

MAKING RIVER-SENSITIVE MASTER PLANS

Outcome Report for a Two-day Training Programme
in Gurugram on 14th - 15th July 2022



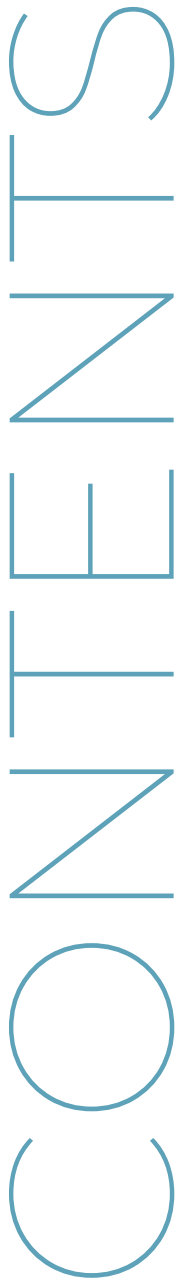




Outcome Report
for a
two-day training program
on 'Making River-Sensitive Master Plans',
with planning consultants and practitioners,
in Gurugram on 14th-15th July 2022







Introduction to River-Sensitive Planning

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Training on Making River-Sensitive Plans

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BACKGROUND

Traditionally, the rivers have been at the centre of various societal practices—cultural, religious, livelihood-related, and recreational. The interaction between rivers and cities has been a multi-disciplinary one - wherein on one hand the rivers have been guiding the growth of cities along their banks, and at the same time, the development within a city has been re-shaping its rivers and associated urban landscapes. However, as dynamic systems, this relationship between rivers and cities has been changing over time. Over the years, sadly, the cities have lost their connection with the river. There is a pressing need to reconcile these rivers with the city and its surroundings.

Also, much of the current undesirable state of rivers can be attributed to disruptive anthropogenic activities. These are somehow more prevalent in urban areas (cities). Therefore, any improvement in the river's health cannot be achieved without first addressing the issues in urban areas. While the cities have largely been responsible for the deterioration of their rivers, they have a central role to play in their rejuvenation.

There is thus a dire need to relook at the ongoing river management efforts. Urban river management has to be brought to the heart of city planning. It has to be seamlessly built within the whole natural planning process. It also means that we need to have city plans that are sensitised towards their rivers.

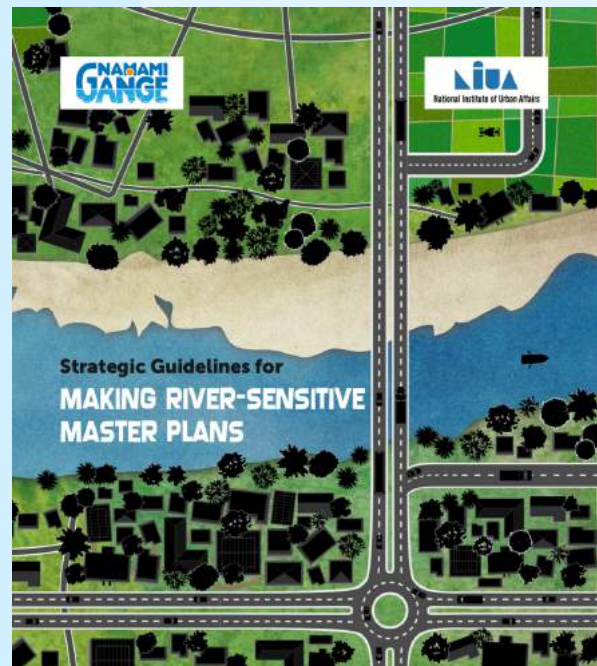


CONTEXT

In light of the above, the Hon'ble Prime Minister of India, at the first meeting of the National Ganga Council held in December 2019, emphasised that **"There is a need for new river-centric thinking in planning for cities on the banks of rivers. River health needs to be mainstreamed into the urban planning process by developing Urban River Management Plans. Cities should be responsible for rejuvenating their rivers"**.

Responding to this call, the National Mission for Clean Ganga (NMCG) and the National Institute of Urban Affairs (NIUA) prepared a **Strategic Guidelines for 'Making River-Sensitive Master Plans'** (1). The purpose of this guidance document is to help city planners across the basin, and the country at large, understand how to integrate river-sensitive thinking into a Master Plan. The document was officially launched on 20 June 2021 by Sh. Gajendra Singh Shekhawat, Hon'ble Minister for Ministry of Jal Shakti.

It elaborates on seven tools and instruments within Master Plans that can be used to address various river-related urban challenges.



Many river cities in India are currently preparing new Master Plans or revising the existing ones. Hence, this is an opportune time for cities to be introduced to the idea of river-sensitive urban planning.

(1) Strategic Guidelines for 'Making River-Sensitive Master Plans'
(<https://niua.in/waterandenvironment/wp-content/uploads/2022/03/making-river-sensitive-master-plans.pdf>)

DETAILS OF THE TRAINING

A **two-day training program** on '**Making River-Sensitive Master Plans**' was organised on **14th - 15th July 2022, in Gurugram**. The purpose of this training was to collectively retrospect on the growing need for river-sensitive urban planning, by understanding the guidance document and exploring its application within river cities in India.



OBJECTIVE

The primary intent of this training was to engage with consultants and practitioners working in different cities, in order to enhance their understanding of the typical river-related challenges faced by cities and how these can be addressed through a Master Plan.

The training sensitised the participants to the idea of mainstreaming river-thinking while preparation of city master plans, along with a detailed understanding of planning provisions for sustainable urban river management. Over the two days, the participants were brainstorming about the possible avenues for integrating river-sensitive thinking within the existing planning processes.

PARTICIPANTS

An open call was announced, to invite applications for the training program. Out of around 140 applications that were received, the training was attended by 32 selected participants from different cities across India. The diverse cohort of participants included urban planners, engineers, architects and environmentalists; who are engaged as consultants, practitioners, professors or students; with government, private or academic institutions. A complete list of participants is enclosed as Annexure.

TRAINING APPROACH

The training programme was spread over two days. The first day covered an introduction to the value of rivers in cities, the requirements for creating an enabling environment to make river sensitive plans, and an overview of the seven master plan instruments that can help in planning for urban rivers. On the second day, the participants were grouped to prepare sectoral strategies for a river-sensitive master plan of a hypothetical city. This was followed by a session on practical experiences from master plans across the country, and a moderated discussion on probable solutions for some unique practical challenges faced during the preparation of master plans. A monitoring and evaluation mechanism was also presented in the end. All the sessions have been detailed out in the following section.

In order to ensure hands-on learning, each of the sessions were structured in the form of:

- **Presentations:** The key topics were presented by members from Water and Environment Vertical, NIUA. These lectures shared detailed insights with the participants about the subject.
- **Moderated Discussions:** The presentations were followed by moderated discussions, wherein the participants were required to brainstorm, discuss and deliberate, seek specific answers and put forward relevant experiences in the sector. This way, a number of unique ideas and practices were shared within the event.
- **Group Activities:** Rather than a one-way theoretical lecture, the entire programme was designed to ensure maximum participation and learning. The participants were divided into five teams, each named after a river. The seating arrangements at the venue were made accordingly. There were multiple group activities and exercises, to ensure exchange of ideas and better understanding of the participants.



A participant presenting the datasets for preparation of a river baseline.



MAKING RIVER-SENSITIVE MASTER PLAN

Training Programme Agenda

14-15 JULY 2022 - RAMADA BY WYNDHAM GURGAON CENTRAL, GURUGRAM

9:30 A.M to 10:00 A.M - Registration

TIME	SESSION DETAILS	TRAINER/MODERATOR
<i>MC – Sahil Bhardwaj, Research Associate, Water and Environment Vertical, NIUA</i>		
10:00-10:15	Introduction and Ice- breaker	Mr Rahul Sachdeva, <i>Sr. Programme Specialist Water & Environment, NIUA</i>
10:15-10:45	Integration of Healthy Rivers into the Master Plan	Ms Vishakha Jha <i>Sr. Environment Specialist Water & Environment, NIUA</i>
10:45-11:30	Overview of Strategic Guidelines on 'Making River-Sensitive Master Plans'	Ms Nikita Madan <i>Sr. Environment Specialist Water & Environment, NIUA</i>
11:30-11:45 - Tea Break		
11:45 - 13:00	Preparing River Baseline	Ms Ishleen Kaur <i>Sr. Environment Specialist Water & Environment, NIUA</i>
13:00-14:00 - Lunch Break		
14:00-14:15	Energizer	Ms Shilpi Chakraborty <i>Intern Water & Environment, NIUA</i>
14:15-15:30	Understanding the Master Plan Instruments <u>Group Exercise</u> - to identify examples under each planning instrument, for addressing the assigned challenge <u>Groups</u> - floodplain management, weak citizen river connect, pollution, degradation of water bodies and wetlands, river-economic potential	Ms Jyoti Verma <i>Sr. Research Specialist Water & Environment, NIUA</i>
15:30-15:45 - Tea Break		
15:45-16:50	Group Presentations Key Takeaways (15 Mins)	Ms Jyoti Verma <i>Sr. Research Specialist Water & Environment, NIUA</i>
16:50-17:20	Address Interaction (10 Mins)	Mr Rajiv Ranjan Mishra <i>Chief Technical Advisor, NIUA</i>
17:20-17:30	Wrap up and Instructions for Day 2	Mr Sahil Bhardwaj <i>Water & Environment, NIUA</i>

Day 1 - 14TH JULY 2022



MAKING RIVER SENSITIVE MASTER PLAN

TIME	SESSION DETAILS	TRAINER/MODERATOR
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MC – Manju Rajeev Kanchan, Research Associate, Water and Environment Vertical, NIUA

10:00-10:15	Recap of Day-1	Ms Manju Rajeev Kanchan Water & Environment, NIUA
10:15-11:15	<u>Brainstorming Session and Group Exercise</u> - to prepare a river-sensitive Master Plan for any city <u>Groups</u> - transport, economy, shelter & regeneration, physical infrastructure, social infrastructure & heritage	Mr Lovlesh Sharma Sr. Water and Infrastructure Expert Water & Environment, NIUA
11:15-11:30 - Tea Break		
11:30-12:45	Master Plan experiences from across the world	Mr Lovlesh Sharma Water & Environment, NIUA
12:45-13:45 - Lunch Break		
13:45-14:00	Energizer	Mr Anirudh Soni Research Associate Water & Environment, NIUA
14:00-15:00	Challenges and Limitations in preparing Master Plans <u>Group Exercise</u> - Brainstorming Solutions for Unique Planning Problems <u>Groups</u> - in the case of seasonal rivers, meandering rivers, braided rivers forming riverine islands, heavily channelized rivers with barrages / embankments and rivers with built spaces till the edge	Dr Victor Shinde Lead Water & Environment, NIUA
15:00-15:30	Monitoring and Evaluation of Master Plan Interventions	Ms Vishakha Jha Water & Environment, NIUA
15:30-15:45 - Tea Break		
15:45-16:05	Address	Mr G Asok Kumar Director General, NMCG

16:05-16:25 - Certificate Distribution and Group Picture

Wrap Up

Day 2 - 15TH JULY 2022

CLIMPSSES OF THE EVENT





SESSION-WISE DISCUSSION & DELIBERATION

TRAINING SESSIONS

The training began with an introduction and an ice-breaker session for the attendees get to know one another, followed by 8 technical sessions spanning over two days, and concluded with a closing session with the invited dignitaries. The technical sessions were as follows:

Session 1: Integration of Healthy Rivers into the Master Plan

Session 2: Overview of the Strategic Guidelines for 'Making River-Sensitive Master Plans'

Session 3: Preparing River Baseline

Session 4: Understanding the Master Plan Instruments

Session 5: Preparation of River-Sensitive Master Plans

Session 6: Master Plan experiences from across the world

Session 7: Challenges and Limitations in preparing Master Plans

Session 8: Monitoring and Evaluation of Master Plan Interventions

On both the days, interesting energisers were conducted after lunch, in the form of informal games on the theme of the training. The emcees for the event, Sahil Bharadwaj and Manju Rajeev Kanchan from NIUA, seamlessly brought together the training across two days.

A brief description of each session and key takeaways from the discussions are shared below:

INTRODUCTION AND BREAKING THE ICE

At the onset, Dr. Victor Shinde from NIUA set the tone by introducing the need for mainstreaming river thinking into the long-term urban planning framework in India. He briefed the participants about the work done by NIUA and NMCG in this domain. He also briefly introduced the necessity of looking at different aspects of the river ecosystems, while preparing the master plans for river cities.

Sh. Dheeraj Joshi, Deputy Secretary, NMCG, Government of India, joined the opening session and motivated the participants to encapsulate river-thinking in all their activities.

Following the introduction, Rahul Sachdeva from NIUA conducted an icebreaker through a series of quirky exercises involving the attendees, showing a diverse mix of participants belonging to different native places, professions and years of experience. This involuntarily provided an opportunity for the participants to interact with each other and also increased their enthusiasm for the training sessions.



Dr. Victor Shinde, NIUA setting the tone for the training programme



Sh. Dheeraj Joshi, NMCG delivering an insight about the project activities



Rahul Sachdeva, NIUA conducting the icebreaker exercise

SESSION 1: INTEGRATION OF HEALTHY RIVERS INTO THE MASTER PLAN

Vishakha Jha from NIUA led this session, by posing a question across the participants about their expectations and vision for the river flowing within their cities. The participants came up with key words like 'Holistic', 'River-City Connect', 'Ecological Sensitivity', 'Pollution Free', 'Green Connect', 'Inclusivity', and many more. She set the discussion tone by explaining how each of these aspects lead to the concept of 'healthy rivers'. This activity set a base for understanding the importance 'healthy rivers' right from the beginning of the urban planning process, i.e. while preparing the master plan vision for a city.



Vishakha Jha, NIUA spearheading a discussion about setting a river's vision for a city

SESSION 2: OVERVIEW OF THE STRATEGIC GUIDELINES FOR 'MAKING RIVER-SENSITIVE MASTER PLANS'

Session 2 focused on delivering a brief overview about the strategic guidelines and an explanation of each of the 7 planning instruments that can be leveraged for making river-sensitive master plans. To begin with, Nikita Madan from NIUA presented a few key statistics reflecting the common challenges faced by urban rivers in India and covered the idea of mainstreaming rivers as part of the overall master planning process. She also elaborated on the Strategic Guidelines on 'Making River-Sensitive Master Plans' as well as the 7 planning instruments that can be leveraged, to inculcate river thinking into a Master Plan. Sharing examples from the Master Plan of New Orleans, she showed a glimpse of cities that have adopted a river-sensitive vision in their plan.

At the end of the session, Dr. Victor Shinde from NIUA added that the purpose of the entire training was to carve a niche for river-sensitive planning in the minds of the attendees, and not to establish that the contents covered during the training are the only way to go about the preparation of river-sensitive master plans.



Nikita Madan from NIUA delivering a session on the overview of strategic guidelines for 'Making River Sensitive Master Plans'



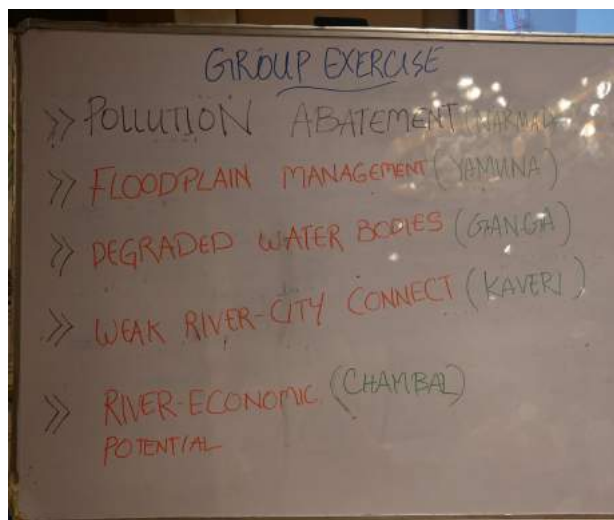
Dr. Victor Shinde from NIUA establishing additional clarity on the usage of guidelines during the master planning process

SESSION 3: PREPARING RIVER BASELINE

This session was focussed on the process of preparing a river baseline for any city. Led by Ishleen Kaur from NIUA, this session dealt with the importance and the components associated with the preparation of a river baseline. She asked the participants to come up with specific datasets that they felt important or have used earlier in the preparation of a river baseline study.

As part of the same, a group exercise was conducted wherein the participants were grouped under 5 dominant river related issues - 'pollution abatement', 'floodplain management', 'degraded water bodies', 'weak river-city connect' and 'river economic potential'. All the groups were further asked to come up with specific datasets that they deemed relevant, in context of the issue at hand. The participants after a stimulating brainstorming session, came up with datasets and the sources of this information.

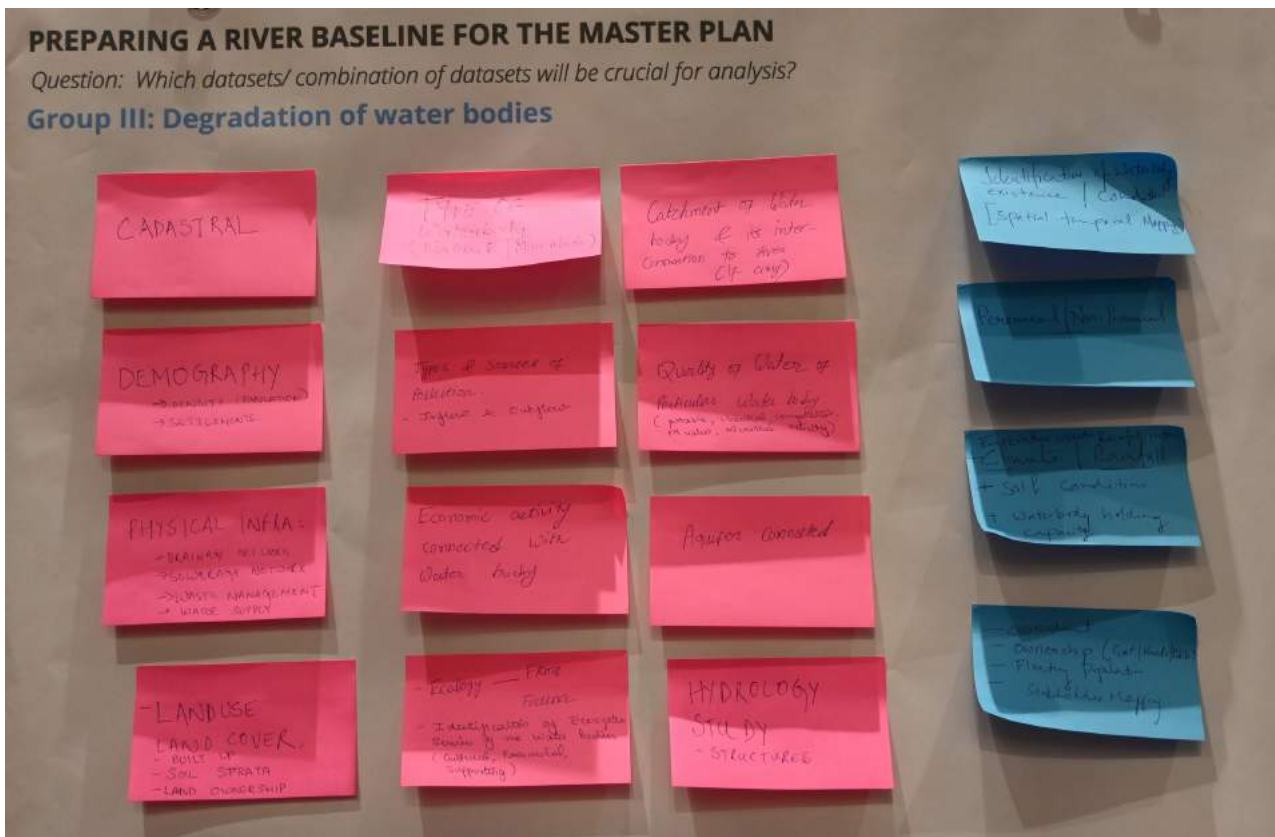
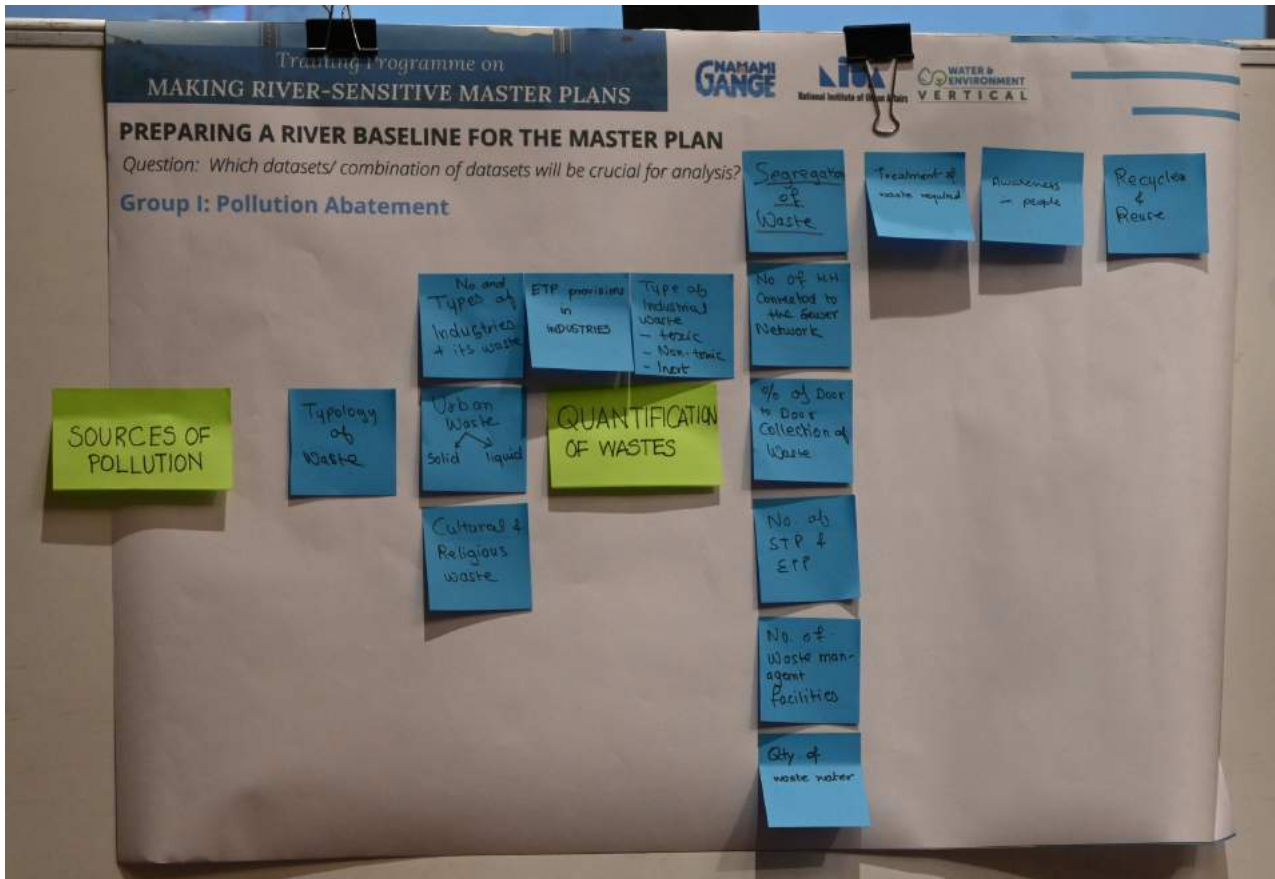
After the exercise, Ishleen Dheer also shared some glimpses from the baseline study conducted during preparation of the Draft Master Plan for Delhi 2041. At the end of the session, Dr. Victor Shinde from NIUA concluded with the relevance of specific data points, while preparing a river-sensitive master plan for any city.



Ishleen Kaur, NIUA delivering the session on Preparing River Baseline



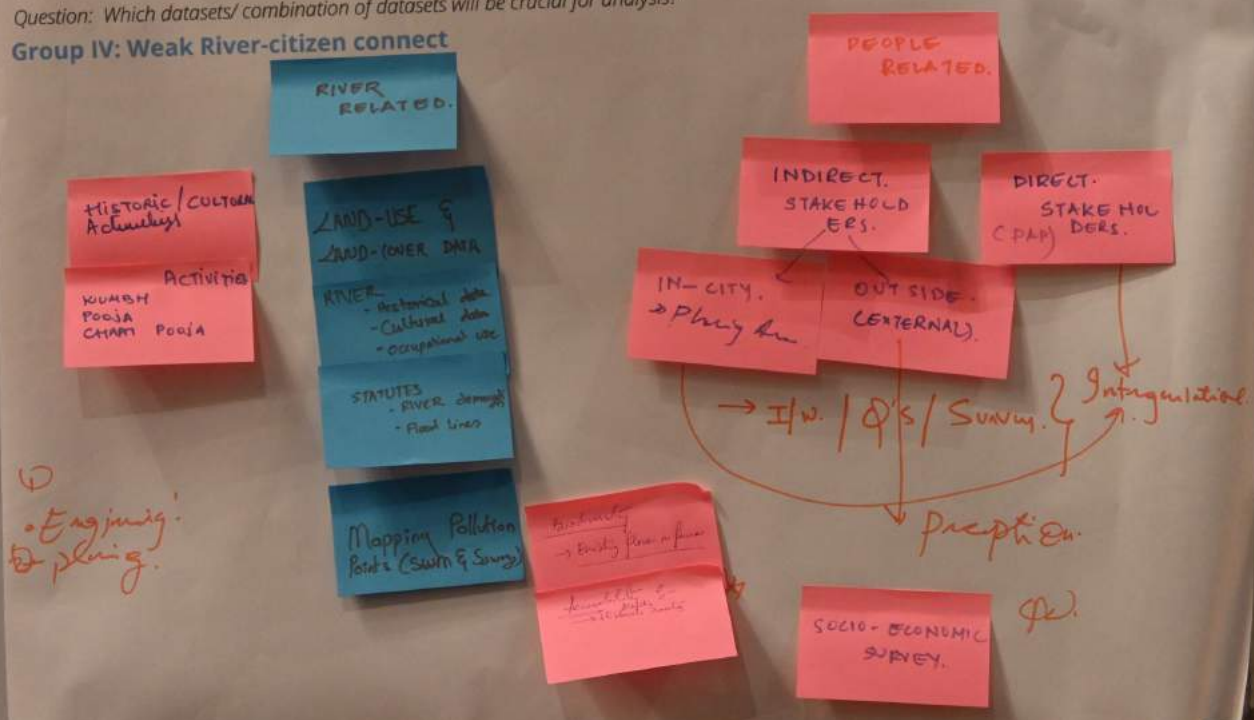
Participants brainstorming and presenting the datasets for their assigned river related issue



PREPARING A RIVER BASELINE FOR THE MASTER PLAN

Question: Which datasets/ combination of datasets will be crucial for analysis?

Group IV: Weak River-citizen connect



Group II: Floodplain Management

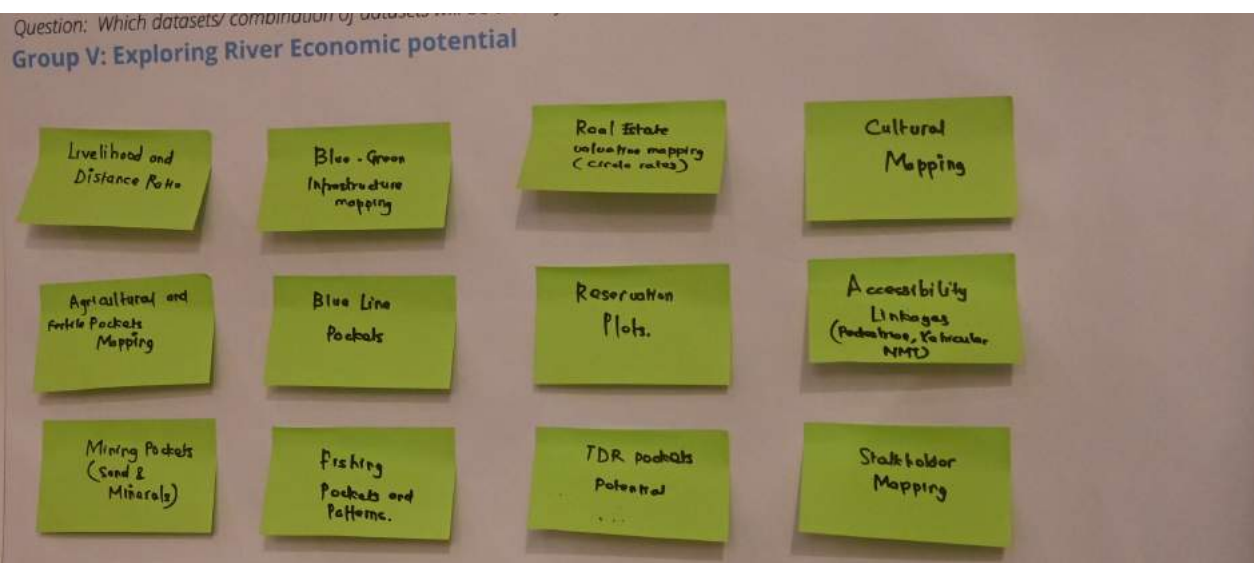
NEED TO HAVE

Good to Have



Group V: Exploring River Economic potential

Question: Which datasets/ combination of datasets will be crucial for analysis?



SESSION 4: UNDERSTANDING THE MASTER PLAN INSTRUMENTS

This session elaborated upon the 7 master plan instruments in detail. Jyoti Verma from NIUA initiated the discussion with a metaphor of how these instruments in the context of preparation of a comprehensive river-sensitive master plan, are synonymous to the different instruments that help deliver a synchronous music in an orchestra. She further elaborated on each of the planning instruments in detail, sharing examples from master plans of different cities. Following the presentation, Dr. Victor Shinde from NIUA engaged the participants in a discussion around the application of these instruments in the context of river cities in India.

Post the briefing, each of the five participant groups were asked to work out probable solutions using these instruments, for the issue assigned in the previous session. After a round of healthy and rigorous brainstorming within groups, the participants presented a variety of creative and applicable solutions for the urban river challenges, that can directly be fed into a city's master plan.



Jyoti Verma, NIUA delivering the session on Understanding Master Plan Instruments.



Participants brainstorming and presenting planning solutions for their assigned river challenge

CHANAK GANGE **NIA** **WATER & ENVIRONMENT VERTICAL**

Training Programme on MAKING RIVER-SENSITIVE MASTER PLANS

Understanding the Master Plan Instruments Norms and Standards

Encroachment Floodplain management

Weak citizen river connect

Pollution

Degradation of water bodies and wetlands

River-economic potential

NORMS AND STANDARDS

for prohibiting

5

- RESTRICTED USE IN PROTECTED AREAS
- QUALITY STANDARDS STRICTER LEVELS
- RECYCLABLE OR NON-RECYCLABLE
- BANS ON PLASTIC
- Discharge standards of CPCB
- C A D Waste management
- Plastic Waste Management
- NECESSARY WASTE WATER TREATMENT
- NORMS FOR DISPOSAL OF WASTE WATER INTO W. BODIES
- Integrated Urban Water Management
- Regulation of Buffer zone

CHANAK GANGE **NIA** **WATER & ENVIRONMENT VERTICAL**

Training Programme on MAKING RIVER-SENSITIVE MASTER PLANS

Understanding the Master Plan Instruments Recommendations and Directions

Encroachment Floodplain management

Weak citizen river connect

Pollution

Degradation of water bodies and wetlands

River-economic potential

RECOMMENDATIONS AND DIRECTIONS

for holistic action and interventions on river management

6

- ASSessment & IDENTIFICATION OF LENGTH & WIDTH OF URBAN WATERSHEDS
- WATER QUALITY MONITORING
- WATER QUALITY MONITORING
- DIRECTIONS FOR CONTROLLING URBAN POLLUTION
- GUIDELINES FOR WATER FLOW
- RECOMMENDATIONS FOR USING RIVER AS A MEANS OF TRANSPORTATION
- PUBLIC AWARENESS & PARTICIPATION
- CHECKLIST WITH OTHER SOURCES OF POLLUTIONS
- Regulation of Buffer zone
- Integration of pollution control & water management systems
- Increase Economic Potential
- Subsidy/Incentive approval
- Capacity Building for Tourism
- Sustainable Power Generation

CHANAK GANGE **NIA** **WATER & ENVIRONMENT VERTICAL**

Training Programme on MAKING RIVER-SENSITIVE MASTER PLANS

Understanding the Master Plan Instruments Special Projects

Encroachment Floodplain management

Weak citizen river connect

Pollution

Degradation of water bodies and wetlands

River-economic potential

SPECIAL PROJECTS

for enhancing the citizen-river connect

7

- Vertical Ganga on bridges
- Plantation drives
- ICT
- Data based
- Plantation of trees & water trees
- BEACHS
- OPEN AMPHI THEATRE
- "RAHAHIES"
- BOTANICAL PARKS/ TREEWALKS
- BIRD WATCHING SOCIETY
- ADEQUATE TOURIST INFRASTRUCTURE
- WATERFRONT DEVELOPMENT
- LAKEFRONT DEVELOPMENT
- RESTORATION OF WATER BODIES & RESTORATION
- RESETTLEMENT PROJECT WITH WATER BODIES
- Cultural Village/ Pockets development
- Biodiversity Park

SESSION 5: PREPARATION OF A RIVER-SENSITIVE MASTER PLAN

This session revolved around the preparation of a river-sensitive master plan. Lovlesh Sharma from NIUA spearheaded this discussion, by putting forth the crucial idea that river ecosystem needs to be valued even within the sectoral provisions made by a master plan. He further initiated a discussion on how the river may be leveraged strategically, under each pillar of a master plan namely mobility, shelter, economy, heritage, social infrastructure, and physical infrastructure. The end result showcased a planning system where each sector of the plan identifies strategies without compromising on the needs of the riverine ecosystem.

Post this discussion, a group exercise was initiated wherein the participants were once again divided into five groups, each group representing one of the the above mentioned sectors of a masterplan. These groups were then asked to develop sector specific strategies, capturing river-sensitive elements associated with these sectors. Each group came up with well-thought holistic solutions under these sectors, while also sharing some experiences from the course of their professional practice.



Lovlesh Sharma, NIUA delivering the session on Preparation of a River Sensitive Master Plan



Participants brainstorming and presenting sectoral solutions, as a part of the group exercise

Lets prepare a River-sensitive Master Plan
Brainstorming session



Group I. Transport group - GANGA GROUP

How can 'river be leveraged' for the 'Sector specific strategy' of the Master Plan?

- Visual Corridors for Transport
- Creation of Transit Islands (Bicycle, Walk, Water, Energy, Safety)
- Ecological (Logistics, Recreation, Sports)
- Last Mile Connectivity
- Proposing TOD Beyond Buffer Zone

How 'Sector specific strategy' of the Master Plan be 'River-sensitive'?

- Development of Water Lines, Walkways, Logistics & Recreational Transportation
- Segregated Residential from Road (E.g. A-Grade & B-grade)
- Hydro-Electricity for ATMs, Transport & CC, Community Stations
- Usage of Recycled Water (Treated Waste Water, Ice Cooling, Washing (Microplastic))
- Mandating IPM, Flood Resilience for Urban in the Urban Center Environment

Lets prepare a River-sensitive Master Plan
Brainstorming session



Group II. Shelter & Regeneration - YAMUNA GROUP

How can 'river be leveraged' for the 'Sector specific strategy' of the Master Plan?

- Integrating Green-blue Infra in Neighbourhood level (Food bank, Airlock, Hydroponic)
- Food security through neighbour level food urban farms
- Redesigning & Allocating activities around rivers when doing in-situ rehab/regeneration
- Using rivers & Water bodies as Carbon sink
- Creating local neighbourhood open spaces around rivers in buffer / floodplains
- Mandating disaster sections by integrating rivers within masterplans
- Regenerating traditional water systems & structures

How 'Sector specific strategy' of the Master Plan be 'River-sensitive'?

- Bandwidth Water Supply to limit Groundwater Abstraction
- SPONGE CITY
- Redesigning the sewerage & drainage system for the city residential area (Decentralized system)
- Control Springs DCR for abating Urban Heat Island effect through micro-structures
- High revenue/ low Ground Coverage activities & land use (use) in river buffer
- Improving base of ownership of local through social activities & economic instruments
- Mandating Household level LowWater Harvesting to regenerate Ground Water & Water bodies
- IEG activities in Communities around rivers & Water bodies
- Limiting heavy activities in Greenfield Planning

Group III. Economy - CHAMBAL GROUP

How can 'river be leveraged' for the 'Sector specific strategy' of the Master Plan?

- FUNCTION OF INTEGRATED ELDERHOOD
 - AGED
 - FISHING + ANCILLARY
 - MINING
 - TOURISM.
- PLOT RESERVATION
 - CULTURAL VILLAGES
 - LEISURE RESERVATION
 - PASTY PLOTS
- RIVERFRONT DEVELOPMENT & MARKETING.
- DEDICATED LIVESTOCK CELL.
- LAND USE FLEXIBILITY FOR INDUSTRIES.
- REGULATED MANAGEMENT SYSTEMS / REGULATIONS

How 'Sector specific strategy' of the Master Plan be 'River-sensitive'?

- RENEWABLE ENERGY ECONOMY
- CIRCULARITY OF WASTE.
- EFFICIENT & SENSITIVE INFRASTRUCTURE PLANNING.
- MONITORING MECHANISMS.

Group IV. Social Infra and Heritage - KAVERI GROUP

How can 'river be leveraged' for the 'Sector specific strategy' of the Master Plan?

- SOCIAL INFRA
- IDENTIFICATION & DEVELOPMENT OF S/INFRA LIKE:
 - RECREATIONAL CAMPS, CONVENTION CENTRES
 - BIOPARKS, PARKS.
 - SPORTS COMPLEX, EDUCATIONAL CENTER, CECENTERS, Day market, MEJA
- MAPPING OF HERITAGE & CULTURAL ACTIVITIES, WRT. RIVER
- HERITAGE
 - RIVER/H₂O SPECIFIC.
 - OTHER HERITAGE
 - Religious Heritage - Deula Ghat
 - Cultural Heritage - Ghatbhaty River.
 - SCENIC VALUE; POSITIVE GREENBELT ENV.; VIBRANT ECONOMY

How 'Sector specific strategy' of the Master Plan be 'River-sensitive'?

- MAPPING OF ECO SENSITIVE ZONES AROUND WTR. BODIES.
- PREPARING POLICY GUIDELINES TO ADDRESS ILEFFECTS OF UNPLANNED DEVELOPMENT AROUND WATER BODIES.
- SOLID WASTE MANAGEMENT - LANDFILL.
- LIKE,
 - 1) BUFFER ZONES
 - 2) WASTE TREATMENT - LIQUID - SOLID
- SUGGESTING ALTERNATIVE MEANS FOR TO URBAN POLLUTION
 - VILARJAN TANK
- INSTALLING BARRIERS ON BRIDGES TO URBAN POLLUTION.
- SUGGESTING HQS FOR PART. COLLABORATION FOR POLLUTION CONTROL. FOR RESIDUAL & HERITAGE RELATED ACTIV.
- IMPOSING RESTRICTIONS ON LAND USES

Group V. Physical Infrastructure - NARMADA GROUP

How can 'river be leveraged' for the 'Sector specific strategy' of the Master Plan?

- WHAT IS IMPORTANCE OF HAVING RIVER (BENEFITS)
- DESIGN OF WATER SUPPLY - if located along the ridges shoulder can make by gravity.
- DESIGN OF ROADS - along the topography
- DESIGN OF DRAIN - along water lines
- FACILITATING TREATMENT FACILITIES
- DESIGN OF IRRIGATION SYSTEM - use 2000 meters in downstream.
- LIVELIHOOD ADV.

How 'Sector specific strategy' of the Master Plan be 'River-sensitive'?

- HOW TO MAKE MR. RIVER SENSITIVE (METHODS)
- DENSITY REGULATION along river. Support
- HEIGHT RULES FAR / FSI / TDR
- NATURE BASED SOLUTIONS FOR FLOODING. - BUFFER ZONES FOR MANY PROJ.
- ENERGY EFFICIENCY incentives, inter linkage water systems as nifty etc. Regulate use of industrial use of water
- WTP & STP CHECKPOINTS
- RECREATIONAL LAND USE PATTERNS
- Conducting regular audits - upgrade system and maintenance
- DECENTRALISED WASTE MANAGEMENT (ON SEPTIC TANK CONVISSION) - ENERGY LOOP TO BE CREATED
- BIO INFRASTR. - permeable zones - open areas - smart construction - recreational spc. - buffer zones

SESSION 6: MASTER PLAN EXPERIENCES FROM AROUND THE WORLD

This session focussed on examples of river-sensitive approaches adopted by master plans for cities across the world. Lovlesh Sharma from NIUA led this session by sharing snippets from the master plans of Delhi, Noida, Surat and Hyderabad. This was followed by a moderated discussion, with the participants reflecting on the applicability of these examples in the context of their cities.



Lovlesh Sharma, NIUA sharing experiences from the Master Plans of cities across the world

SESSION 7: MONITORING AND EVALUATION OF MASTER PLAN INTERVENTIONS

This session was led by Vishakha Jha from NIUA, throwing light on the mechanisms for monitoring and evaluation of the interventions implemented as part of the master plan. She shared the example of Draft Master Plan for Delhi 2041, reflecting on the provisions for monitoring that were included in the plan. She also reflected upon some additional indicator based systems, like floodplain management score and riparian buffer score, that may be used by cities for monitoring their environmental assets. The session was followed by a discussion to clarify all queries from the participants.



Vishakha Jha, NIUA discussing about monitoring and evaluation mechanisms for master plan interventions

SESSION 8 : CHALLENGES AND LIMITATIONS IN PREPARING MASTER PLANS

In this session, spearheaded by Dr. Victor Shinde from NIUA, some unique practical challenges faced during the preparation of master plan were addressed through a moderated discussion. Participants were once again divided into groups, to identify possible solutions for addressing shifting river courses, development till the river edge, braided river, seasonal river and upstream pollution load. The purpose of this session was not to deliver or extract solutions from the groups, but to collectively brainstorm and realise the extent of challenges faced during the master planning process.



Dr. Victor Shinde, NIUA moderating the brainstorming discussion on challenges and limitations in preparing master plans

ADDRESS - DAY 1

In addition to the technical sessions on Day 1 of the training, Sh. Rajiv Ranjan Mishra, Chief Technical Advisor, NIUA addressed the participants, sharing stories of his experiences in urban river management. He congratulated participants for the enthusiasm exhibited by them during the training. He also shared a few anecdotes and excerpts from his book 'Ganga: Reimagining, Rejuvenating, Reconnecting'.



Sh. Rajiv Ranjan Mishra, Chief Technical Advisor, NIUA addressing the participants

SPECIAL ADDRESS - DAY 2

In addition to the technical sessions on Day 2, a special address was made by Sh. G. Asok Kumar, Director General, NMCG. Apart from a brief introduction about his career trajectory, he also shared experiences from some of his earlier projects.

He motivated the participants to work towards a larger holistic agenda for river management. Additionally, he also reflected upon the importance of this training programme, and urged all the participants to be sensitive of the river systems while preparing the future development plans for their cities.

At the end of the workshop, all the participants were awarded with a 'Certificate of Participation' by Sh. G. Asok Kumar.



Sh. G. Asok Kumar, Director General, NMCG delivering a motivational address



All participants of the training group

ANNEXURE: PARTICIPANT LIST

MAKING RIVER SENSITIVE MASTER PLAN		NAMAMI GANGE		WATER & ENVIRONMENT VERTICAL	
REGISTRATION SHEET					
Name	Organisation	Contact details (email and contact)	14 th July	15 th July	Signature
1 AKHIL NAWANI	IIT (BHU)	9450470357	<i>[Signature]</i>		<i>[Signature]</i>
2 ANDREWS JACOB	CDD SOCIETY	andrews.jecddindia.org	<i>[Signature]</i>		<i>[Signature]</i>
3 CHARVE JAIN	SPA Delhi	9535532653 9910017422 jaincharve@gmail.com	<i>[Signature]</i>		<i>[Signature]</i>
4 DR. HARSIMRAN KAUR	IIT (BHU)	9877316136	<i>[Signature]</i>		<i>[Signature]</i>
5 NEHA UPADHYAY	Ahmedabad Municipal Corporation	7069040836 neha@ahmedabadcity.gov.in	<i>[Signature]</i>		<i>[Signature]</i>











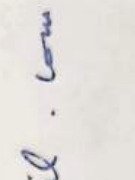

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WATER & ENVIRONMENT
VERTICAL

REGISTRATION SHEET

Name	Organisation	Contact details (email and contact)	Signature	14 th July	15 th July
6 RINKU MANTA	Tower & Country Planning NLP Assesst	rinku_manta@yahoo.com			
7 RUCHI RAGHUVANSHI	CIDCO	ruchi_raghuvanshi_0705 @gmail.com			
8 SAHIL ALWARIA					
9 SONALI DESHPANDE	Urban Design Div. MMRDA.	sonali.deshpande@mmrda-maharashtra.gov.in			
10 SAIBA GUPTA	NAUA	saibagupta@gmail.com			

MAKING RIVER SENSITIVE MASTER PLAN

**GNANAMAMI
GANGE**

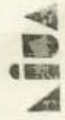
Special Office of Urban Affairs
NIVA
WATER & ENVIRONMENT
VERTICAL

REGISTRATION SHEET

Name	Organisation	Contact details (email and contact)	Signature	14 th July	15 th July
11 GAURAV THAPAK	MP State Planning Commission	gauravthapak.iltkgp@gmail.com 8989834889	<i>Gaurav Thapak</i>	<i>Gaurav Thapak</i>	
12 KUNTALI SHAH	Affordable Housing Mission, Gandhinagar, Gujarat.	A.K. Kuntali.814@gmail.com 8460543690	<i>Kuntali Shah</i>	<i>Kuntali Shah</i>	
13 PALLAVI THOOL	NIVA	8888505237 pthool@niva.org	<i>Pallavi Thool</i>	<i>Pallavi Thool</i>	
14 SARIKA AGARWAL	Dev Phoomi University Dehradun	sarichin@gmail.com 9897022544	<i>Sarika Agarwal</i>	<i>Sarika Agarwal</i>	
15 AVANTI TOHARE	Town Planning Department, Government of Maharashtra	avanti.tohare@gmail.com 7709498045	<i>Avanti Tohare</i>	<i>Avanti Tohare</i>	

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NAMAMI



WATER & ENVIRONMENT
VERTICAL

National Institute of Urban Affairs

REGISTRATION SHEET

Name	Organisation	Contact details (email and contact)	Signature	14 th July	15 th July
16 KAMMILI DURGA AISHWARYA		9442472560 ktravunwo@ymail.com			
17 RESHMA SUSAN MATHEW		7506371266 reshmasusanmathew21@gmail.com			
18 SADAF SIDDIQUI		9769841175 sadayasiddi142@gmail.com			
19 MS PRATIMA MARWAH		Pratima Jha 965488853 TCE			
20 MS MEHAK REKHI		9815425865 mehakrekhi2086@gmail.com rekhi@tce.co.in			

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REGISTRATION SHEET




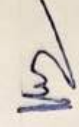




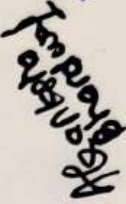

Name	Organisation	Contact details (email and contact)	Signature	14 th July	15 th July
21 MR SRIDHARAN MURALI	TATA CONSULTING ENGINEERS	9884675011 sridharan.m@tce.com	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
22 SUMANI DABAS	Delhi Assembly Research Centre - Associate fellow	8130203835 sumani.arch@gmail.com	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
23 ANKUSH NIMBRIA					
24 JASH GOSWAMI	EY	goswami.jash@ey.com 962408200	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
25 SYED MOHAMMAD HAMZA	NIUA	sabduh@niua.org	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

MAKING RIVER SENSITIVE MASTER PLAN

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GOVERNMENT OF INDIA
VERTICAL

REGISTRATION SHEET

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26 ANKUR SACHAN	IPS BANK	ankur.sachan@ipsbank.com 9595 455985			
27 A.B. DESHMUKH	Municipal Corporation CO. RD. Munjyabod (Mumbai)	anirudh.deshmukh@mcgmci.com 976499570 Dr. P. R. T. P.			
28 MD. RAZA KHAN	Town & Country Govt. of M.D.	M. Corporation Aurangabad 9422264917 ghoshkulshan@gmail.			
29 ADITYA TIWARI	AURANGABAD SMART CITY DEV. CORP. LTD. AURANGABAD M.H.	apm.ce@angdco.com smartcity.in. 91 9404004364.			
30 AKANSHA BHARDWAJ	M. Pbn Student JGDPOW	91 7621144215			

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GANGE**

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Ministry of Urban Affairs

REGISTRATION SHEET

Name	Organisation	Contact details (email and contact)	Signature	14 th July	15 th July
31 DIKSHA GUPTA	TEE	98 73288 542 dikshag@tee.co.in			
32 D. VARSHA DAWLE	Navnitman Development Consultants (P) Pvt. Ltd.	vadawle1@gmail.com 9823133081			
33 RAJITA JAIN Ashwin Dubey	Bartlett School of Architecture, UCL NMCG.	rajitajain27@gmail.com 9871880803 8120554804			

ANNEXURE: ENERGIZERS

Interesting energisers were prepared for post lunch sessions on both days, to break the monotony of the formal sessions.



ANNEXURE: PARTICIPANT FEEDBACK

TESTIMONIALS

Dear Cohort
Jai Hind!
It's been a fantastic journey, we are absolutely delighted to have had the pleasure and the privilege of training with you.
On behalf of Team Aurangabad we welcome you to visit us and allow us the opportunity to indulge you in the amazing experience that 'Aurangabad' is.
Looking forward to hosting you all.
Wishing you the very best.

Dear All,
Thanking the entire team of NIUA for hosting this wonderful program.
It's been a great training session. Looking forward to have more such learning experiences.
Also thankful to all participants for sharing their insight into the subject.
It was a great experience !!
Sharing my contact details for future connect

WhatsApp testimonials from participants

REMARKS:
Nice initiative. But number of experianced person should be increased.

REMARKS:
I came with purpose to get advanced knowledge in River Sensitive Master Planning. And, I will go back with so many take aways!!! Thank You So Much!!!

REMARKS:
Very insightful Presentation and Brainstorming sessions
Appozing work by water and environmental vertical.
Victor sir & Team,

REMARKS:
- Very informative and Interactive.
- Group discussions were immersive and fun
- Engager was engaging

Testimonials from the participants, as mentioned in the feedback forms

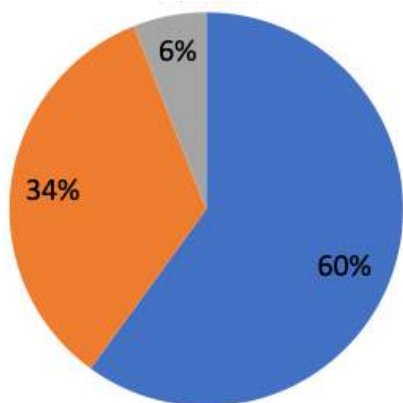
Apart from written testimonials, a live feedback session was conducted on Day 2 of the training program by Rahul Sachdeva from NIUA and the general comments were similar to the written testimonials. Overall, the participants felt the session extremely fruitful and quite beneficial.



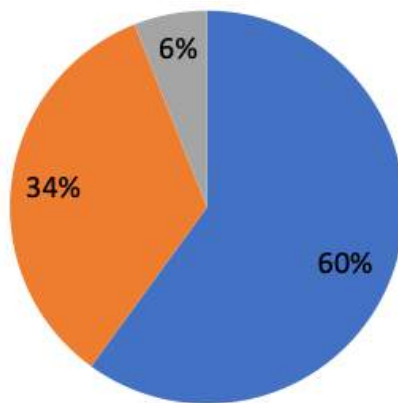
Rahul Sachdeva, NIUA conducting the feedback session.

Feedback forms were circulated on both the days of the training programme. The overall results received from all the participants are compiled as follows.

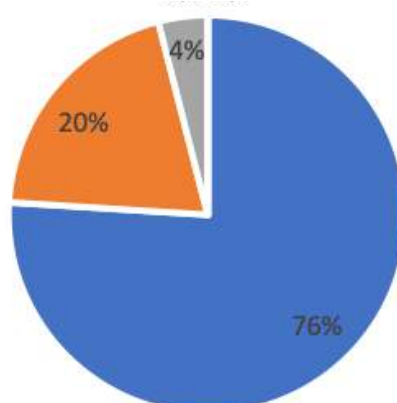
DELIVERY OF CONTENT



PARTICIPATION AND ENGAGEMENT



ENERGIZERS



■ EXCELLENT ■ VERY GOOD ■ GOOD ■ SATISFACTORY ■ AVERAGE

CONTACT

For any further details, please feel free to get in touch with us.

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 NIUA_India

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 National Institute of Urban Affairs

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 cleanganganmcg

 Namami Gange