

SUMMARY OF PROCEEDINGS

Capturing the glimpses and learnings from the first annual meeting of the **River Cities Alliance**



DHARA
2023

**Driving Holistic Action
for URbAn Rivers**

13-14 February 2023
Pune, Maharashtra
India



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for URbAn Rivers**

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River Cities Alliance

RIVER CITIES ALLIANCE
A city led movement



01 Story of the River Cities Alliance

Background of why, when, and how the River Cities Alliance (RCA) was established. Within one year of its launch, the number of Alliance member cities increased from 32 to 108.

It's the beginning of a paradigm shift for river management in India. Read on...

02 About DHARA 2023

Driving **H**olistic **A**ction for **URbAn** Rivers (DHARA) is an annual convention of RCA member cities where they can exchange ideas, knowledge, and experiences in managing urban rivers.

DHARA 2023 has initiated an annual tradition that will continue in the coming years to provide a dedicated platform for river cities to discuss aspects related to urban river management. Read on...

03 Glimpses from DHARA 2023

The two-day event hosted in Pune on 13 and 14 February 2023 was brimming with diverse ideas and was effective in starting conversations that would amplify the movement around urban rivers. As one city official said, "**We saw, We learnt, We left inspired**". **Read on...**

[Key Highlights and Key Takeaways from DHARA 2023](#)

DAY 1:
13th Feb

Proceedings

Official Opening Session

- Welcome Address
- Opening Address
- Celebrating the completion of 100 river cities joining the RCA
- Keynote Address
- Vote of Thanks

- Session 1** Innovative examples of river management within India
 - Session 2** Innovative international case studies for river management
 - Session 3** Press conference of dignitaries with media
 - Session 4** Strengthening the institutional agenda for urban river management
 - Session 5** Voices of the Youth
 - Session 6** Fun and Games: Know your River City
- Cultural Program
Gala Dinner

DAY 2:
14th Feb

Proceedings

- Session 7** *Ghat pe Yoga: Yoga session at river bank*
- Session 8** *Visit to Mula Mutha riverfront*
- Session 9** *Stories from RCA cities*
- Session 10** *Financing river-related projects & interventions*

Breakout Sessions

1. Operationalising nature-based solutions in river cities
2. Inclusive Riverfront Development
3. Solid Waste Management in India
4. Experience sharing on city-wide inclusive sanitation
5. The role of groundwater for healthy rivers

Valedictory Session

- Launch of Compendium of 75 River Practices
- Awards for Poster Competition
- Announcement of the Pune Declaration for the River Cities Alliance
- Inspirational Message for River Cities
- Announcement for DHARA 2024

Hon'ble Prime Minister's Message

It is a matter of great pride to share a message from our Hon'ble Prime Minister, Sh. Narendra Modi, who expressed his delight, and best wishes, for the success of DHARA 2023.



सत्यमेव जयते

प्रधान मंत्री
Prime Minister
MESSAGE

It is heartening to learn about the organization of Driving Holistic Action for Urban Rivers (DHARA 2023) Forum in Pune by National Institute of Urban Affairs (NIUA). The fact that the NIUA is serving as the Urban 20 (U20) Technical Secretariat under India's G20 Presidency enhances the pride and honour associated with the occasion.

The U20 theme for 'ensuring water security' underlines one of the major concerns facing nations and societies the world over. Water availability is extremely crucial, especially given the challenges of the 21st century.

Water for every household and every field is essential for individual life and the economy. Fast-paced growth of a nation is inconceivable without water security. One of the priority areas of U20 is to promote urban water security. Good health of rivers is of critical importance in increasing the water security of cities.

Rivers have always occupied a central place in India's heritage and ethos and have traditionally been sources of spiritual inspiration, cleansing and penance. A critical component of the environment and our ecosystem, we have accorded divine status to rivers, worshipping them as a life-giving mother.

River conservation is one of our highest priorities and a way of life in different parts of the country. For the last few years, we have made Namami Gange a template in our mission of river conservation, particularly in urban areas. We are striving to introduce a new thinking on river cities. The establishment of 'River Cities Alliance' (RCA) connecting 95 river cities across the country is one such step in this direction.

The participation of Central and State government dignitaries, international and national experts, NIUA and National Mission for Clean Ganga (NMCG), think tanks, NGOs and thought leaders will lead to engaging discussions on a wide gamut of issues including innovative solutions such as lake and pond rejuvenation, decentralized used water management, enhancing river-related economy, groundwater management and flood management.

The presence of international experts will offer an insight into interesting solutions such as sponge cities, reuse of used water, river health monitoring, pollution control, water sensitive city design and floodplain management practiced in different parts of the world.

Amrit Kaal of next 25 years is an opportunity to develop an important dimension – 'Water Vision @ 2047' to achieve the collective goal of water conservation and enhancing water security and building a glorious, self-reliant India and through it, a better world.

Best wishes to all the stakeholders for successful deliberations at DHARA 2023 and develop a futuristic vision to enhance water security.

(Narendra Modi)

New Delhi
माघ 21, शक संवत् 1944
10th February, 2023



Sh. Narendra Modi
Hon'ble Prime Minister
of India



River Cities Alliance (RCA)

A platform for River Cities for
the following:

To discuss
and exchange information on
aspects that are vital for the
sustainable management of
urban rivers

To receive dedicated
technical and handholding
support for implementing
interventions for river-
sensitive development

RIVER CITIES ALLIANCE
A city led movement



To have access to state-of-
the-art knowledge,
frameworks, and tools for
urban river management

To help strengthen the
governance aspects
related to urban river
management



About River Cities Alliance

Established by the National Institute of Urban Affairs (NIUA) and National Mission for Clean Ganga (NMCG), the River Cities Alliance (RCA, <https://niu.in/rca/>) came into existence on 25th November 2021 as a platform to facilitate the discussion and exchange of information pertaining to aspects that are vital for sustainable management of urban rivers.

RCA has been envisaged as a city-led movement for promulgating river-sensitive planning and development in Indian river cities.

The inspiration for RCA came from the Hon'ble Prime Minister's call for river-sensitive development. In the 1st meeting of the National Ganga Council in December 2019, he stated:

"There is a need for a new river-centric thinking in planning for cities on the banks of rivers. Cities should be responsible for rejuvenating their rivers. It has to be done with the regulatory mindset and developmental and facilitatory outlook."

The vision and operations for RCA will be determined by the member cities. However, to allow member cities enough time to set up their own structure for managing the Alliance, a Secretariat has been established at NIUA in collaboration with NMCG to take on this responsibility initially for a period of 3 years.

It is a matter of pride that what started off with 32 cities has now become a family of 108 cities within one year of its launch.

RCA is a stepping stone in ushering in an era of river-sensitive cities in India.

100+
Alliance
Member
Cities

Uttarakhand

Dehradun, Rishikesh, Haridwar,
Srinagar, Kashipur, Nainital,
Haldwani, Uttarkashi, Selaqui,
Vikasnagar

Uttar Pradesh

Varanasi, Kanpur, Prayagraj, Farrukhabad, Mirzapur,
Mathura-Vrindavan, Bijnor, Moradabad, Agra,
Bareilly, Etawah, Ghaziabad, Gorakhpur, Jaunpur,
Kannauj, Lucknow, Shahjahanpur, Saharanpur,
Muzaffarnagar, Jhansi, Ayodhya

Bihar

Patna, Begusarai,
Bhagalpur, Munger, Ara,
Bettiah, Chapra,
Darbhanga, Jamalpur,
Muzaffarpur, Gaya,
Katihar, Purnia, Bihar
Sharif

West Bengal

Bidhannagar, Siliguri, Asansol, Durgapur,
Nabadwip, Kalyani, Bongaon,
Kanchrapara, Naihati, Bhatpara, Panihati,
Madhyamgram, Kamarhati, Baranagar,
Dum Dum, Basirhat, Chandernagore,
Uttarpara Kotrung, Bally, Midnapore,
Berhampore, Hoogly Chinchurah, Howrah,
Jangipur, Maheshtala, Barddhaman,
Haldia, Balurghat, Coochbehar

Jharkhand

Sahibganj, Rajmahal, Chas,
Jamshedpur, Deoghar, Mango,
Ranchi, Giridih, Adityapur,
Medininagar, Dhanbad,
Jugsalai

Rajasthan

Udaipur, Jhalawar, Jodhpur

Gujarat

Vadodara, Surat

Madhya Pradesh

Ujjain, Gwalior

Odisha

Bhubaneswar

Maharashtra

Pune, Aurangabad, Pimpri
Chinchwad, Nanded, Nashik

Telangana

Hyderabad

Karnataka

Mangaluru

Andhra Pradesh

Vijayawada,
Rajamahendravaram,
Kurnool

Tamil Nadu

Chennai

Kerala

Thiruvananthapuram



DHARA 2023

DRIVING HOLISTIC ACTION FOR URBAN RIVERS

HYATT PUNE, PUNJAB, INDIA

13-14 FEBRUARY 2023

About DHARA 2023

Driving Holistic Action for Urban Rivers (hereafter abbreviated as DHARA 2023) is the first annual meeting of the members of RCA. It also marks the first anniversary of the RCA. The primary objective of DHARA 2023 was to provide member city representatives (Municipal Commissioners/Executive Officers, and Senior officials) with an opportunity to spend dedicated time brainstorming, discussing, and learning solutions for urban river management.

DHARA 2023 specifically looked to:

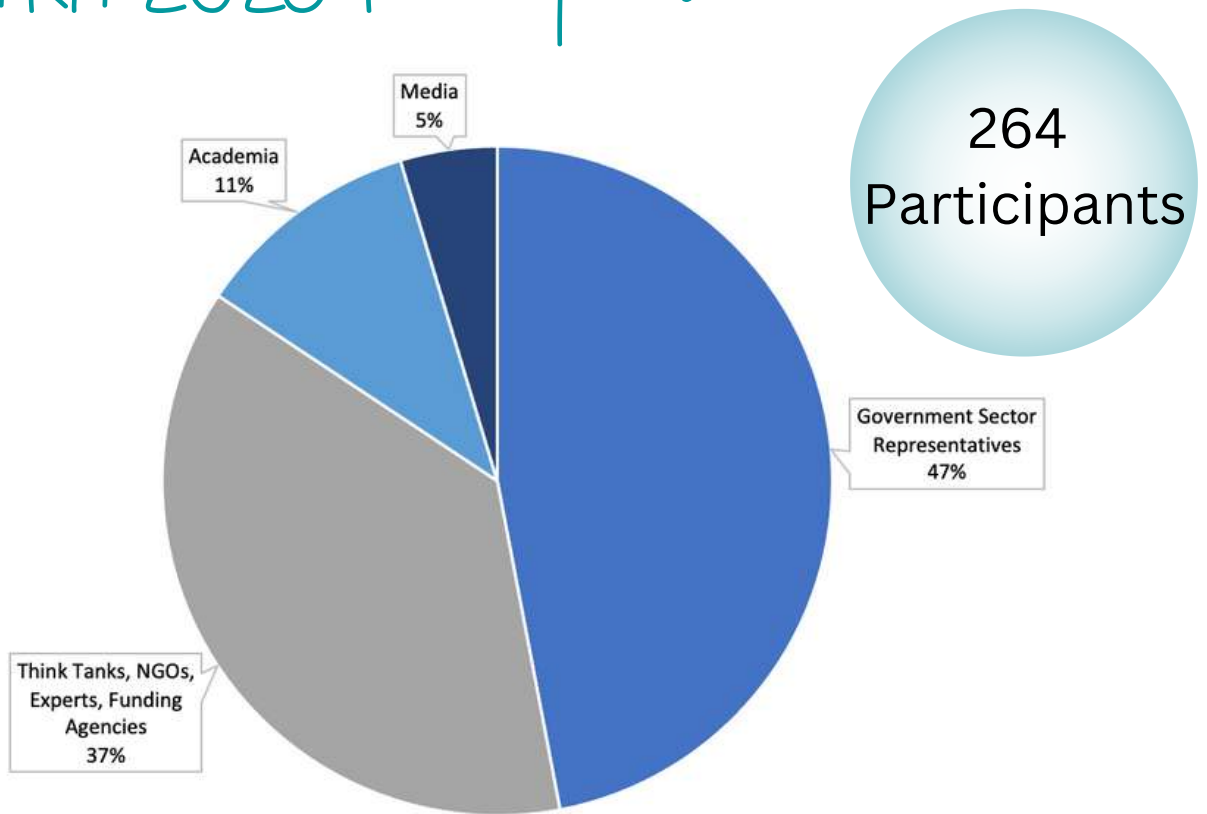
- Inspire member cities to proactively take up progressive action for urban river management in their cities.
- Shed light on some of the unaddressed issues and challenges for river management in cities, which would help NIUA and its partners in preparing a work plan.
- Facilitate inter-city dialogues and communication to promote peer-to-peer learning.

DHARA 2023 has strong synergies with the Urban20 (U20) initiative under the aegis of India's G20 Presidency. One of the thrust areas of U20 is to promulgate urban water security, and it is a well-established fact that healthy rivers play a vital role in enhancing the overall water security of the city.

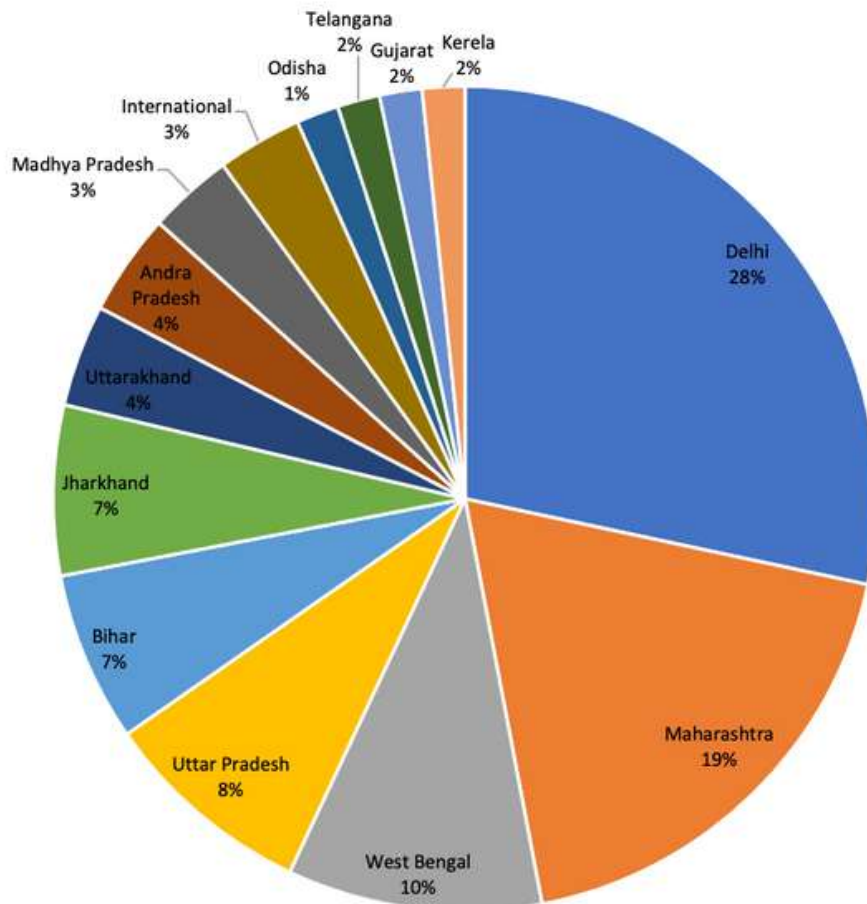
Pune (a member city of RCA) hosted DHARA 2023 in Hyatt Hotel, Kalyani Nagar, on 13-14 February 2023. NIUA and NMCG supported the Pune Municipal Corporation (PMC) in organizing the event.

DHARA 2023 featured representation from RCA members; Central and State government dignitaries; Thinktanks; NGOs, Students, and young leaders; National and international experts; Funding agencies; Private sector; Media, and others.

DHARA 2023 Participants



STATE-WISE REPRESENTATION DIVERSITY



DHARA 2023 Participants

60
River
Cities

13
States

44
ULB
Heads

85+
City Officials

42
Subject
Experts

Reps from
32
Organizations

MHT
BIOME
ACWADAM
CPR CCPEF
CEEW GIZ
WRI ADB
WOTR CSE
Alluvium KFW
World Bank WII, Dehradun
Waterlab Solutions Jeevit Nadi
India Bangladesh River Recycle IIHS
Swachhta Pukare Asar Social WWF

Aga Khan
Studio
Instill
US Army
Corps
IWA

Athena
Infonomics

Ecosattva

Bhawalkar Ecological
Research Institute

KRIVIA, Mumbai

MIT, Argbd

BNCA, Pune

NIT Calicut

Amity Delhi

BBDU, Lucknow

SPA Vijaywada

Fergusson college, Pune

VBIT Hyderabad

JNEC Aurangabad

AMU

IIT Kharagpur

IGNDTU, Delhi

SPA Bhopal

10
Technology
Providers

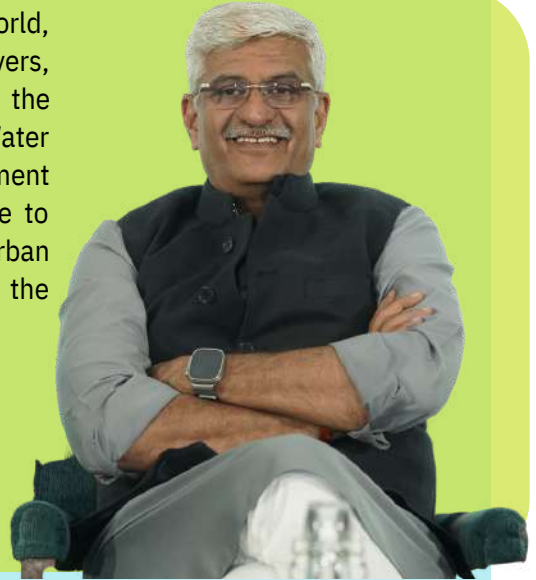
17
Educational
Institutes

Guests of Honour

"India is now investing the most in the water sector in the world, totalling \$240 billion. This includes efforts to connect rivers, identify, assess, and recharge groundwater, conduct one of the world's largest aquifer mapping programmes, and create a Water Vision 2047 for all states in which water security and management is at par with economic development. Our goal must now be to connect common citizens to the efforts being led by cities, urban local bodies, and states. Only then will we be able to solve the problem holistically and collectively.

This way, we will respect water as our ancestors have."

Sh. Gajendra Singh Shekhawat
Hon'ble Minister, Ministry of Jal Shakti



"The RCA currently consists of 107 cities, including 16 SMART cities, have connected 72 rivers across the nation.

Security of the water resources is a shared responsibility. The RCA and those in attendance today emphasized the significant progress made in water resource protection and sustainable urban development as a result of the collaboration of the two ministries. We anticipate being able to include 150 more cities in our family by the time of the following DHARA meeting next year.

We also need to spread the message of Swachh Dhara, Sampann Kinara to the citizens."

Sh. Kaushal Kishore
Hon'ble Minister of State,
Ministry of Housing and Urban Affairs



Key Action Points from DHARA 2023 for members of The RCA

1.

Good-quality data for efficient management of rivers

The importance of good-quality data for the efficient management of rivers cannot be overemphasized. From floodplain demarcation to leveraging the economic value of water, the role of data is paramount. Unfortunately, the availability and quality of such data in the RCA member cities is inadequate. The RCA Secretariat will develop an advisory of data requirement for different aspects of river management and share this with all member cities, who will in-turn make every effort in plugging the data gaps in their respective cities to the extent possible. The relevant data will also be collated by the Secretariat and displayed on a web-based dashboard.

2.

Recharging groundwater for river health: "Catch the Rain"

A common feature in a majority of RCA cities is depleting groundwater levels. Given that groundwater contributes as baseflow to the rivers, especially in the dry season, a healthy groundwater situation will have a positive bearing on the overall health of the river. To facilitate this, member cities will "Catch the Rain" where it falls, when it falls, through various rainwater harvesting mechanisms. Members acknowledged that doing so will not only benefit the river, but also help mitigate instances of flooding and water shortages.

3. Increasing peer-to-peer learning

A vital characteristic of the RCA is to facilitate the exchange of ideas and knowledge among the member cities. Members acknowledged that such exchange cannot be only restricted to events such as DHARA but there must be bilateral exchanges between members throughout the year to truly match the spirit of RCA. To facilitate this, the RCA Secretariat will prepare an inventory of good practices/projects/initiatives taken by the member cities and make this available to everyone. Cities will then identify the practice/project/initiative that they would like to imbibe and plan for bilateral interactions.

4. Building capacities and leadership on urban river management

It is increasingly becoming evident that river management is an interdisciplinary endeavor, with multiple sectors involved. Furthermore, climate change is adding new complexities. The technical and operational capacities of city officials in interdisciplinary thinking is fairly limited. Going forward, the RCA Secretariat will curate, design, and organize capacity-building programmes in this regard. These programmes will cover aspects related to planning and management of urban rivers to progressive leadership programmes for climate change management. Member cities will ensure the right participants are sent for these programmes.

5. Strengthening river-citizen connect

A core stakeholder in the river management machinery is the general citizen, who is often unaware of the role they have in the process. Member cities will organize a range of events and initiatives—clean up drives, cultural programmes, ghat pe yoga, nature walks, inter alia—to improve the river-citizen connect.

Some key highlights of Dhara 2023

- **PM's message** for DHARA 2023 Pg. **01**
- **Jal Kalash Ceremony:** A symbolic gesture from RCA members for their rivers Pg. **12**
- **Pune Declaration:** A commitment by RCA member cities for the year 2023 Pg. **13**
- **A 'Swachh partnership':** An attempt to maximize reuse and recycling of waste generated during DHARA 2023 Pg. **14**
- **Technology Exhibition:** An endeavour to showcase the state-of-the-art technologies for river management Pg. **15**
- **Financing** river-related projects & interventions Pg. **46**

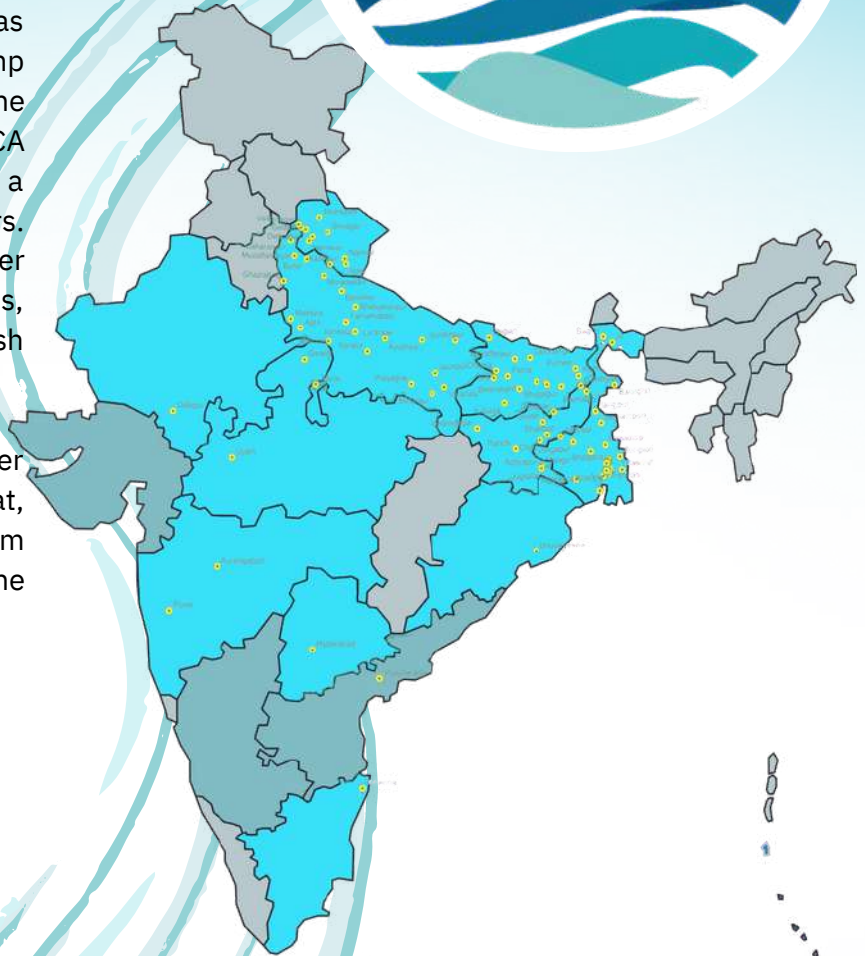


Jal Kalash Ceremony

Another unique element of DHARA 2023 was the Jal Kalash ceremony, which was organized in lieu of the traditional lamp lighting ceremony. In the lead-up to the event, municipal commissioners from RCA member cities were requested to bring a bottle of water from their respective rivers.

On the first day of DHARA 2023, the water from these bottles was mixed into five urns, which were kept aside for the Kalash Ceremony.

In the opening session, the Hon'ble Minister of Jal Shakti, Shri Gajendra Singh Shekhawat, and other dignitaries poured this water from the urns into a larger pot, as a show of the Alliance's strength.

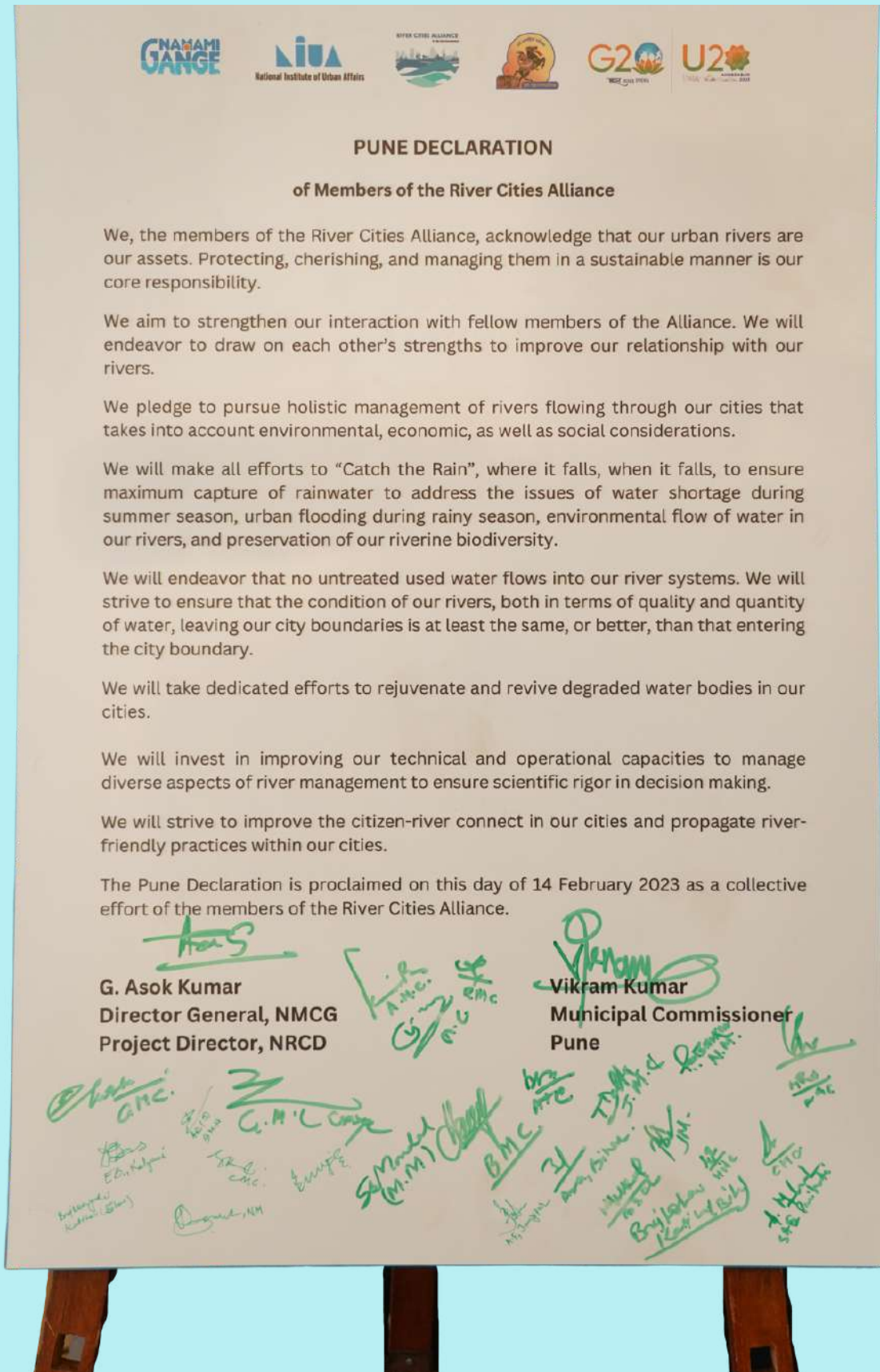


River Water
from 45+
Alliance
Member Cities



Pune Declaration

At the conclusion of DHARA 2023, all members of the River Cities Alliance pledged to pursue the holistic management of rivers flowing through their cities. The heads of member cities signed the declaration to take the river-sensitive urban development agenda back to their cities.





A Swacch Partnership

It is a known fact that waste management is critical for ensuring sustainable and healthy rivers.

This is why DHARA 2023 ensured maximum reuse and recycling of waste generated during the 2-day event.

To do so, we partnered with SWaCH, a cooperative of waste pickers in Pune. Every day in the evening, a vehicle from SWaCH visited the venue to segregate and collect all waste generated during the day.

The waste was then taken to appropriate reuse and recycling centers in Pune.

SWaCH is India's first wholly-owned cooperative of self-employed waste collectors and other urban poor. It is an autonomous enterprise that provides front-end waste management services to the citizens of Pune.



Technology Exhibition

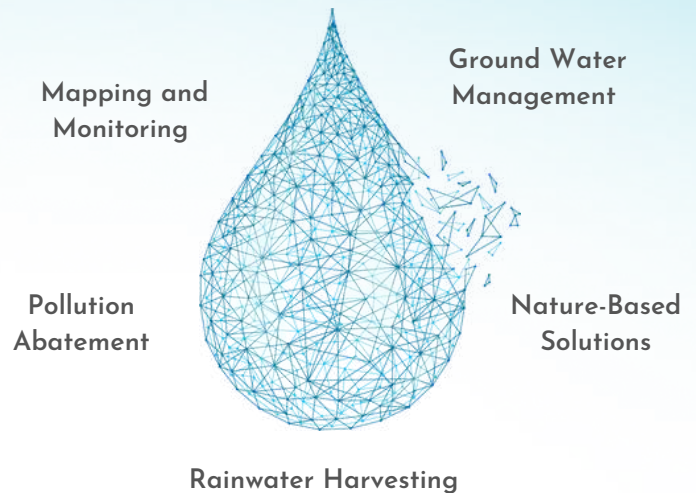
Technology is improving by leaps and bounds in every sector. River management is no different. The advancement in technologies to manage different aspects of the river are truly remarkable.

The purpose of the technology exhibition was to showcase some truly innovative and state-of-the-art products that would be interesting to the members of the RCA.

An open call was launched in the lead-up to the event to invite technology providers to showcase their products. A jury panel comprising five experts evaluated all entries and selected the ten most relevant and innovative products.

The technology providers were provided with a dedicated space to display their products and engage with the 250+ participants. The exhibition sought to bridge the gap between solution seekers (cities) and solution providers (innovators & entrepreneurs) and explore relevant and innovative technology/products to address the common challenges of urban river management.

THEMES



Name of the Jury Members for finalizing the technology

1. Mr. Uday Bhonde, NIUA
2. Mr. Lovlesh Sharma, NIUA
3. Mr. Rishabh Chaudhary, NMCG-PMC
4. Ms. Ruch Tomar, NMCG-PMc



Technology Brief

Nano-bubbles Tech Private Limited

Nano-bubble aeration is an emerging area of science and engineering. The main advantage of nano-bubble aeration is the significantly higher surface area per cubic meter of air it can achieve. The innovator is providing in-situ treatment with oxygen/ozone nano-bubbles without using any chemicals.

Permeable Concrete Solutions Pvt Ltd.

The product developed, captures and recycles Rainwater/stormwater run-off from roads, at the kerb, and redirects water for proper utilization, irrigation of vegetation and protection of trees

River Recycle

The technology effectively cleans the rivers from plastic pollution and the circular business model provides hosting communities with decent jobs, social and environmental improvement. Waste management systems is installed on the shores of the most polluted rivers, collecting and recycling plastic waste and floating debris

Bhawalkar Ecological Research Institute (BERI)

BioSanitizer Ecochips developed by the BERI, are the seed of Invisible Forest. They grow in polluted water or air, within a few seconds. They need no space or human help (no operating cost), convert pollution into resources, without any discharge of sludge, reject or Green House Gases

BacTreat Environmental Solutions LLP

The wastewater treatment system is a decentralised two-stage vertical flow constructed wetland (VFCW) treatment system in the tropical climate of India. The special feature of French VFCW is that it can accept raw sewage in the first stage and so it saves the effort required for the management of primary sludge.

Thazhal Geospatial Analytics Pvt Ltd

The innovator is providing a wide range of services to manage the lakes starting from the digitization of surface water bodies, creating spatial databases, regular monitoring of water and timely alerting the authorities when it's dry.

RootBridge Collab & EHM Consultancy

The innovator provides services for implementing a comprehensive restoration action plan of a water-sensitive ecosystem (lakes, ponds, drains/rivers, marshes etc.), which primarily uses nature-based processes to treat wastewater & its reuse strategies, re-connect catchment with the waterbody.

EcoSattva Environmental Solutions

The app-based technology - BOTRAM has been developed to ensure with a streamlined door-to-door collection of segregated waste and an effective waste recovery mechanism, a waste recovery potential of up to 90% can be achieved.

Rite Water Solutions: ORAIPL

The technology works on the removal of pollutants from drain water through installation of a modular treatment system (MTS) based on the Advance Oxidation Process

Waterlab Solutions Pvt Ltd

The Bhujal App developed by Waterlab Solutions is the first of its kind developed to track water levels in borewells. It works on sonar technology and is totally non-invasive in its use. That means the user does not have to open the borewell assembly to measure water levels. The App requires only an android phone and does not require any other sensors or gadgets to be attached making it a simple technique developed for measuring water levels in borewells.

Glimpses from DHARA 2023



Main Takeaways for DHARA 2023 and way forward for RCA

The following are the main takeaways of DHARA 2023:

1) There is a good appetite among Indian cities for taking action to re-establish the connect between cities and rivers. There is a growing realization that doing so is a win-win scenario that will only help cities reap exponential benefits.

2) The traditional approach to river management in India has been to solely focus on pollution control. However, holistic and contemporary urban river management looks beyond pollution control to include aspects related to social and economics as well. Cities acknowledged the utility of the RCA (peer-to-peer) to help them transition to this new paradigm of managing their rivers.

3) Cities pointed out that a key barrier to implementing solutions for rejuvenating rivers is financing, especially in relatively smaller cities. Agencies like ADB and World Bank are willing to provide loans for such projects, however, the involvement of the State/Central government is required to facilitate this.

4) A related suggestion that emerged in regard to funding for river-related interventions was to tie this to the ongoing urban missions. For example, a portion of the budgets under AMRUT 2.0 and SBM 2.0 could be earmarked for taking up projects for the river.

5) There is a plethora of cutting-edge and state-of-the-art technologies available for different aspects of managing rivers. Many of these are start-ups that will need an enabling environment to scale up their work in the cities. This support could come in the form of empanelment and waiving off the 'three quotations' requirement in the tendering process.


6) Given that the members of the RCA have increased to 108 (and counting), there is a need for a formal mechanism between MoHUA and the Ministry of Jal Shakti to sustain the Alliance. While NIUA may remain the Secretariat of the RCA, it will need to be strengthened with more resources in order to achieve the desired outcomes of the RCA.



RIVER CITIES ALLIANCE

DHARA 2023
DAY 1
13th Feb



A photograph of an official opening ceremony for Dhara 2023. Several men in suits are gathered around a water fountain. One man is pouring water from a golden pitcher into a glass. In the background, a banner for Dhara 2023 is visible, featuring the text 'Dhara 2023' and 'Strategic Action for Urban Rivers'. The scene is set in a well-lit indoor space with a chandelier visible in the upper right.

Official Opening Ceremony

DHARA 2023

DRIVING HOLISTIC ACTION FOR URBAN RIVERS
CITY PUNE, MAHARASHTRA
RIVER 2023



Welcome Address and sharing Hon'ble PM's Message in DHARA 2023

At the onset of the opening ceremony, Mr. Hitesh Vaidya, Director, NIUA shared the Hon'ble PM's message to rekindle aspirations and ambitions for the river cities. He quoted the Hon'ble PM's words:

"River conservation is one of our highest priorities and way of life in different parts of the country. For last few years, we have made Namami Gange a template of our mission of river conservation. Particularly in urban areas, we are striving to introduce a new-thinking on the river cities. Establishment of the River Cities Alliance connecting river cities across the country is one such step in this direction.

Amrit Kaal of the next 25 years is an opportunity to develop an important dimension-Water Vision@2047 to achieve the collective goal of water conservation, enhancing water security and building a glorious self-reliant India, and through it a better world."



Opening Address

Mr. G Asok Kumar, Director General, NMCG started with a note of thanks to the RCA members as well as the Hon'ble Minister of Jal Shakti, Mr Gajendra Singh Shekhawat for his guidance and support. He expressed gratitude towards the Hon'ble PM for his leadership in bringing water to the forefront of the country's development. He also thanked the city of Pune for their novel gesture to host the first meeting of RCA.

Mr. G Asok recollected the journey of establishing RCA, with a strong rationale to bring water into focus for the municipalities. He announced the selection of Namami Gange as the world's top 10 flagship programs by the UN.

He also talked about the National Ganga Council meeting held on 30 Dec 2022, chaired by the PM, and his vision of rivers becoming the driver of economic growth. He introduced the Arth Ganga model - leveraging the economic potential of the rivers. DHARA 2023 became a landmark, with the RCA member cities crossing the 100 mark to reach 108 RCA member cities. He emphasized on breaking the silos for water management with the "Catch the Rain" campaign leading by example.

He ended his speech by motivating the cities to pledge efficient river management, thereby opening gates for tremendous growth.



Keynote Speech

The Hon'ble Minister of Jal Shakti, Shri Gajendra Singh Shekhawat was the keynote speaker for the inaugural session of DHARA 2023. Following are the highlights of his speech.

- Rivers are synonymous with civilizations. After several decades of using our rivers for survival, we must reflect on what we have given back to the rivers; otherwise, our future generation will bear the brunt of water scarcity.
- It is very encouraging to see the RCA grow from 30 to 108 cities in just over a year. This is largely because of the idea propounded by the Hon'ble Prime Minister, which facilitated the inter-ministerial coordination and cooperation between the Ministry of Jal Shakti and the Ministry of Housing and Urban Affairs for this purpose.
- The ambition and progress towards a Five Trillion economy will not be possible without first securing our water story. The State Ministers' Conference with the theme 'Water Vision@2047' was organized on 5-6 January 2023 at Bhopal in this context. It was quite evident at the conference that river management is a central tenet of this Water Vision.
- Re-establishing respect for water is not only the biggest challenge in our times but also the greatest opportunity in so many ways.
- It is vital for Commissioners and Executive Officers of RCA member cities to institutionalize the philosophy of the Alliance and ensure its acceptability among citizens. Only then will the ethos of the RCA remain sustainable, without being affected by a change in leadership.



Vote of Thanks

While delivering the vote of thanks, Shri Vikram Kumar, Municipal Commissioner, Pune, reminisced his childhood memories and said that around 30 years ago, when he was younger, he used to walk with his grandmother along a healthy river, but that river has since changed and is now a drain. Thanking the Hon'ble Minister, he said, **"Our rivers need to be revitalised in order to return to the condition they were in when we were kids. As a result of the Hon'ble Minister of Jal Shakti's comments inspiring us, we pledge to revitalise and restore our rivers on this anniversary of the River Cities Alliance."**



Launch of Urban River Management Plans (URMP)

URMP - Ayodhya

Urban River Management Plan (URMP) for the city of Ayodhya, Uttar Pradesh was launched during the opening ceremony of DHARA 2023 by the Hon'ble Minister of Jal Shakti, Shri Gajendra Singh Shekhawat.



URMP - Chattrapati Sambhajinagar

Urban River Management Plan (URMP) for the city of Chattrapati Sambhajinagar (formerly Aurangabad), Maharashtra was launched during the opening ceremony of DHARA 2023 by the Hon'ble Minister of Jal Shakti, Shri Gajendra Singh Shekhawat.



Launch of Pragyambhu by C-Ganga





New Cities added To River Cities Alliance

12 New Cities
were added to the
River Cities Alliance
bringing the
total count to 108

Nasik, Maharashtra



*Rajamahendravaram,
Andhra Pradesh*



Vadodra, Gujarat



Nanded, Conoor, Cooch Behar, Vishakhapatnam, Mangaluru, Nellore, Surat, Trivandrum, Jodhpur and Pimpri Chinchwad joined online to become a member of the RCA in DHARA 2023





DHARA 2023

In the image: Representatives from the 60 RCA member cities that participated in DHARA 2023 in Pune.

Centre row (L to R):
Mr. Vikram Kumar
Commissioner
Pune Municipal Corporation

Mr. G Asok Kumar
Director General
National Mission for Clean Ganga

Mr. Gajendera Singh Shekhawat
Hon'ble Minister of Jal Shakti

Mr. Hitesh Vaidya
Director
National Institute of Urban Affairs

DHARA 2023



Panelists:

Chair: Mr. G Asok Kumar,
Director General, National Mission for Clean Ganga

Moderator: Ms. Nikita Madan,
Sr. Environment Specialist, W&E Vertical, NIUA

Speakers:
Mr. S. Vishwanath,
Director,
BIOME Solutions

Mr. Ramveer Tanwar,
Pondman of India

Dr. Kartiki Naik,
Program Manager,
World Resources Institute, India

Mr. Suresh Babu,
Director, WWF-India

Mr. Gaurav Anand,
Swachhata Pukare, Jamshedpur

Session 1: Innovative examples of river management within India

Historically, rivers have always had a special place in Indian society. Therefore, some of the most innovative and imaginative solutions for river management can be found in the country itself.

The purpose of this session was to showcase these solutions with the hope of inspiring members of the RCA to replicate/customize these solutions in their cities.

The areas of interventions discussed included:

- Shallow aquifer management
- Pond rejuvenation
- Leveraging rivers for flood resilience
- Urban biodiversity management
- Enhancing river-related economy

KEY TAKEAWAYS

- While the principles for river management may be common for members of the RCA, every city will need to discover its own model for management considering local needs, contexts, and aspirations.
- An often ignored component of river management is groundwater. It is vital to understand that groundwater feeds our rivers in the dry season through baseflow, and proper management of groundwater is essential for the effective and holistic management of the river.
- It is often said that behavioral change in citizens is key to solving most of the river-related challenges in cities. However, a precursor to this is an improvement in the floundering citizen-river connect through design and other means. Without citizen-river connect, it will be challenging to target behavioral change.
- Holistic management of rivers is not possible without considering urban wetlands. The host of co-benefits that healthy wetlands provide is unmatched. Unfortunately, there is very little knowledge among city officials on how to manage these. There is a need for dedicated capacity-building initiatives to address this glaring gap.
- While there are several challenges for urban rivers, it is possible to convert these into opportunities. For example, in Jamshedpur, water hyacinth (aquatic weed), which is a typical nuisance growing along the Swarnrekha River, is being used by local organizations for constructive purposes like producing paper, notebooks, and even sarees. In the process, almost 600 women have been provided with a steady livelihood option.



"Every citizen can play a role in river management. All he or she needs to do is to capture rainwater and push it into the shallow aquifers."

S. Vishwanath, BIOME Solutions

"The condition of ponds and green cover in the city is directly proportional to the condition of the river in the city."

Ramveer Tanwar, Pondman of India



"Multi-stakeholder coordination and cooperation is an intrinsic component of improving fluvial flood resilience. It cannot be avoided. Cities must invest in avenues and solutions to strengthen these coordination mechanisms."

Kartiki Naik, WRI



"There are several no-regret actions that citizens can take to ensure healthy rivers. 100 liters of water saved is 80 liters of less pollution in the river."

Suresh Babu, WWF-India

"Aatmayato Vrudhi Vinasha", Destruction or development, it's in our hands."

Gaurav Anand, Swachhta Pukare



"Rivers are a great economic growth engine of our cities, the potential of which is not being realised."

G. Asok Kumar, DG, NMCG

DHARA 2023

DRIVING HOLISTIC ACTION FOR URBAN RIVERS

HUMBLE PUNE, MAHARASHTRA

14 FEBRUARY 2023



Panelists:

Chair: Mr. Rajiv Ranjan Mishra,
Chief Advisor, NIUA

Moderator: Mr. Rahul Sachdeva,
Sr. Program Specialist, W&E Vertical, NIUA

Speakers:

Col. Andy Pannier,
(Mississippi River Cities initiative) Secretary,
Mississippi River

Ms. Martina Burkard,
(Used Water Reuse) Programme Director,
GIZ, GERMANY

Ms. Laura Sustersic,
Team Leader, GIZ, GERMANY

Dr. Harry Virahsawmy,
Head of Urban Water, Alluvium Consulting,
AUSTRALIA

Dr. Anitha Sharma,
Counsellor for Water and Urban
Development, Embassy of DENMARK

Session 2: Innovative International Case Studies for River Management

Managing urban rivers is an emerging paradigm in India. There is a great opportunity for river cities in India to learn and emulate the success achieved by prominent international cities with respect to managing rivers and its associated ecosystem within the city boundaries.

The purpose of this session was to showcase relevant international examples in managing urban rivers with the hope of broadening the horizons of decision-makers and adopting new approaches/solutions in their cities.

The areas of interventions discussed included:

- Mississippi River Cities Town Initiative (MRCTI) for sustainable management of the Mississippi River
- River Basin Management - a case of the Rhine river
- Reuse of treated used water - an approach in urban water management
- Water-sensitive urban design - a case of Melbourne
- Sustainable Groundwater Management - a case of Denmark

KEY TAKEAWAYS

- RCA has close parallels with the Mississippi River Cities Town Initiative (MRCTI), which comprises 124 member mayors of cities along the Mississippi River in the USA. MRCTI empowers members with the tools and support to undertake effective local initiatives, which attract green jobs, help them move towards sustainable economies, and achieve local environmental protection goals. There is much that RCA and MRCTI can learn from each other to enhance the commitment for river-sensitive development in the respective countries.
- Communities/citizens can be innovatively engaged in various aspects pertaining to urban river management. This would help amplify the positive impact at larger scales, and also strengthen the citizen river connect. MRCTI has empowered and engaged ordinary citizens for data collection to help prepare the Pollution Plastic Map for specific regions of USA.
- It requires efforts across various levels-State, District, City, and individual to solve the complexities of urban river management.
- From the experiences in Germany, while the reuse of treated used water can significantly reduce the stress on freshwater sources, it is important to establish quality standards for various fit-for-use purposes. Only then will cities be able to target large-scale use of treated used water. Likewise, developing business models on practical applications of reuse in cities is equally important.
- From experiences in Australia, the Water Sensitive Urban Design (WSUD) approach would make good sense in Indian river cities. By integrating water thinking into the urban planning process, this approach not only helps in pollution abatement, it also helps in flood management and creates alternative sources of water supply for various nonpotable purposes.

"Mississippi River Plastic Pollution initiative driven by MRCTI enlists the ordinary citizens empowering them to collect data using citizen science leading to first ever pollution plastic map of the US. The Marine Debris tracker app contributes to 5 million data points."

Col. Andy Pannier, Mississippi River Cities Initiative (MRCTI)



"Increasingly water supply and water services plans have to address social amenities, environmental protection, diversity of water sources to provide water security, and include pressures of climate change as well."

Harry Virahsawmy, Alluvium Consulting



SAFE REUSE OF TREATED WASTE WATER

"The National Framework for Safe reuse of treated wastewater, launched by the Ministry of Jal Shakti in January 2023, is an important step for India. It elaborates on the reuse of wastewater for agriculture, industries, environment, and indirect non-potable uses such as groundwater infiltration and putting them in ponds"

Laura Sustersic, GIZ

IT-SMART BUT WATER DUMB

"IT-smart and water dumb is not going to take us anywhere. Using technology to reinforce and strengthen our water systems and infrastructure is the way of the future. But we also have to learn from our traditional wisdom and practices."

Rajiv Ranjan Mishra, NIUA

HYATT PUNE, MAHARASHTRA

13-14 FEBRUARY 2023



ENABLING THE "KNOWLEDGE DHARA"

"Data is very important and open data more so, to facilitate planning. With different departments not talking to each other, even the collected and available data gets lost in translation. Just by connecting these departments and enabling a **Knowledge Dhara**, a lot can be achieved."

Anitha Sharma, Denmark Embassy



2023

ADVANCING HOLISTIC ACTION FOR URBAN RIVERS

HYATT PUNE, MAHARASHTRA

13-14 FEBRUARY 2023



Panelists:

Chair: Mr. Hitesh Vaidya,
Director, NIUA

Moderator: Dr Uday Bhonde,
Sr. Program Specialist, W&E Vertical, NIUA

Speakers:

Mr. Rajiv Ranjan Mishra,
Chief Advisor, NIUA

Dr. Srinivas Chokkakula,
Ministry of Jal Shakti Professional Chair, Centre
for Policy Research

Prof. Vinod Tare,
Founding Head, cGanga

Session 3:

Strengthening the agenda for urban river management

Holistic urban river management--that considers environmental, social, and economical aspects is an emerging paradigm in India. There is a strong appetite in cities to follow this new approach to river management. This is because it allows for strengthening the mutually symbiotic relationship between rivers and cities.

The purpose of this session was to discuss how to reinforce the enabling environment required at different scales (national, state, and city) to propound this new approach for river management.

Some of the key questions discussed in the session were:

- How to translate aspirations into on-the-ground action? What are some of the key challenges in this regard? How can they be addressed?
- What are the capacity gaps in cities on aspects of river management, and how can these be plugged?
- How can communication be used as an effective tool to proliferate the agenda for urban river management?
- What is the way forward for urban river management in Indian cities?

KEY TAKEAWAYS

- A "systems approach" has long been suggested for managing urban rivers. However, doing so requires close coordination and cooperation among different stakeholders in the city. As a first step, it is important for city administrators to create avenues for facilitating this stakeholder coordination. A good reference example is the **Delhi Water Forum**, set in December 2022, as a platform for all water-related agencies and other non-governmental actors to meet once in a quarter to share ideas, knowledge, and project information on how to make Delhi water secure.
- Reimagining of urban rivers requires transformation solutions. An ideal place to sow the seeds for such solutions is the Master Plan. Cities must look to leverage the power of Master Plans to create long-term sustainable solutions for rivers.
- Many of the sustainable initiatives and programmes for long-term urban river management require adequate gestation time. Hence, it is vital to ensure that such initiatives and programmes are not impacted by the change of baton in political or administrative circles.
- An often ignored component in managing urban rivers is creating active communication channels with different stakeholders, especially citizens. It is vital that the messaging of such communication strategies are articulate and relevant across different sections of society.
- Going forward, it would be useful to link river management to the larger overarching system, considering aspects of soil management, food security, and energy use.

" We need a Forum to create dialogue, to facilitate multistakeholder coordination, and to transfer knowledge from one department to the other. Urban River Management Plan (URMP) is one such framework, that brings together different agencies on the ecological, social and economic aspects of a city's river ecosystem."

Rajiv Ranjan Mishra, NIUA



Master plans are key to addressing long-term solutions for managing urban rivers.

Srinivas Chokkakula, CPR, MoJS

Session 4: **Press Conference of Dignitaries with Media**

Shri Gajendra Singh Shekhawat, Hon'ble Minister of Jal Shakti, G Asok Kumar, Director General, NMCG, Shri Vikram Kumar, Municipal Commissioner, Pune and Shri Hitesh Vaidya, Director, NIUA presided over the press conference for DHARA 2023. Addressing the media, Shri Shekhawat emphasized on the need to give back to the rivers for our future generations.



DHARA 2023

DRIVING HOLISTIC ACTION FOR URBAN RIVERS

HYATT PUNE, MAHARASHTRA

13-14 FEBRUARY 2023



Panelists:

Chair: Mr. Himansu Badoni,
Executive Director (Projects), NMCG

Co-Chair: Mr. Dheeraj Joshi,
Deputy Secretary, NMCG

Moderator: Ms. Ishleen Kaur,
Sr. Environment Specialist, W&E Vertical, NIUA

Speakers:

Mr. Vishrut Goswami,
B.Arch, NIT Calicut

Mr. Akshansh Mishra,
B. Arch, Apeejay Institute of Technology,
Greater Noida

Ms. M. Veena,
B.Tech, Vignana Bharathi Institute of
Technology, Hyderabad

Ms. Akanksha Bhardwaj,
M Plan, Indira Gandhi Delhi Technical
University for Women, New Delhi

Mr. Yash Dhawade,
M Plan, IIT Kharagpur

Mr. Chaitanya Joshi,
M Plan, CEPT University, Ahmedabad

Session 5: Youth for Rivers

Young people have the unique ability for blue-sky and out-of-the-box thinking. In so many ways, this is exactly what is required for river management in Indian cities.

The purpose of this session was to engage with youth leaders and solicit their points of view on some of the most pressing challenges for urban river management in India today.

The finalists of the Season 3 of the Student Thesis Competition on "Re-imagining Urban Rivers", (organized by NIUA and NMCG), were the speakers of the panel.

The session sought to answer the following questions:

- What do young people think about rivers? How strong is their connect with rivers?
- What role does the youth have in the overall efforts to rejuvenate rivers? What must be done to help them play this role more effectively?
- How can young people be the change makers for river management?

KEY TAKEAWAYS

- The government bodies and the citizens must together consider the river as an opportunity. ULBs and society have to co-share the responsibility to keep rivers clean and healthy.
- Community participation can play a vital role in the implementation of various river projects. A strong citizen-river connect can also be very useful to monitor and maintain the implemented projects.
- Technology can be leveraged to sensitize people about the importance of rivers and their systems and how innovative solutions can aid in river conservation and management. IoT based applications can disseminate river health related information to the larger crowd for faster and effective remedies.
- The role of youth is crucial for sustainable river management. Youth can rally the attention of people to the cultural, religious, and mythological heritage of the river. This will act as a strong and effective sensitisation driver for river-citizen connect.
- Natural ecosystems, water bodies, and rivers are immensely important for the healthy growth of cities and their citizens. A prioritized approach for the management of rivers and their elements needs to be adopted in urban planning.
- With the increased pace of urbanization, sustainable land-use practices and dedicated land reserves such as buffers and flood plains are the key tools to save and support the riverine systems.
- To train young professionals for water and river management-related projects, academia needs to plug the existing gap through new programs and courses, making the youth future ready for river management works.

"India has the largest population of youth in the world. We must leverage the intellect and creativity of these young people to address the seemingly challenging problems related to river management."

- **Mr. Himansu Badoni, Executive Director (Projects), NMCG**



"The enthusiasm that young people bring to the table is infectious. This enthusiasm, in the right direction, can be a game changer for managing urban rivers."

-**Mr Dheeraj Joshi, Deputy Secretary, NMCG**

"Currently, we are stuck in dealing with the masculine aspects when it comes to planning for a city: the administration, authority and the city-district boundaries. It is important to involve the feminine aspects: the society and culture, equally into a river centric planning."

- **Mr. Yash Dhawade, Masters in City Planning, IIT Kharagpur**



Session 6: Know your River City

To enhance the knowledge on some of the member river cities of RCA and the associated rivers, a fun and engaging session was organized post-lunch. It captured the interest of the participants through a quiz to identify some of the RCA cities and their unique identity because of the river. The other round of fun and games was an innovative image game for piquing their curiosity on terms related to urban water management.



It was also a start of exchange of ideas





DHARA 2023 DAY 2 14th Feb

2 Empowerment

4 Universal Accessibility
(Barrier free environment)

6 Livelihood Generation

7 Any other
(Please specify)

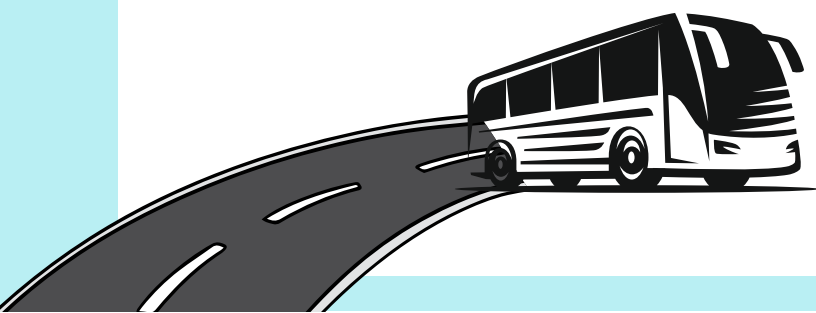
Session 7: Ghat Par Yoga

To experience the riverbank in Pune in a unique way, the NRCD officials organized an early morning yoga retreat for the participants of DHARA 2023. The ghat was designed to demonstrate how river ghats can be imagined for multiple recreational uses for the citizens to bring back the lost association with the river as well as help enhance a sense of community ownership.



Session 8: Visit to Mula Mutha Riverfront

To see river rejuvenation plan in action, an engaging site visit to the Mula Mutha riverfront was organised by the Pune Municipal Commission (PMC). Along with representatives from the River Cities Alliance (RCA), Sh. Vikram Kumar, Municipal Commissioner, Pune and Sh. Kunal Khemnar, Additional Commissioner, Pune participated in the visit.





Panelists:

Chair: Mr. G Asok Kumar,
Director General, National Mission for Clean Ganga

Moderator: Ms. Jyoti Verma,
Sr. Research Specialist, W&E Vertical, NIUA

Speakers:
Mr. Vagnesh Shukla,
Additional Municipal Commissioner,
Ayodhya

Mr. Aditya Tiwari,
Assistant Project Manager (CC), ASCDCL,
Chhatrapati Sambhajnagar

Mr. Shishir Srivastava,
Deputy Municipal Commissioner,
Gwalior

Mr. Sanjay Chauhan,
Municipal Commissioner,
Moradabad

Mr. Vikram Kumar,
Municipal Commissioner,
Pune

Session 9: Stories from RCA cities

Since the establishment of RCA in 2021, its member cities have carried out various river-related projects, initiatives, and reforms. While some initiatives had started before the launch of RCA, they received a fresh boost of enthusiasm and vigor after the establishment of the RCA.

The objective of this session was to hear from the RCA member cities regarding some unique and innovative initiatives undertaken by them contributing to the agenda of managing the urban river stretches.

The session featured presentations from five RCA members:

- Ayodhya
- Gwalior
- Moradabad
- Chhatrapati Sambhajnagar (formerly, Aurangabad)
- Pune

KEY TAKEAWAYS

Ayodhya

- Prepared a dedicated Urban River Management Plan for the Saryu River, which has 19 tangible interventions.
- Rejuvenated most of the water bodies as well as beautified all ghats for strengthening the citizen-river connect.
- Devised a modality to process the floral waste generated in the city and converted it into incense sticks.

Chhatrapati Sambhaji Nagar

- Prepared a dedicated Urban River Management Plan for the Kham and Sukhna River, which has 17 tangible interventions.
- Engaged in massive community drives to seek citizen input for rejuvenation efforts.
- Mobilized funds from communities and the private sector to fund river-related projects.

Gwalior:

- Mapped and geotagged 3,000 dug wells present within the city. Inarguably the first city in India to do so.
- Developed a groundwater contour map based on the mapping of dug wells. The map helps identify recharge and discharge zones.

Moradabad:

- Currently preparing a dedicated Urban River Management Plan for the Ramganga river.
- Currently treating domestic wastewater by natural treatment measures like bioremediation & phytoremediation.
- Conducts "Chaupal" along the river bed to hear grievances and suggestions from its citizens on river management.

Pune:

- Developed an ambitious plan for the Mula-Mutha Riverfront that will have naturalized embankment along the majority of the 44 km stretch of Mula-Mutha River traversing through Pune City.
- The entire stretch of the riverfront will have parks/gardens, walkways, and cycle pathways for citizens to connect to the river.
- The city of Pune envisages exploring the Mula-Mutha River for intra-city transport purpose.

"We have realised that people need to see and feel the river. Keeping that in mind we are creating this riverfront accessible to the citizen of the city to bring back the connect with the river."

Vikram Kumar, Commissioner, Pune Municipal Corporation



"The city of Chhatrapati Sambhajnagar needed a comprehensive agenda to address the issues of water. What started as a river rejuvenation effort has reignited and rekindled the imagination of city administration and the citizens."

Aditya Tiwari, Chhatrapati Sambhajnagar SCDC



SAVING THE TRADITIONAL WATER STRUCTURES

"There are many kunds, especially in the northern belt of India, we need to conserve these traditional water structures, Ayodhya Nagar Nigam is working in that direction"

Vagnesh Shukla, Additional Commissioner, Ayodhya Municipal Corporation

YOUNG MINDS AS CHANGE MAKERS

"The young minds are the flag bearers of the new thinking, we have involved young minds, trained them, and made them the young brand ambassadors for the rejuvenation of rivers so that they can take that messaging back to the society"

Sanjay Chauhan, Commissioner, Moradabad Municipal Corporation



MAPPING FIRST STEP TOWARDS REJUVENATION

"Gwalior city is dotted with more than 6000 wells/step wells, and more than 3000 wells/step wells have been mapped and geotagged as a first step towards rejuvenating these traditional water structures. Around 50 wells have been rejuvenated till now"

Shishir Srivastava, Deputy Commissioner, Gwalior Municipal Corporation



DHARA 2023

DRIVING HOLISTIC ACTION IN URBAN RIVERS
HYATT PLACE, MAHARASHTRA



Panelists:

Chair: Ms. Richa Misra,
Joint Secretary and Financial Advisor,
Ministry of Jal Shakti

Moderator: Mr. Sumit Chakraborty,
Urban Lead, NMCG PMC

Speakers:

Mr. Hoe Yun Jeong,
Deputy Country Director,
Asian Development Bank

Mr. Alok Suman,
Sr. Water Resources Management Specialist,
World Bank

Mr. Kiran Avadhanula,
Senior Sector Specialist - Sustainable
Development, KfW

Session 10: Financing river related projects & interventions

Implementing many river-related projects and interventions is a cost-intensive affair, requiring significant and consistent funding streams. For cities, especially smaller ones, this can be a challenge.

However, with different innovative financial models being rolled out by various funding agencies, efforts are being made to make financing more accessible and available to those cities that need it the most.

The purpose of this session was to discuss the various challenges, opportunities, and modalities for cities to tap into the available ecosystem of funding. Representatives from the Asian Development Bank, World Bank, and KfW shared their insights on the following questions.

1. What are the different options of funding available currently? What types of projects qualify for funding?
2. How can cities create an enabling environment to receive funding for river-related projects?
3. What are the future priorities for funding in the urban sector? How well does river management fit into those priorities?

KEY TAKEAWAYS

- Unlike popular understanding, there is significant funding available for water and river-related interventions. For example, ADB has a financing pipeline of USD 20-25 Billion for India alone for the next five years, out of which around 40% is for climate action projects (under which river management fits very well).
- It is unlikely that only a single source of funding would be able to meet all the requirements that a city has for its river management agenda. A city will need to explore multiple sources, hybrid solutions, and non-traditional avenues (e.g. green bonds) to meet the demand.
- Almost all large multilateral and bilateral funding agencies have provisions to support river-related projects. For example, river management features prominently in ADB's climate change and disaster risk reduction agenda. Likewise, KfW is already financing river-related interventions in Uttarakhand.
- A key precursor to securing funding is to develop bankable project proposals. This essentially involves looking at the project holistically from multiple perspectives, maintaining environmental and social safeguards, integrating long-term resilience, and having sound Monitoring, Evaluation and Learning mechanisms.
- Given the magnitude of funding that is required for river-related projects, it is important that proper feasibility studies, economic viability analyses, and climate screening studies are conducted. Most of the funding agencies are able to provide "readiness grants" to cities in order to take up these studies.
- It is important for cities to consult and keep their States abreast of their project preparation plans because all funding from multilateral agencies is normally routed through the States.
- From experiences around the world, there is enough evidence to suggest that citizens have the 'willingness to pay' for river projects that enhance their connect with the river. This is true for India as well. What we need, however, is to leverage this 'willingness to pay' with a 'willingness to charge'.
- Cities have conventionally looked to securing financing as an onerous affair. In line of current developments in the financial ecosystem, cities would be well advised to move away from this line of thought and explore the various avenues available.

"Water, as a resource, has been defined as a public good. Ironically, the same definition leads to it being under-valued and under-priced."

**Richa Misra, Joint Secretary and Financial Advisor,
Ministry of Jal Shakti**





"It is time for us to move towards institutionalizing the Urban River Management mechanism. Moving from plan to implementation, we need an RCA Pact."

Kiran Avadhanula, KfW

"We (ADB) have an ambitious climate finance target of committing 100 billion dollars between 2019 and 2030 on a cumulative basis.

We also have a country level strategy named Country Partnership Strategy. It is basically to operationalise the strategy 2030 for each developing country, including India"

Hoe Yun Jeong, ADB



"Instead of fixing the pipes, it is a lot more useful to fix the institutions that build the pipes

Alok Suman, World Bank

DHARA 2023

DRIVING HOLISTIC ACTION FOR URBAN RIVERS

HYATT REGENCY, MAHARASHTRA

12 FEBRUARY 2023



Panelists:

Chair: Ms Lubaina Rangwala,
Associate Director, WRI India

Moderator: Ms Ambika Malhotra,
Consultant- City Climate Alliance, NIUA

Speakers:

Mr. Rajiv Ranjan Mishra,
Chief Advisor, NIUA

Ms Aarathi Kumar,
Manager, WRI India

Mr Ravikumar K,
Urban and Regional Development Advisor,
GIZ India

Ms Aarti Nain,
Advisor - Urban Cooling and Heat Management,
UNEP

Mr Manu Bhatnagar,
Principal Director, Natural Heritage Division,
INTACH

Ms Gargi Joshi,
Water Fund Associate,
The Nature Conservancy

Ms Sayli Mankikar,
Head - City Climate Alliance, NIUA

Breakout session 1: Operationalising Nature- based Solutions in River Cities

The session addressed the potential of Nature-based solutions (Nbs) to deal with the challenges and risks faced by river cities, in addition to their implementation through cross-learning based on unique experiences, risks through expert-delivered case studies, and best practices of NbS implementation in India, broadly covering the following aspects:

- How are NbS projects identified, designed, and implemented? What kind of policy and regulatory changes are needed?
- Who are the stakeholders and how to onboard them?
- What are the business and operations model available? How can capital and operational expenses be financed?
- What kind of M & E framework is needed to measure the success of the project?

KEY TAKEAWAYS

"There are different alliances and forums being established such as River Cities Alliance, Climate Cities Alliance and NbS forum, to bridge the knowledge gap within the cities, nationally and globally. These Alliances can be instrumental to bridging the gap that exists in the knowledge exchange between the cities and inspire peer city learning. "

-**Sayli Mankikar, NIUA**



"Nature-based Solutions is all about cities adopting ecosystem approaches and blue-green infrastructure to fulfil the ecological, social and economic aspirations of its citizens. This would be possible if the NbS supplements and complements the existing built infrastructure"

-**Aarathi Kumar, WRI**

"Water funds are collective action governance platforms that bring together different water users to invest in ecosystem protection and upstream communities within the catchments they depend on. Despite their importance, at times it becomes difficult to get stakeholder buy-in for solutions."

-**Gargi Joshi, The Nature Conservancy**



"Cities today have forgotten their relation with the river in terms of settlements, culture, and spirituality. There is a need to relook at the water systems in dense cities where water flooding, drought and pollution are simultaneous problems." - **Manu Bhatnagar, INTACH**



CITIES NEED TO START ACTING NOW

"It is time that cities start acting in support of nature. The Kolkata wetlands and mangrove preservation highlight the need for preserving and re-establishing natural systems while water heritage structures like *Baolis* are a proof that we can co-exist with nature."

Rajiv Ranjan Mishra, NIUA

COOL CITIES WITH RIVERS

"Free cooling cities with rivers can help support CO2 emission reduction, water savings, and heat wave abatement as seen in the case of River Seine in Paris, which is Europe's largest district cooling system, supporting offices, commercial, and public spaces."

Aarti Nain, UNEP



NBS AND FUNDING

"Eight lakes in Coimbatore, Tamil Nadu were eco-restored through adoption programmes to convert 42 acres into Mini Urban Forests, participatory planning, and reducing the operation and maintenance costs with financial assessments."

Ravikumar K, GIZ



DHARA 2023

LIVING HOLISTIC ACTION FOR URbAN RIVERS

WATT PUNE, MAHARASHTRA

13-14 JANUARY 2023



Panelists:

Moderators:

Prof. Kavita Murugkar,
Principal, Bharati Vidyapeeth School of
Architecture, Pune & Co-founder Design Bridge
Foundation

Mr. Utsav Choudhury,
Lead, Building Accessible Safe Inclusive Indian
Cities (BASIC) programme, NIUA

Ms. Kanika Bansal,
Senior Programme Associate, BASIC
programme, NIUA

Speakers:

Prof. Aneeta Gokhale Benninger,
Professor & Executive Director, Centre for
Development Studies and Activities

Mr. Vinod Bodhkar,
President, Jalbiradari (Pune District) &
Joint Director, Sagarmitra Abhiyaan

Ms. Suhita Dugar,
Program Manager, Water Body Restoration,
EcoSattva Environmental Solutions

Breakout Session 2: Inclusive Riverfront Development: Fostering Inclusion through our Rivers

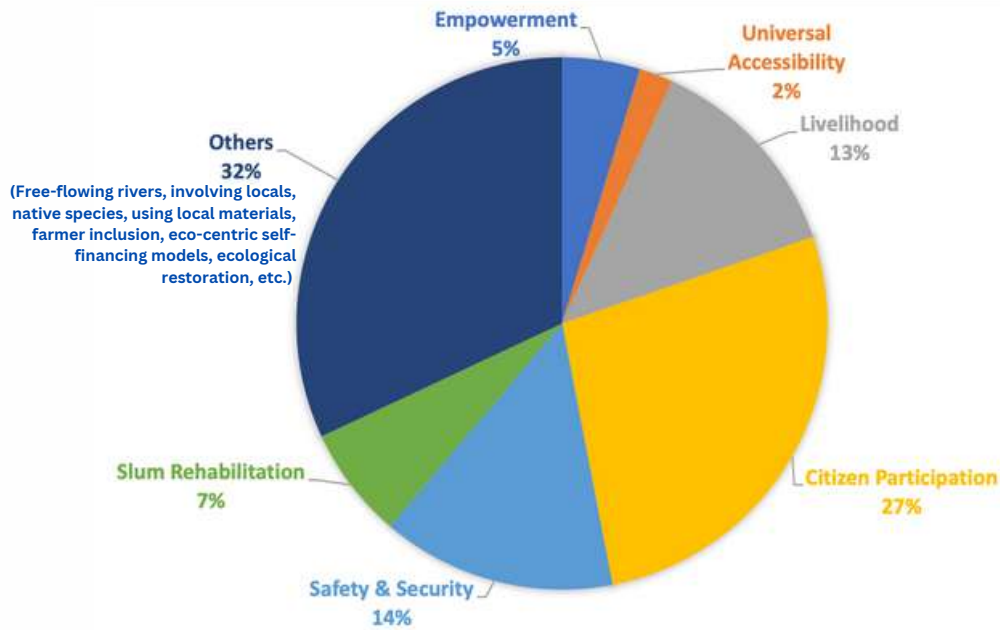
A river is a common pool resource, meant to be available and accessible to all sections of society, irrespective of gender, age, caste, creed, or ability.

Unfortunately, in many riverfront projects this aspect of "inclusion" is lacking, with scant consideration for the needs of the physically challenged, senior citizens, or young children.

The purpose of this session was to discuss the avenues to mainstream "inclusion" into the planning, design, and implementation of riverfront projects.

The session sought to answer the following questions:

- What does inclusion means for riverfront design?
- Who should be included? How should they be included?
- What are sustainable models of inclusion in the riverfront design space?
- How to create a win-win situation to make urban riverfront projects socially inclusive and economically sustainable?



Participant's reflections of what inclusion means for riverfront development



"Namami Gange has been propagating inclusion by incorporating inclusive riverfront development as riverfronts with adequate consideration to the needs and aspirations of all local stakeholders, custodians and users of the river and riverfront, throughout the different stages of the project. This has been embodied by the URMPs of the three cities.

Urban regeneration through riverfront restoration can be seen as an approach to include people living and earning on the banks into the ambit of river-centric planning." - **Kanika Bansal, NIUA**

"Riverfront development can become an avenue for diverse kinds of engagement for the citizens. It just isn't about taking their inputs in the different stages of the project, but also about how the design of these spaces attract and facilitate the access to the river for different stakeholder groups- recreationally or economically." -

Prof. Kavita Murugkar, BVSA, Pune



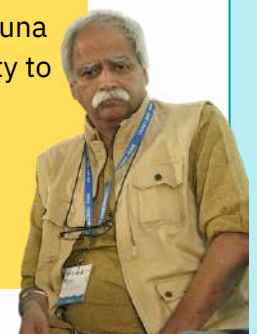
"When you are preventing pollution in the urban rivers, you are also reducing the huge burden on healthcare. It is by virtue of healthy rivers, that these larger social issues can be tackled"

- **Prof. Aneeta Gokhale Benninger, CDSA, Pune**



"Holistic inclusion cannot be limited to only people, it is also imperative to include the river flora and fauna and the overall river biodiversity to develop riverfronts that are inclusive in the true sense."

- **Vinod Bodhankar, Jalbhagidari**





Panelists:

Moderator:

Ms. Paramita Datta Dey,
Head (Resources and Waste), NIUA

Speakers:

Dr. Kunal Khemnar,
IAS, Additional Municipal Commissioner,
Pune Municipal Corporation

Mr. Swapnil Dinkar Pundkar,
IAS, Municipal Commissioner, Vijaywada
Municipal Corporation

Breakout Session 3: **Solid Waste Management in India: Stories of Change**

Solid waste management is intrinsically linked to urban river management, especially in Indian cities, in several ways. Improper solid waste management:

- Increases the pollutant load in rivers.
- Reduces the flow of rivers, if feeder drains are choked with solid waste.
- Contaminates groundwater, through leachate from legacy waste, that serves as baseflow to rivers.
- Diminishes the aesthetics of riversides, thereby reducing the citizen-river connect.

The purpose of this session was to discuss examples and case studies of good solid waste management practices from various Indian cities that have a bearing on river management.

KEY TAKEAWAYS

Good practices adopted by Vijayawada Municipal Corporation (VMC):

- Special campaigns have been organized by VMC to address challenges like source segregation, slow adoption of in-house composting, and visual cleanliness.
- Constructed a bio-methanation plant to generate power using bio-gas, and the power generated is used to operate the STP in the city.
- Dedicated initiatives/projects have been taken up for:
 - + construction and demolition waste processing
 - + community kitchens
 - + CNG auto tippers for door-to-door collection,
 - + Flower waste management
 - + E-waste management



-Swapnil Dinkar Pundkar, Vijaywada Municipal Corporation

Good practices adopted by Pune Municipal Corporation (PMC)

- Provided official recognition to informal waste pickers by involving 3,600 of them in solid waste management (under SwACH model) covering almost 80% of the city's population. Waste pickers are provided with official ID cards to make them feel part of the system.
- Established the "Resource Recycling Centre" in Kalyani Nagar, which also provides a space for citizens to participate in material management and dry waste recycling through partnering with key institutional stakeholders.
- Constructed a Waste-to-Energy plant in Ramtekdi with a per-day capacity of 700 million tons generating 13.19 MW of electricity
- Dedicated initiatives/projects have been taken up for
 - + Multi-layer plastic and low-value plastic program,
 - + Thermocol recycling initiative,
 - + Sanitary waste management

-Kunal Khemnar, Pune Municipal Corporation





Panelists:

Moderator:

Ms. Mahreen Matto,
Team Lead, SCBP, NIUA

Speakers:

Mr. Bhitush Luthra,
Lead Consultant, Athena Infonomics

Mr. Manu Tyagi,
Team Leader, Housing and Urban
Development Department, Government of
Odisha

Ms. Donata Mary Rodrigues,
Senior Consultant, Indian Institute for
Human Settlements (IIHS)

Dr. Sabita Madhvi Singh,
Joint Director, National River Conservation
Directorate, Ministry of Jal Shakti

Breakout Session 4: Experience sharing on Citywide Inclusive Sanitation

The session focussed on the emerging paradigm in the field of sanitation management i.e Citywide Inclusive Sanitation (CWIS). It focuses on providing urban areas with access to and benefits from adequate and sustainable sanitation services, including the safe, effective, and sustainable management of all human waste along the whole sanitation service chain.

CWIS has a direct bearing on river management. Hence, the objective of this session was to discuss the innovation, technology, and inclusivity required for the planning of citywide inclusive sanitation in river cities.

The session focussed on the following topics:

- Decentralized planning
- Equitable sanitation
- Business & operational models
- Capacity building
- Monitoring, evaluation and learning

KEY TAKEAWAYS



Most investment has been for centralized wastewater treatment and sewerage. Still, such conventional sewer networks often do not serve newer or informal settlements. Extending such sewer systems to low-income and informal settlements can be challenging and costly.

The Odisha State government's approach is 'people centric' which means the plan-making process includes and delivers to the poor, marginalized, slum people, all genders. The 'State's Ward winning JAGA Mission' has the urban poor kept at the center to achieve CWIS.

-Manu Tyagi, Government of Odisha

The communities that suffer the most and are the most at-risk due to poor sanitation management are the marginalized communities. And invariably a majority of these communities reside near banks of rivers.

The well-being of any society can be measured by the health of its rivers.

India's National River Conservation Directorate (NRCD) is taking rapid steps in attaining the agenda of water security through improved river management in an inclusive and climate resilient way.

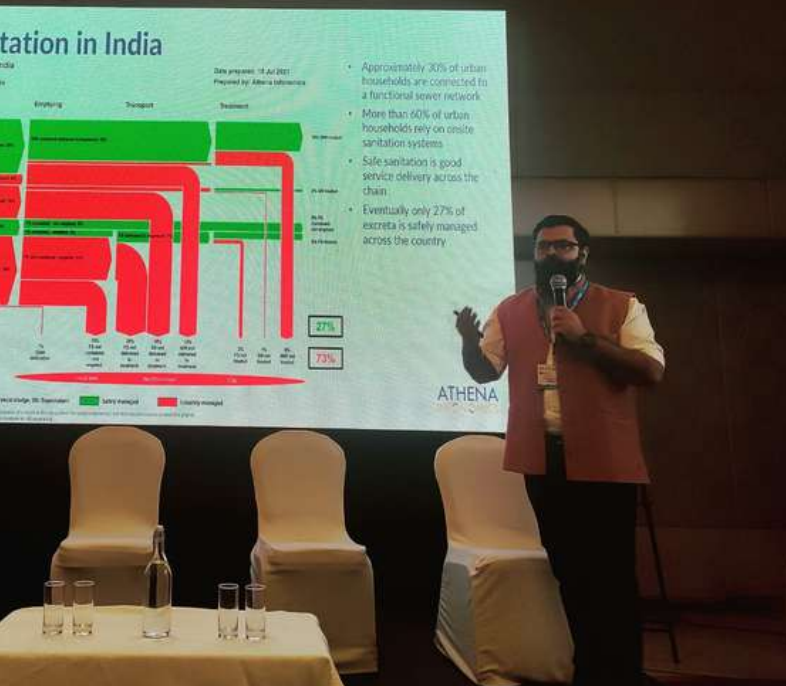
-Dr. Sabita Madhvi Singh, MoJS



In many ways, CWIS targets a paradigm shift in urban sanitation, ensuring everyone has access to safely managed sanitation by promoting a range of solutions—both onsite and sewerage, centralised or decentralised—tailored to the needs of cities.

CWIS means focusing on service provision and its enabling environment, rather than on building infrastructure.

-Dr Mahreen Matto, NIUA



ELEMENTS OF CWIS

CWIS comprises four elements—

- capable institutions
- safety and reliability
- equity and inclusion, and
- sustainability—with associated actions to achieve the desired outcome

Faecal sludge and septage management (FSSM) is an integral part to achieve CWIS, especially in smaller cities and towns.

-Mr. Bhitush Luthra, Athena Infonomics

INCLUSIVE AND SUSTAINABLE SANITATION

For truly sustainable sanitation services, policies, strategies, and investments need to address the entire sanitation service chain, from the toilet to treatment and reuse or disposal.

There may be a need to restructure institutions to accommodate the CWIS-driven strategy. Systems and incentives are required to monitor sanitation service performance and allow evidence-based strategic changes to optimize performance and service delivery.

-Ms. Donata Mary Rodrigues, IIHS



DHARA 2023

DRIVING HOLISTIC ACTION FOR URBAN RIVERS

HYATT PUNE, MAHARASHTRA

13-14 FEBRUARY 2023



Panelists:

Moderator: Dr. Himanshu Kulkarni,
Executive Director, ACWADAM

Speakers:

Mr. Ravindra Sinha,
Managing Director, ThinkLead Consulting

Ms. Shailaja Deshpande,
Founder Director, Jeevitnadi

Mr. Vijay Gawade,
Director, Waterlab Solutions Pvt. Ltd.

Breakout Session 5: **The role of groundwater for healthy rivers**

Groundwater is vital for a river's sustenance. Without base flow recharge from groundwater to rivers, many would not carry a flow of water except during monsoons. Groundwater and surface water (rivers, mostly) are not separate resources. When our activities use one of these resources, it often affects the other in a relatively short time frame in terms of quantity and quality.

The purpose of this session was, therefore, to discuss synergistic approaches to managing groundwater and rivers. The key questions discussed during the session were:

- What are the linkages between shallow aquifers and river management? How does one affect the other?
- What is the Influence of groundwater on the river ecosystem?
- What are the different community participation models for groundwater management?

KEY TAKEAWAYS

India is the largest user of groundwater in the world, more than China and USA combined, who are the next two on the list. Yet, very little attention has been paid to improving groundwater management in urban areas.

In India, the availability of surface water is greater than groundwater. However, owing to the decentralized availability of groundwater, it is easily accessible and forms the largest share of India's agriculture and drinking water supply.

AMRUT 2.0 is a welcome change, where for the first time urban aquifer management is being mainstreamed in the overall water management strategy of a city.

- Dr. Himanshu Kulkarni, ACWADAM



The development or contamination of surface water or groundwater resources typically has an effect on each other. Therefore a basic understanding of the interactions between surface water and groundwater is crucial for better management and sound policy-making related to water-resource problems.

-Ms. Shailaja Deshpande, Jeevitnadi



Assessing groundwater-surface water interactions is complex and difficult. However, a range of tools is available to assess the level of connectivity and understand the processes which control the movement of water from the surface to sub-surface storages.

-Mr. Ravindra Sinha, Bhujal Abhiyaan



It is heartening to see the technological evolution in groundwater management. For example, 'Bhujal App', a smartphone-based application, can monitor the groundwater level of borewells using the principles of ultrasonic waves. This application can help users to assess the water level in borewells.

- Mr. Vijay Gawade, Waterlab solutions





Valedictory Session



Glimpses..
13-14 February 2023 –PUNE

Release of the compendium of 75 river-related initiatives

Members of the RCA have been taking a number of initiatives for river rejuvenation and management even before they joined the Alliance. A compendium was prepared to document these initiatives and inspire member cities. To mark the Azadi ka Amrit Mahotsav, the compendium features 75 notable examples of river management from members of the RCA.

Synopsis of the Compendium on Celebrating 75 River Initiatives

The compendium presents seventy-five examples of river-related initiatives taken by members of the River Cities Alliance. The budgets for these interventions are mostly from the ULB own funds, national missions like SBM, AMRUT, NMCG. Several interventions are funded through CSR contributions.

Dedicated plans for urban rivers

Revival/rejuvenation of the main stem of the river

Riverfront development

Rejuvenating lakes and ponds

Setting up infrastructure for pollution control

Water budgeting

Reuse of treated wastewater

Bioremediation

Citizen engagement

Developing eco-parks and urban forests

Rainwater harvesting

Groundwater augmentation

Enhancing river-related economy

75 Initiatives contributing to Sustainable Development Goals

SDG 15 - Life on Land

- Target 15.1
- Target 15.2
- Target 15.3
- Target 15.4
- Target 15.5
- Target 15.6
- Target 15.7
- Target 15.8
- Target 15.9

SUSTAINABLE DEVELOPMENT GOALS

SDG 3 - Good Health and Well Being

- Target 3.9

SDG 6 - Clean Water and Sanitation

- Target 6.2
- Target 6.3
- Target 6.4
- Target 6.5
- Target 6.6
- Target 6.8

SDG 8 - Decent Work and Economic Growth

- Target 8.3
- Target 8.9

SDG 13 - Climate Action

- Target 13.3

SDG 11 - Sustainable Cities and Communities

- Target 11.4
- Target 11.6
- Target 11.7

SDG 9 - Industry, Innovation and Infrastructure

- Target 9.4

RIVER SENSITIVE MASTER PLAN AYODHYA

Nature of the Intervention

Leveraging master plan as key planning instrument to ensure river sensitive urban development.

Location of the Intervention

Pan City

Implementation Agency

Ayodhya Development Authority (ADA)

Finance

Department of Housing and Urban Planning

Brief description of the Intervention

Ayodhya, located on the bank of Sarayu River is the religious tourism city of Uttar Pradesh state. Ayodhya did not possess the Master Plan till 1986. The First Master plan of Ayodhya was prepared in 1988. The Master Plan 1988-2001 was the only Master plan prepared for the ADA so far and till date it's almost two decades since the Master plan period has lapsed, thus the revision of Master plan had become necessary. The area of ADA has extended its regulated area from 133.67 Sq.km to 873 Sq.km by addition of 343 villages and two towns in the year 2020.

The Ayodhya Master Plan 2031 has provided different provision for river sensitive development along the Sarayu river and other waterbodies, some of these provisions are -

- To secure the quality of urban natural water resources, Ayodhya Master Plan 2031 has proposed to provide a riparian buffer along the sides of water bodies.
- A restriction of development within a margin of 30 m from the river boundary. Eco parks and Riverfront development are to be provided as recreational areas for the citizens.
- Waterbodies are required to be protected from encroachment and for their conservation, it is proposed to have 9 m belt from water bodies as restricted zone.
- Mentioned about the Rainwater harvesting stating that all public building must provide a rainwater harvesting system in new buildings. For development more than 5000 sq. m, one rain water system is required to be provided.

Unique/Key feature of the Intervention

Ayodhya has become one of the very few cities who has adopted river sensitive approach for preparation of Master Plan

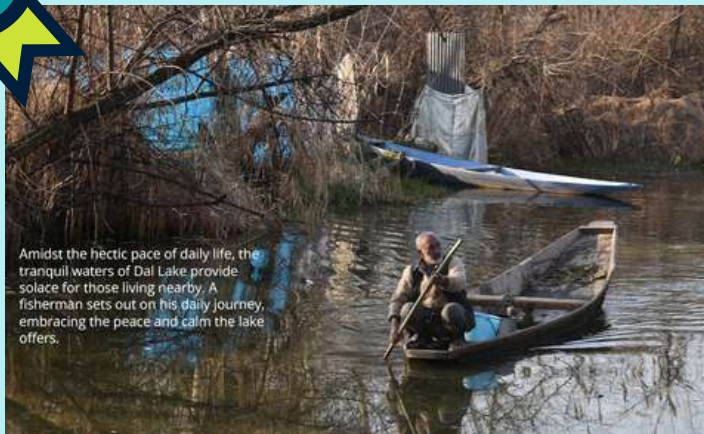
Awards for Poster Competition



SHISHIR VERMA,
Masters of Urban Region and Planning, Babu Banarasi Das University, Lucknow



YASH DHAWADE,
Masters in City Planning, IIT Kharagpur



BHUMIKA BATRA,
Bachelors in Architecture, Amity School of Architecture and Planning, Noida



Highlights of the Keynote Address

- The RCA is an exemplary example of the collaboration between two Central Government ministries. Through this collaboration not only are we protecting our riverine resources, but we are also course-correcting our urban development trajectories.
- Going by the trend of cities wanting to be part of RCA, we should expect at least 150 more cities in our family before the DHARA meeting next year.
- Managing an urban river is not only about cleaning up the polluted water. River clean-up activities are end-of-pipe solutions that mean nothing unless the drivers of the problems are fixed. This essentially means that urban river management is all about arriving at transformative solutions that are not restricted to the river zone only. Several of these will actually have to cover the entire city.
- There is a need to spread the message of 'Swasth Dhara, Sampann Kinara' to the citizens of the country through a rigorous 'Jan-Anadolan'. This message should apply across the country using various social media platforms. Students, youth, and citizens of all age groups shall lead such a campaign to create sensitivity toward saving our rivers.
 - In the last few years, there has been a marked increase in environmental awareness in our cities. As a society, we are beginning to appreciate and value the enormous benefits that a healthy environment brings. The number of people adopting environmentally friendly practices is growing by the day. The stage is, therefore, set for ushering in an era of river-sensitive cities.



Keynote address: Shri. Kaushal Kishore, Minister of State, Ministry of Housing and Urban Affairs (MoHUA)

DHARA 2024

DRIVING HOLISTIC ACTION FOR URBAN RIVERS



Announcing DHARA 2024

Shri G Asok, Director General, National Mission For Clean Ganga (NMCG) announced that the city of **Gwalior** has offered to host **DHARA 2024** next year. He thanked Mr. Vikram Kumar, IAS, Municipal Commissioner, Pune for conducting the first River Cities Alliance meeting. "Pune has set a very high benchmark," he stated.

He further added, "**We have ten ministries joined together for the wholesome development of Ganga and its basin. We will share whatever we have learned from Namami Gange and our experiences on this platform.**"

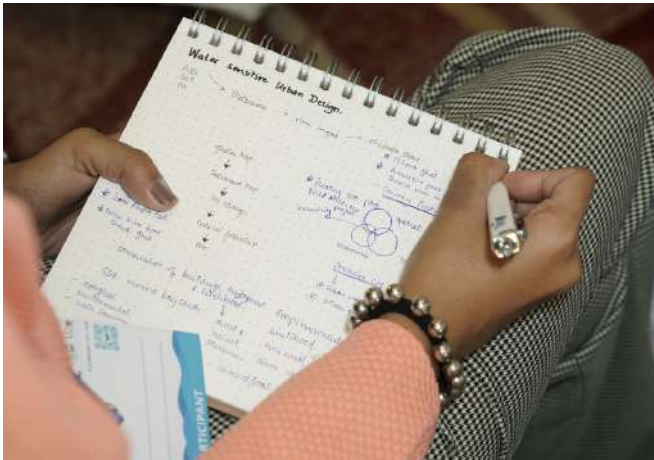


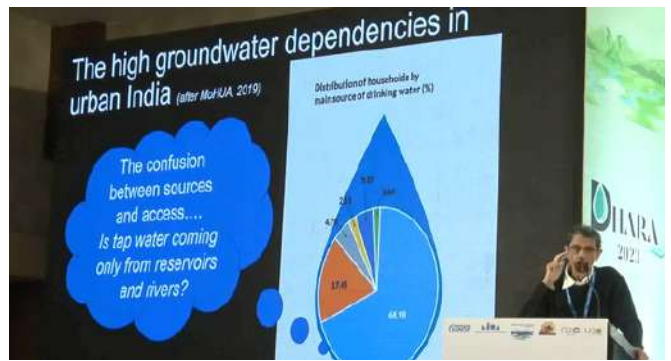
Welcome
to

*Re-imagining healthy urban rivers:
from the minds of young citizens*



The two days of DHARA 2023 were an initiation of a movement on Urban Rivers...





NEWS

A number of people, organisations and institutions followed RCA and DHARA 2023 through....

Two-day conference concludes with pledge for holistic management of rivers flowing through cities

The declaration was made during a two-day conference DHARA, which stands for Driving Holistic Action for Urban Rivers, during the RCA's first anniversary which saw representatives of over 100 cities participating in the discussion to manage rivers.

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National Mission For Clean Ganga & National Institute Of Urban Affairs To Organise International Event On Urban Rivers

One of the major achievements of the NIUA-NMCG collaboration is the establishment of a "River Cities Alliance (RCA)" of 95 river cities across India



Land allocated for 11 STPs for river restoration: Gajendra Singh Shekhawat

TNN / Updated: Feb 14, 2023, 10:26 IST

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Gajendra Singh Shekhawat speaking at DHARA conference

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India

Rivers synonymous with civilisations, need to re-introduce respect for water: Jal Shakti minister

PTI 14 February, 2023 12:00 am IST

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Nashik civic chief unveils plan to tackle Godavari pollution at river cities' meet



Press Trust of India

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Rivers synonymous with civilisations, need to re-introduce respect for water: Jal Shakti minister

Story by PTI • 14 Feb

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Pune, Feb 13 (PTI) Jal Shakti Minister Gajendra Singh Shekhawat on Monday said rivers are synonymous with civilizations and underlined the need to re-establish respect for water.

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At \$240 billion, India world's biggest investor in water sector: Min

MANKA BEHL / Feb 14, 2023, 04:01 IST

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DH DECCAN HERALD

Mangaluru joins alliance to protect rivers

The initiative was announced at the Driving Holistic Action for Urban Rivers (DHARA 2023), currently held in Pune



Mrityunjay Bose, DHNS, FEB 14 2023, 01:27 IST | UPDATED: FEB 14 2023, 01:27 IST



CORE TEAM

Mr. G Asok Kumar
Director General,
National Mission for Clean Ganga

Mr. Hitesh Vaidya
Director,
National Institute of Urban Affairs

Mr. Vikram Kumar
Commissioner,
Pune Municipal Corporation



ORGANIZING TEAM

Mr Himansu Badoni
ED (P), NMCG

Mr Nelapatla Ashok Babu
Director, NRCD

Mr Dheeraj Joshi
DS, NMCG

Mr Sumit Chakraborty
Urban Lead, NMCG-PMC

Mr Ashwini Dubey
Urban Planner NMCG-PMC

Mr Shubham Tiwari
Co-lead Institutional Associate,
NMCG-PMC

Mr Rishabh Chaudhary
Support Engineer, NMCG PMC

Ms Ruchi Tomar
Institution Associate-II, NMCG-
PMC

Ms Smriti Singh
Agribusiness Expert, NMCG-PMC

Dr Sabita Madhvi Singh
Scientist D, NRCD

Mr Debarshi Ghosh
Research Associate, NRCD

b. Media Team (NMCG):
Mr Najeeb Ahsan
Senior Communication Manager,
NMCG

Mr Nadim
Video Editor/Photographer, NMCG

Mr Kanishk Sharma
Social Media Executive, NMCG

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Mr Banibrata Choudhary
Sr Research Associate

Ms Aparna Dwivedi
Communications Specialist

Ms Mehak Aggarwal
Research Specialist

Ms Manju Rajeev Kanchan
Research Associate

Mr Anirudh Soni
Research Associate

Mr Sahil Bhardwaj
Research Associate

Ms Shilpi Chakraborty
Jr. Research Specialist

Dr Kunal Khemnar
Additional Commissioner
PMC

Mr Mangesh Dighe
Environment Officer
PMC

Ms Pooja S Bhole
Sr. Consultant (KPMG)
Environment Department,
PMC



RIVER CITIES ALLIANCE

A city led movement



National Mission for Clean Ganga (NMCG)
1st Floor, Major Dhyan Chand National Stadium
India Gate, New Delhi
Delhi 110002
011-2307 2900/901
www.nmcg.nic.in



National Institute of Urban Affairs

National Institute of Urban Affairs (NIUA)
1st and 2nd Floor, Core 4B,
India Habitat Centre,
Lodhi Road, New Delhi -110003
91-11-24643284, 24617543
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