QUARTERLY NEWSLETTER

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# 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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RIVER CITIES ALLIANCE A city led movement

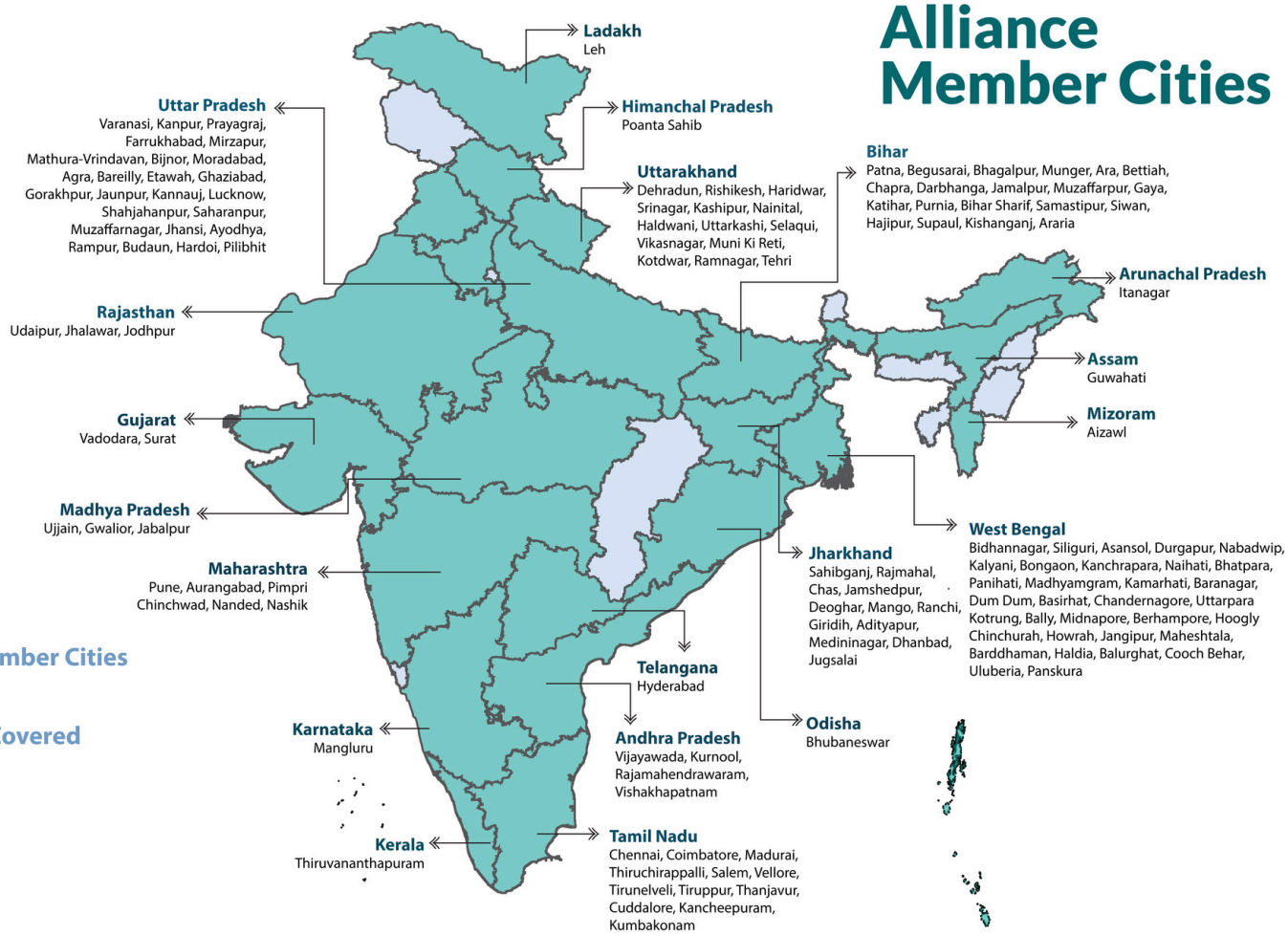
NAMAMI GANGE

NIUA National Institute of Urban Affairs

WATER & ENVIRONMENT VERTICAL

# RCA CITIES SNAPSHOT

## Alliance Member Cities




**RCA Member Cities**
**142**

**States Covered**
**20**

## TRAINING PROGRAM ON URBAN RIVER MANAGEMENT

A two-day training programme on 'Managing Urban Rivers - From Planning to Practice' was organised in Ranchi, Jharkhand from 29th February to 1st March 2024. The training aimed at introducing the "Urban River Management Plan" Framework to the member cities of the RCA in Jharkhand. The workshop saw the participation of more than 22 officials from 14 cities of Jharkhand (Adityapur, Medininagar, Chas, Deoghar, Phusro, Mango, Jugsalai, Dhanbad, Giridih, Chirkunda, Sahibganj, Rajmahal, Ranchi & Jamshedpur).

Shri Amit Kumar, IAS, Director (SUDA) & Project Director (SPMG) delivered the opening address and encouraged participants to delve deep into different aspects of urban river management. Shri Nalin Srivastava, Deputy Director General, NMCG addressed the gathering and explained the importance of preparing and implementing the Urban River Management Plans (URMPs). Shri G Asok Kumar, Director General, NMCG delivered the keynote address to the training participants and appraised the cohort about NMCG's new initiative of developing 60 URMPs for river cities across the Ganga Basin states of Uttar Pradesh, Uttarakhand, West Bengal, Bihar and Jharkhand. In the first phase 25 URMPs shall be developed (this includes 5 member cities from Jharkhand State).

At this training event, two more cities from Jharkhand – Phusro and Chirkunda joined the River Cities Alliance, taking the total count of RCA cities from Jharkhand to 14. During the course of this two-day programme, participants delved into the intricacies and interlinkages between different objectives of the of URMP and explored different strategies and interventions possible under each of the objective that can be implemented within their cities.

## GLIMPSE OF THE 2-DAY TRAINING PROGRAM ON URMP



## WRITE SHOP ON “RE-IMAGINING URBAN RIVERS” – SEASON 4

"Re-imagining Urban Rivers" Thesis Competition, a dynamic collaboration between the National Institute of Urban Affairs (NIUA) and the National Mission for Clean Ganga (NMCG), aims to ignite the creative spark in 20 talented undergraduate and postgraduate students from across India. These students then embark on a mission to transform urban river stretches with innovative ideas and strategic planning. This year, from all over India, 17 stellar participants were chosen (8 from UG and 9 from PG).

To hone the skills of the students further, a three-day write-shop was conducted in Delhi from March 13 -15, 2024, in association with NMCG wherein all finalists were invited to participate in the Write-shop, commencing their thesis work. The students discussed their project ideas with experts from NIUA and NMCG. These interactions were aimed at helping students refine their proposals while gaining insights from different domain experts. During the course of the event, Smt. Debashree Mukherjee, Secretary (DoWR, RD & GR), Ministry of Jal Shakti, Shri Brijendra Swaroop, DG (AC), NMCG, Prof Debolina Kundu, Director (AC), NIUA and Shri Rajiv Ranjan Mishra, Chief Technical Advisor, NIUA shared their valuable words and experience insights to the students.

The students were also introduced to the URMP framework. The students were exposed to the objectives of the Urban River Management Plan (URMP), gaining an understanding of the emphasis placed on each objective and the interlinkages between them. They also developed some understanding of the potential projects/interventions under each objective. Another key highlight of the writeshop was a story board exercise where the students developed a comic focusing around the objectives of the URMP.

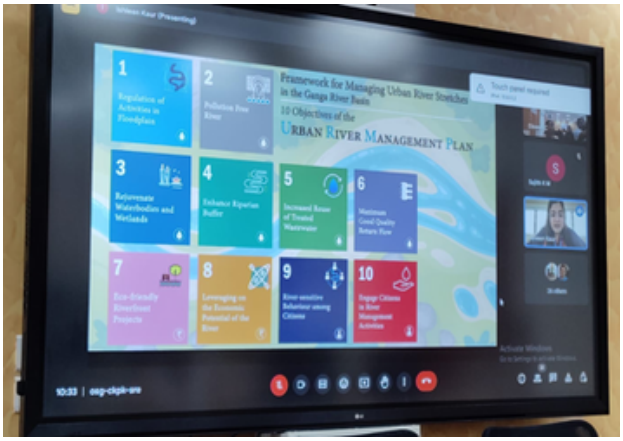
## GLIMPSE OF THE 2-DAY STC WRITESHOP




## FACULTY DEVELOPMENT PROGRAMME ON URBAN RIVER MANAGEMENT

A Faculty Development Programme titled 'Climate Resilience Through Water Sensitive Approaches & Practices in Urban Areas' was conducted by the Department of Architecture, Rajiv Gandhi Institute of Technology, Kottayam on Feb 15th 2024. The target audience of the FDP was the faculty of Architecture/ Planning/ Civil Engineering and practising Architects/ Civil Engineers.

An online session on urban river and water management was undertaken by the NIUA team (Lovlesh Sharma, Manju Rajeev Kanchan and Ishleen Kaur) that focused on the Urban River Management Plan Framework and how it can be translated onto the ground through various interventions, Indigenous practices and their relevance in building climate resilience of Indian urban areas and integrated urban water management within Master Plans to focus attention on resolving water stresses through planning and built environment design.




## CAPACITY BUILDING PROGRAMME ON PREPARING WATER SENSITIVE MASTER PLANS

As a part of advocacy and capacity building initiatives under the project, a two-day workshop was conducted from 18th-19th March with the students at the School of Planning and Architecture, Vijayawada on preparing Water Sensitive Master Plans. The primary objective of the workshop was to engage young minds for mainstreaming river thinking into the master planning process using the case of Rajamahendravaram (Rajahmundry) - a vibrant city nestled along the Godavari – also known as the Dakshin Ganga. Together with the NIUA team, the students delved into the intricacies of crafting a water-sensitive master plan for Rajahmundry and addressing the unique challenges faced by the city thriving with industrial activity and religious tourism centred around the river. Over two days, the students explored various dimensions of the Master Plan, seamlessly integrating water-sensitive thinking into various aspects of the Master Plan, ranging from shelter and transport to urban expansion, economy and infrastructure.

Day 1 was spent introducing the students to the relevance of the master plan for achieving water-sensitive cities, the overview and concept of the Urban River Management Plans (URMP) Framework and the 10 objectives while also hearing from the students; their current work for the city of Rajamahendravaram followed by hands on exercises. On Day 2, the idea of river-sensitive master planning and the various master plan instruments for groundwater management were addressed post and the students were asked to incorporate the workshop learnings in their studio exercise of Rajamahendravaram through means of interactive exercises.

These sessions were structured into 3 key components- presentations, moderated discussions and group activities. Towards the end of the two-day workshop, the students presented their recommendations to make the Master Plan of Rajamahendravaram sensitive towards the Godavari River.

The workshop was a resounding success as the students were not only exposed to a new way of thinking but they also got to understand upfront how to deal with master planning from a river- centric lens. There was a tremendous learning curve that could be observed in students as they were able to visualize and attempt holistically to ensure that the river gets integrated in all the sections of the Master Plan of Rajahmundry.

## COMPENDIUM ON 'STATE OF THE ART TECHNOLOGIES FOR WATER / RIVER MANAGEMENT'

NIUA-NMCG has prepared a compendium on the state-of-the-art technologies that are available in the market for the management of water resources with a particular emphasis on rivers. The compendium shall be in the form of an online dashboard as well as in hardcopy, to help connect cities (technology seekers) and vendors (technology providers). In this regard, an open call was launched to invite entries from technology providers and 60+ entries were received across various themes around urban water/river management. In the last quarter (Oct-Dec 2023), all the entries received were sorted compiled and shared with the sector experts for another round of assessment.

All the technologies are categorized under the four themes i.e. Infrastructure Solutions, Digital Solutions, Nature based Solutions and Management Solutions. The technology solutions received addresses all the major aspects and challenges faced by urban rivers such as encroachment control, e-flow improvement, water bodies rejuvenation, pollution control, groundwater augmentation, mitigating urban floods, biodiversity improvement, improved data management etc.


# CITY CORNER

# BHUBANESWAR, ODISHA
## *Drain Rejuvenation using Nature-based Solution*

**City Area - 148.1 sq.km** **Population - 8.37 lakh**

Bhubaneswar, the capital city of Odisha State is famously known as the city of temples; some of them date back to the 6th Century. It is also the most populous city of the State, having a population of around 9 lakh. The Bhubaneswar Development Planning Area stretches across 422 sq.km. (an addition of 173 revenue villages) in which the municipal corporation limit covers 148.1 sq.km. The city is one of the first planned cities in India, and its modern outlook was envisioned by German architect Otto Königsberger in 1949. The city planning emphasised the neighbourhood concept, parks and open spaces in addition to ease of connectivity. The city is spread across 67 Census wards and has been experiencing very high growth both in terms of urban built as well as population. There are around 116 authorised and 320 unauthorised slums.

The city is located in the south of the Mahanadi River, and its geography is bounded by the Kuakhai River on the east; the Daya River on the south, and Chandaka Wildlife Sanctuary and Nandankanam Zoo on the northern and western parts. Natural drains, wetlands, marshes and riparian buffers are conspicuous Ecosystems present in the city. Like many other cities in India, the natural Ecosystems in the city are also facing threats of growing urbanisation.

The temple city of Odisha is also amongst the fastest-moving city in East Zone under the category of more than 10 lakhs population in Swachh Survekshan. It is also one of the two cities in Odisha state selected for the smart city development mission. Around 26 of the 35 projects have so far been completed at Rs 1,552 crore as part of the Smart Cities Mission (SCM). Various projects being implemented by the city, inter alia, include the setting up of Integrated Control & Command Centres (ICCCs), Place-making, Smart Roads, Urban Knowledge Centre, Upgradation of Stadium, Market Area Re-development, etc.

The unique geo-climatic conditions in the eastern coastal plains of the state, make Bhubaneswar the capital city more vulnerable to multiple natural hazards like earthquakes, heavy winds, cyclones, floods etc. The hazard and vulnerability assessment indicates the city is prone to cyclone winds, floods, water logging, epidemics, and heat waves. For the past three decades, Bhubaneswar city has been experiencing unprecedented contrasting extreme weather conditions; from heat waves to cyclones; from droughts to floods and has become one of the hottest Indian cities in recent times.

The Bhubaneswar city has an undulating topography, with a major slope from northwest to east. Several natural drainages follow this slope and merge in the lowland marshy areas, and ultimately in the Daya river. There are 14 such natural drains varying in their lengths and widths, some of which pass through high-density settlements. These drainages form micro catchments within the city boundary and have been modified with rapid urban development. This can potentially impact the overall natural functions of natural drains like flood mitigation, and groundwater recharge jeopardising the overall water security of the city.

A natural drainage map and a contour map were created for the Bhubaneswar city. The drains cover an area of about 103.43 sq. km. with a drainage length of 37.18 km. A micro-catchment map was created for all the natural drains flowing through the city to understand the characteristics of the catchment area. The 13 natural drains were forming 10 different micro-catchments. The drain no. 10 with an area of around 10 sqkm discharges water into the Gangua nala, which then meets the Daya River. The drain no. 10 is critical for the city's stormwater management and also for regulating the quality and quantity of flow in Daya River.

**The Need for Rejuvenation**

The land use land cover changes due to urbanisation and also an encroachment in the source water body and development in the catchment of the drain has significantly reduced the total area for storage of rainwater, which resulted into an increase in the number of flooding events in the city along the drains. The wastewater ingression from surrounding localities had further worsened the situation.

The polluted water flow in the drain was conducive to mosquitoes breeding, resulting in health issues for the communities residing along the drain. The frequent cyclones in the past few years perhaps in light of changing climatic conditions have made things more complex for the city. The recent cyclone in the city has damaged the tank along the drain which was in operation till Dec. 2019. The authorities, in consultation with subject experts, identified rejuvenation of the drain as a long-term solution to prevent flooding, reduce pollution and overall act it as a sponge for the surrounding area and provide a healthy and liveable space for people by connecting them with nature.

The rejuvenation work of D-10 is being carried out between Vidyut Marg to Sachivalya Marg, 900 meter stretch in a phased manner. Rejuvenation of this stretch is undertaken by the Bhubaneswar Municipal Corporation (BMC) in the first phase. A lake/water pool is being developed at the end of this stretch under the Smart Cities Project, which will be used for recreational purposes. The estimated cost for the rejuvenation of this stretch is around 1.25 cr. As the rejuvenation process involves Nature Based Solutions (NbS) instead of conventional methods and engages Self Help Group members for implementation, the total cost of the project has been drastically reduced.


Schematic showing components of rejuvenation

Along with the rejuvenation of Drain 10, it is also envisioned to convert the drain area as a recreational space for citizens. The BMC is leveraging the existing infrastructure of NICCO Park in the drain's vicinity by redeveloping it.

Earlier, the park had a boating facility, a haunting house, a musical fountain, a cinematrix hall and 12 different rides for both children and adults. However, most of the rides and recreational facilities were defunct due to a lack of maintenance and damage due to cyclone FANI.

Currently, the park has a footfall of more than 100 people, which is assumed to increase after the rejuvenation of D10 and redevelopment of park.

A lake towards the end of the drain is being developed as a boating facility. The proposed lake zone comes under three wards (28, 35 and 36).

Before

After

RIVER CITIES ALLIANCE
*A city led movement*

National Institute of Urban Affairs

WATER & ENVIRONMENT VERTICAL

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