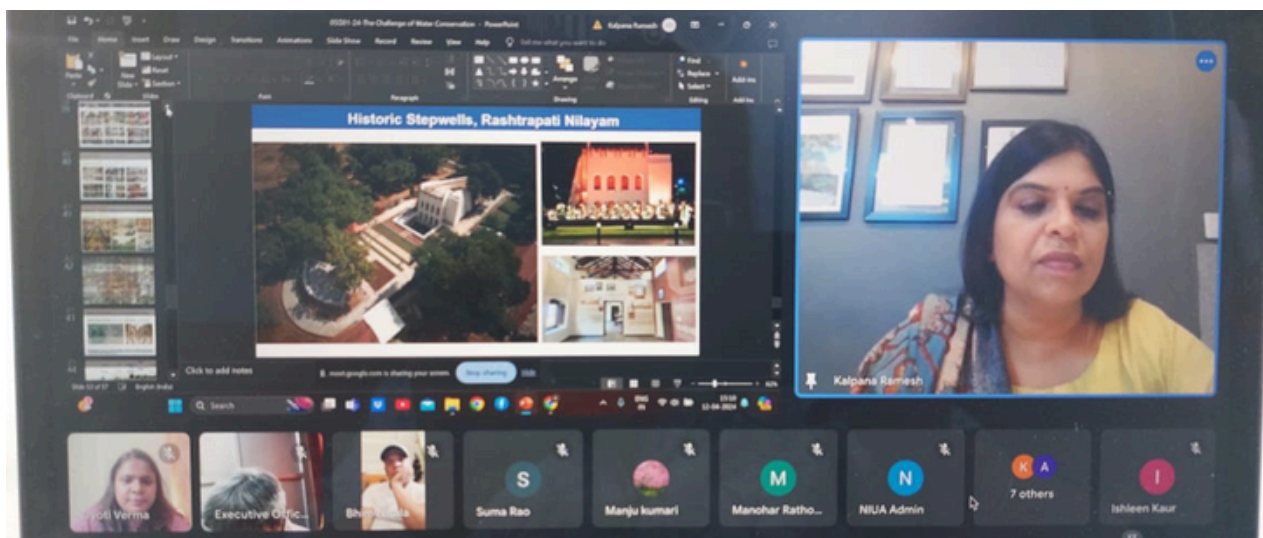
HYDERABAD'S STORY OF RESTORING ITS SHALLOW AQUIFERS

In India, shallow aquifers have long served as integral components of water systems, offering a dependable water source when effectively managed. These aquifers, utilized in city planning for centuries, sustain local ecosystems by providing water to wetlands, streams, and vegetation. Their replenishable nature makes them valuable in alleviating pressure on surface water sources.

A webinar was organized for RCA cities on 12th April to propagate new thinking on groundwater management in their cities. The Rainwater Project in Hyderabad led by Ms. Kalpana Ramesh has done exemplary work reviving languishing heritage groundwater structures such as stepwells and baoris in the middle of the dense settlements. She presented the case of restoration of Bansilalpet Stepwell undertaken by the city which has brought about significant ecological, economic and social impacts on the surrounding communities as well as the city.

The webinar was attended by representatives from 8 RCA cities - Maheshtala, Dehradun, Kalyani, Panihati, Mango, Chas, Rajmahal, Katihar - and SMCG Jharkhand along with STC finalists to understand how they could replicate the intervention in their respective cities. A few key takeaways from the webinar

- Traditional RWH systems that existed 2000 years ago along river zones played an important role in improving groundwater and keeping the Musi River perennial
- Hyderabad's proactive approach involves structural assessments and restoration of historical water recharge structures like step wells and dug wells.
- Bansilalpet Step well with a holding capacity of over 22 lakh liters acts as a catchment for the nearby half-square km benefiting a population of approx. 20,000 people
- 40+ common area rainwater harvesting structures executed with recharge wells
- Aim is to increase the rainwater recharge from 8% to 80%
- Community engagement is key, with collaborative efforts ensuring sustainable water management.



CITIES OF TOMORROW: STRATEGIC PLANS FOR CLIMATE RESILIENCE

A webinar “Cities of Tomorrow: Strategic Plans for Climate Resilience” was organised on 27th June in association with WWF to facilitate learning amongst officials and climate enthusiasts of different Indian cities about actionable plans to make climate-resilient neighbourhoods. The city-level Climate Action Plan (CAP) serves as a comprehensive framework for assessing local vulnerabilities to climate change and proposing strategies to mitigate carbon emissions and adapt to climate risks. Additionally, it may incorporate disaster risk reduction methods to enhance resilience. The CAP sets actionable targets and outlines viable financial mechanisms to facilitate implementation.

Additionally, many cities increasingly prioritise the restoration and conservation of their blue ecosystems, with rivers being a key focal point. Five Indian cities have developed their Urban River Management Plans (URMP), and around 60 more are on the way to prepare strategies to manage their river basins effectively. The URMP presents a framework for managing urban river stretches in the Ganga River Basin especially focusing on reducing anthropogenic factors of pollution to support biodiversity and improve human health. The river management plans set out specific actions to promote river-sensitive urban development which have the co-benefits of building climate resilience.

By implementing localized strategies tailored to their unique circumstances, cities can effectively reduce emissions, improve air quality, enhance energy efficiency, and promote sustainable transportation and urban planning. Our RCA cities, **Moradabad and Bareilly** shared their experience of preparing the Urban River Management Plan, **Leh and Pune** presented strategies for climate action planning.

CITIES OF TOMORROW
STRATEGIC PLANS FOR CLIMATE RESILIENCE

Let us hear from our cities on how action plans accelerate sustainable and resilient actions in safeguarding our urban ecosystem.

SPEAKERS

PUNE	Mr. Mangesh Dighe Environment Officer Pune Municipal Corporation	BAREILLY	Mr. Rajeev Kumar Rathi Executive Environmental Engineer Municipal Corporation, Bareilly
LEH	Mr. Stanzin Rabgals Executive Officer Municipal Committee, Leh	MORADABAD	Mr. Abhishek Kumar Executive Engineer Municipal Corporation, Moradabad

27 JUNE, 2024
15:30 – 16:30 IST

 Join the Webinar
Scan QR Code

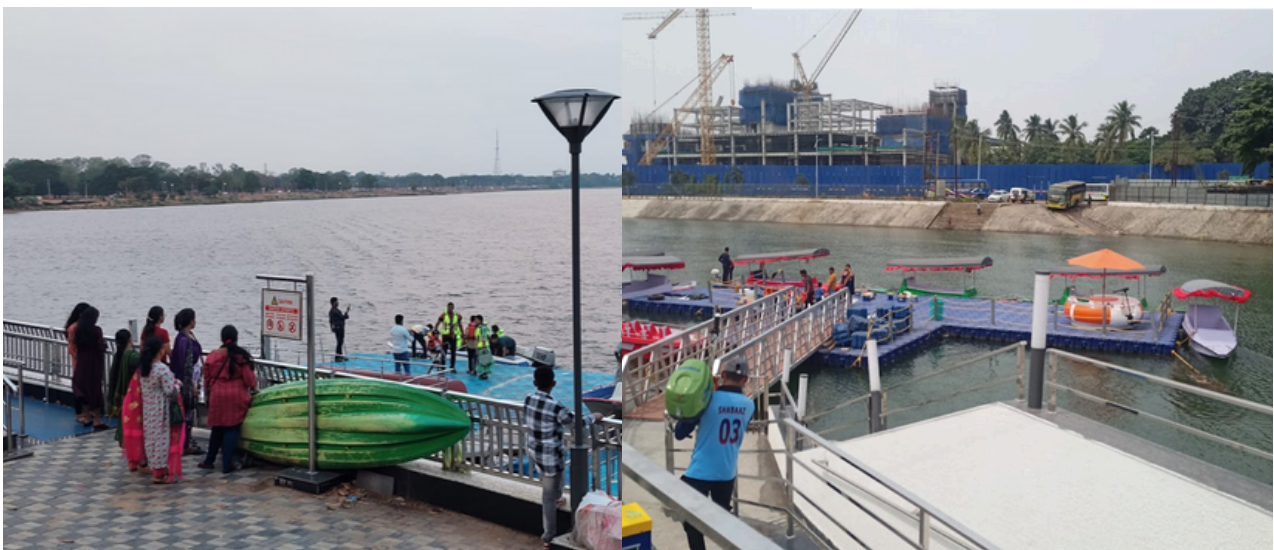
THEMATIC REPORT ON "LEVERAGING THE ECONOMIC POTENTIAL OF RIVERS IN CITIES"

A thematic report is being prepared to provide valuable insights into river cities across India, shedding light on the economic benefits, challenges, and opportunities associated with urban rivers. By showcasing economic practices from various Indian cities and presenting current scenarios of urban river health, the report aims to empower cities to explore the economic potential of 'healthy' river ecosystems.

CUTTACK, ODISHA

A preliminary documentation and data collection visit to Cuttack, Orissa along the Mahanadi River was undertaken to identify and document the different economic activities that are river-centric and to understand how the city is leveraging the river for economic generation.

Many innovative activities with cultural and economic significance including boat clubs, river-linked museums and culturally important landmarks were mapped and documented meetings were held with different officials including the Vice Chairman and Chief town planner of the Cuttack Development Authority as well as the Municipal Commissioner, Cuttack Municipal Corporation.



A glimpse of the site visit conducted in Cuttack

GUWAHATI, ASSAM

As part of the data collection and documentation for the Thematic report, the team visited Guwahati, Assam along the Brahmaputra River to map out the key economic activities ongoing that are river-centric, specifically in Guwahati. The team met with Smt. Kavitha Padmanabhan, Commissioner & Secretary to the Government of Assam and other key stakeholders from the Guwahati Metropolitan Development Authority, Guwahati Municipal Corporation, Flood and River Erosion Management Agency of Assam (FREMAA), etc., to collect crucial data that will assist in preparing the Thematic Report.

Many innovative activities, such as the riverfront development and heritage centre, wetland preservation, ferries, and cruises, were mapped as part of the visit.



EXPERT CONSULTATION WORKSHOP ON 'PLANNING AND MANAGEMENT OF RIVERINE ISLANDS'

An expert consultation workshop on 'Planning and Management of Riverine Islands', was held on 8 May 2024. An area often overlooked under a holistic approach to ensuring healthy and thriving urban rivers includes the planning and managing of riverine islands. The consultation, therefore, aimed at reflecting upon the outlook of riverine islands in India and their potential to address critical challenges like urban flooding and water scarcity, especially in the face of escalating climate change impacts.

The esteemed panel of experts shared invaluable perspectives on thematic of governance, management, physical infrastructure and community, which are often sidelined but quite integral under the purview of urban riverine islands. The workshop discussions underscored the urgency of integrating and mainstreaming urban riverine islands into the sustainable urban water management agenda. By harnessing a fluid approach and drawing from Indigenous wisdom, we can navigate the challenges of urban flooding, water scarcity, communal challenges and climate resilience more effectively while also choosing to celebrate the wonderful natural ecosystem of riverine islands.

The experts invited as part of the consultation included:-

- Mr. Rajiv Ranjan Mishra, Retd. IAS, Former Director General NMCG, Chief Advisor NIUA (Chair)
- Mr. Sundeep Singh, Director, Ministry of Environment, Forests and Climate Change
- Mr. Ritesh Kumar, Director, Wetlands International India
- Mr. Siddhart Baidya, Lead, WWF-India
- Mr. Manu Bhatnagar, Principal Director, Natural Heritage Division · INTACH
- Mr. Mitul Baruah, Associate Professor of Sociology/Anthropology and Environmental Studies at Ashoka University
- Ms. Nabeela Siddiqui, Assistant Professor (Law), Vinayaka Mission's Law School (VMLS)



TWO-DAY TRAINING ON MAKING RIVER-SENSITIVE MASTER PLANS' IN KOLKATA, WEST BENGAL

A 'Two-Day Training on Making River-Sensitive Master Plans' was organised from 27-28 June 2024 in Kolkata, West Bengal. The training was attended by thirty-three senior officials, from the Urban Development and Municipal Affairs Department; West Bengal Transport Infrastructure Development Corporation; Kolkata Metropolitan Development Authority; Burdwan Development Authority; Institute of Town Planners-West Bengal Chapter; Kolkata Municipal Corporation; the municipalities of Jangipur, Kamarhati, Panihati, Bally and Bongaon; All India Institute of Local Self Government; academic institutes including IIT Kharagpur, Jadavpur University, Sister Nivedita University; and PACE Consultants.

Over the two days, participants learned the importance of integrating river thinking within their Master Plans. They explored available planning tools for this purpose and reviewed case examples of Master Plans incorporating river-related elements. During the sessions, we also presented an overview of the Strategic Guidelines for 'Making River-Sensitive Master Plans' and the 'River Centric Urban Planning Guidelines.' Engaging exercises and moderated discussions provided opportunities for participants to share their experiences and challenges in integrating river thinking into long-term urban planning.

Discussion and Deliberation on Mainstreaming River-Centric Planning Strategies

The participants brainstormed on the following aspects-

- How can cities adopt river-centric planning strategies to address various challenges of urban river management
- Possibility of developing zonal development plan for river zone considering as a special area
- How to address the impacts of climate change within the purview of master plan?
- How to strengthen the institutional framework for river management (e.g. creating a dedicated SPV for river management)?
- Possibility of integrating water sensitive design principles, blue-green strategies in the Master Plan





CITY CORNER

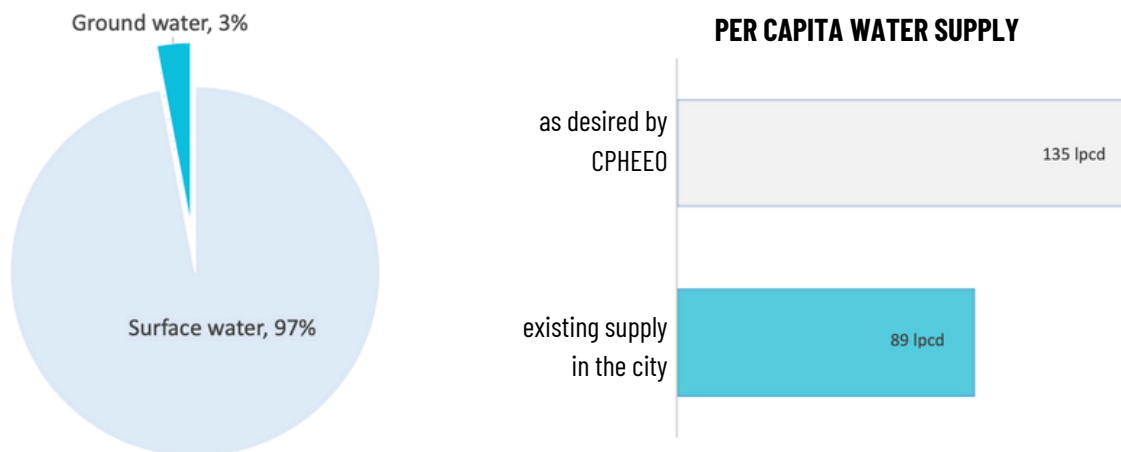
DHANBAD, JHARKHAND

Shallow Aquifer Management

Dhanbad is famous as the Black Diamond City and is the coal capital of India. It is the second most populous city in the state of Jharkhand.

The Dhanbad Municipal Corporation (DMC) area is spread over 275 square kilometres and can be broadly classified under non-coalfield zone and coalfield zones. DMC has five circles, divided into 55 wards. The total population of the DMC in 2021 was 1.3 million with 0.34 million households. As per DMC's City Water Balance Plan 2021 (CWBP 2021):

- A total of 2129 government water tapping points within DMC
- One tapping point each in Maithon dam, Topchanchi lake, and Jamunia river. Damodar river has two tapping points.
- According to CWBP 2021, surface water sources cumulatively provide 69.38 million litres per day (MLD) of water to the municipal area, while groundwater provides 2.5 MLD.



**It must be noted that all the figures are pertaining only to the government water supply.*



GROUNDWATER CHALLENGES

a. INCREASING WATER DEMAND: The growth of households in the DMC is estimated to be 12 per cent between 2011 and 2025, increasing pressure on groundwater, which remains the main source of water.

b. NO MONITORING: Dependence on groundwater remains unaccounted for, hence its use at the DMC level is unknown, which translates into limited measures for its recharge.

c. LACK OF ACTIVE RECHARGE PRACTICES: Dhanbad has an annual average rainfall of 1300 mm, which has not yet been used effectively to sustain the aquifers.

EFFORTS BY THE CITY

- Under the 15th Finance Commission, Dhanbad Municipal Corporation had implemented 75 rainwater harvesting projects within the municipal corporation area.
- The city administration has initiated shallow aquifer management by developing a comprehensive database of GW sources categorized into borewells, dugwells, heritage sites, etc.. City has also taken into consideration the traditional structures and included them in the inventory.

A study in 35 out of 55 municipal wards spread over 108 locations in both coalfield and non-coalfield areas of the municipal corporation. A detailed Plan of Action was drawn up, and some strategies worked out - .



Profiling and mapping groundwater- based sources in DMC



Identifying appropriate sites for GW recharge through participatory approach



Developing a detailed project report (DPR) in collaboration with DMC;



Formulating and designing the implementation of projects;



Involving local communities in management and monitoring of shallow aquifer

Projects under Implementation

1. Project Site – Jeevan Jyoti School, Ward No 28, Dhanbad Circle

Jeevan Jyoti School in Dhanbad Circle has been identified owing to the dependence of 134 beneficiaries (119 children with special needs and 15 staff)

Works undertaken

- Harvesting rainwater from roof and surface runoff
- Recharging shallow aquifers through a recharge pit
- recharge well and a soak pit
- Repair of dugwell, the only source of water for the school



2. Project Site – Bera Colony, Ward No 30, Dhanbad Circle

The pond water is used year-round for washing clothes and utensils, bathing, cleaning and other non-potable purposes. The colony towards the northern side, named Upar Dhora New Quarter, has approximately 40 hhs with a total of 200 residents. The New Quarter area situated towards the south of the dug well has approximately 30 hhs with 150 residents.

Works undertaken

- Pond desilted
- Reinforced the bunds of the pond on the eastern, western, and southern sides and construction of steps on the northern side
- Silt trap constructed
- Dugwell repaired, and restored through recharge of the shallow aquifer



Project Site – Lakshmi Colony, Ward No 49, Sindri Circle

There are nearly 200 hhs (1000 persons) in the colony, of which 37 hhs (185 persons) live near the dug well.

Works undertaken

- Rooftop rainwater from four housing blocks and surface water has been channelized into the shallow aquifer through recharge pits and recharge well
- Repair of a dug well in use to ensure its longevity both in functionality and existence



TECHNOLOGY CORNER

RIVER CLEAN UP FLOATING TRASH BARRIER

A robotic device with artificial intelligence, which collect and dispose of plastic and debris. aids in reducing solid waste pollution in rivers and mitigates the flow of plastic pollution into the ocean. Floating trash Barriers, designed as standing mesh structures with hydrostatic and hydrodynamic stability, effectively capture solid waste while allowing water to flow freely. The strategic placement of the barriers diagonally across the water ensures that trash is carried to one end, where it can be easily recovered. This works on natural flow of water, no fossil fuel or boat or crew is required. It allows boat to cross but traps the floating debris or plastics. This brings the trash and plastics to the riverbank for removal by land based equipment, making it the cheapest solution on a per ton basis.

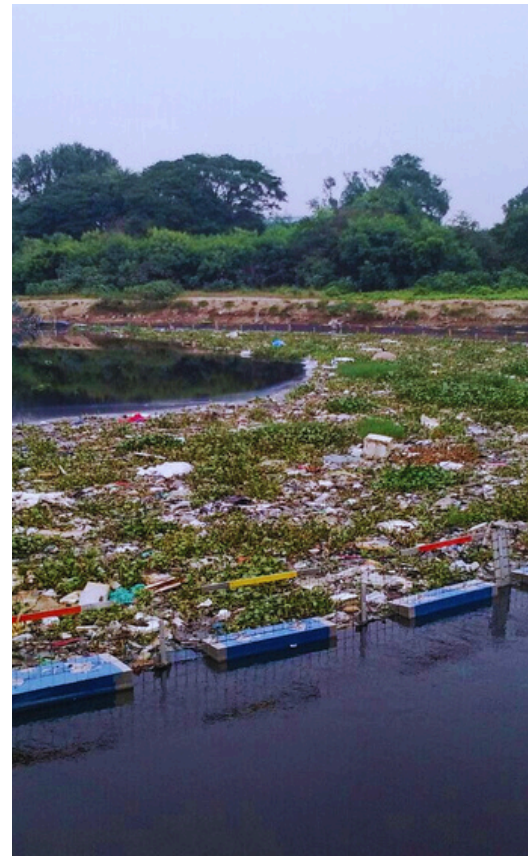
Implemented Projects

This floating barrier has been deployed in 8 Indian cities across 40 locations and has stopped thousands of tons of plastics from reaching the sea.

After initial trials in Bangalore and Chennai, in 2017, these floating barriers were laid in the Cooum River at nine locations on a pilot basis to trap trash and water hyacinth. Cooum was considered one of the dirtiest rivers before this. This technology helped clean the surface trash and that improved the image of the river although the water quality was still poor.

In 2018, almost 22000 Tons of trash were arrested, including 2200 Tons of plastics as per data provided by Chennai city corporation to 'The Hindu' Newspaper. This quantity was a world record for any river clean-up solution in the world. There were no other solutions at work at that time. These installations were done at a cost of Rs.85 lakhs.

Floating trash barrier deployed on the Cooum river in Chennai



COSTING



Rs.35 lakhs for 100 meter length of barrier for 60 meter wide stream.



15% of capital cost per year for replacements because of wear and tear.

Technology Provider Contact Details

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RIVER CITIES ALLIANCE
A city led movement



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