WELCOME

PARTNERS FOR WATER
CO-CREATING IMPACT

India Water Platform Meeting

07 July 2025

Program

- 13.00 Opening and welcome *(Mr. Sander Carpaij, Min. I&W)*
- 13.10 Statements by the Government of India
- 13.20 Statements from the Embassy of the Kingdom of the Netherlands in India
- 13.40 Priorities und the Strategic Water Partnerships *(Mr. Sander Carpaij, Min. I&W)*
- 14.00 Project TA Sunderbands *(Mr. Jasper Leuven – Royal Haskoning DHV)*
- **14.25 Coffee break**
- 15.00 IFAT Mumbai *(Mirjam van Buchem, NWP)*
- 15.25 Developments and project opportunities on watertechnology in India *(Steven van Rossum, Valuing Blue)*
- 15.50 Contribution of Invest International *(Mr. Leon Weisscher)*
- 16.15 Water as Leverage in India *(Mr. Hans Gehrels, Deltares and Esmee van de Ridder, RVO)*
- **16.45 Networking drinks**

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India Water Platform meeting

Bilateral Water Cooperation

Sander Carpay
Program Manager & Delta Coordinator India
Ministry of Infrastructure & Water Management

The Netherlands International Water Ambition (NIWA)

Joint international water policy of four principle Ministries of the Netherlands National Government (Infrastructure and Water Management, Foreign Affairs, Economic Affairs and Climate Policy, Agriculture, Nature and Food Quality) to promote coherent use of Dutch water related international policy making instruments and offers a platform for cooperation among public, private, societal and knowledge partners.

Strategic Water Partnership

Signed in 2022 by Ministers of Jal Shakti and Infrastructure & Water Management

Valid until 2027.

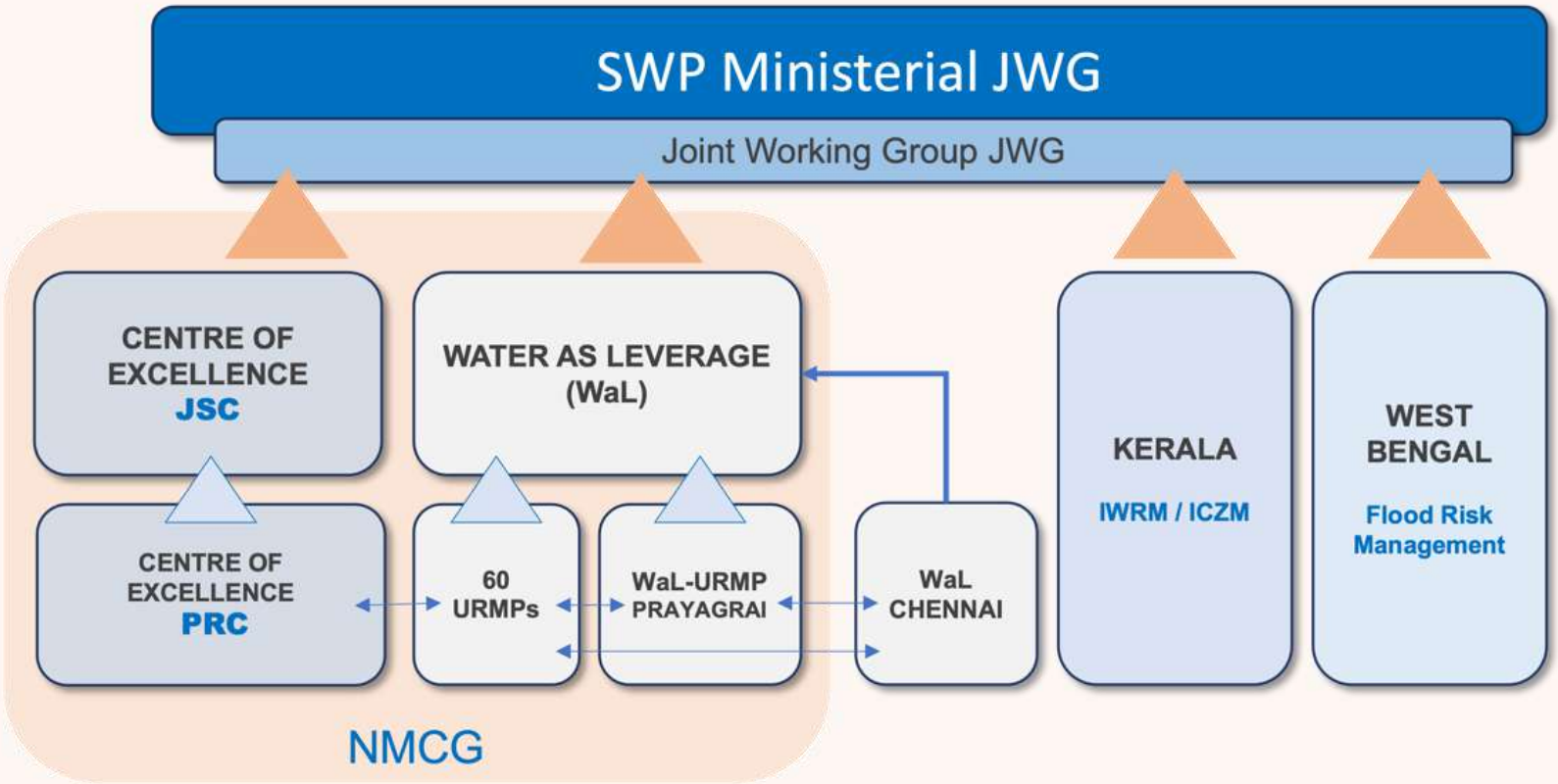
Under the SWP we work together on three main geographic areas:

- With National Mission for Clean Ganga in the Ganga Basin
- In Kerala, post-floods
- In West-Bengal, flood-prevention

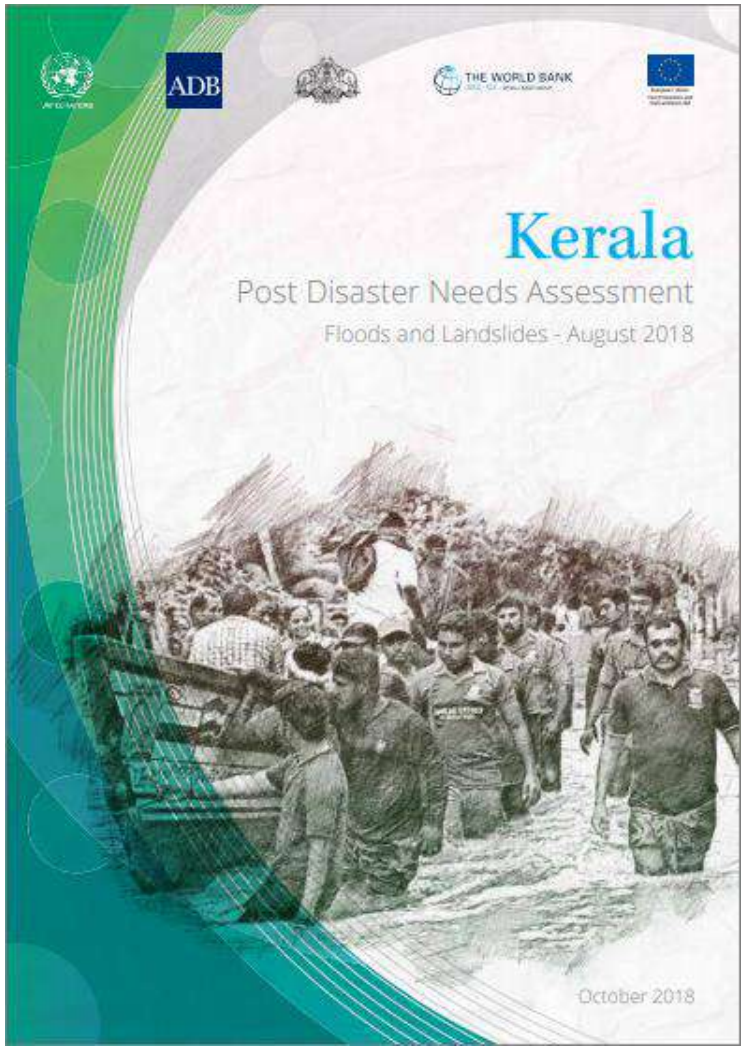
And we support the India-led initiative of the Coalition for Disaster Resilient Infrastructure (CDRI) through:

- Urban Water Infrastructure training modules
- Delhi Flood Risk Management

Strategic Water Partnership - SWP



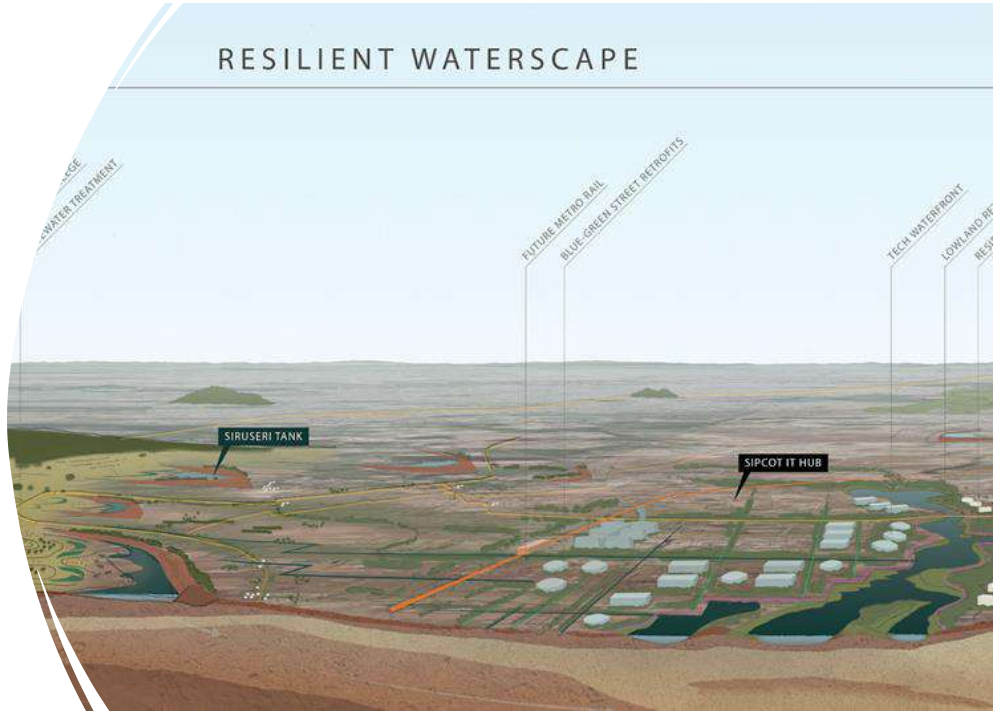
Kerala – post floods 2018



In Sundarbans – West Bengal

Water as Leverage for Resilient Indian Cities

In Chennai, Tamil Nadu since 2018



Water as Leverage
For Resilient Cities

Water as Leverage for Resilient Indian Cities

In Prayagraj, Utter Pradesh since 2023

At national level, integrating WaL Principles into the Urban River Management Framework (URMP), being rolled out in 60 cities in 4 states + foreseen for Delhi.

Water as Leverage
For Resilient Cities

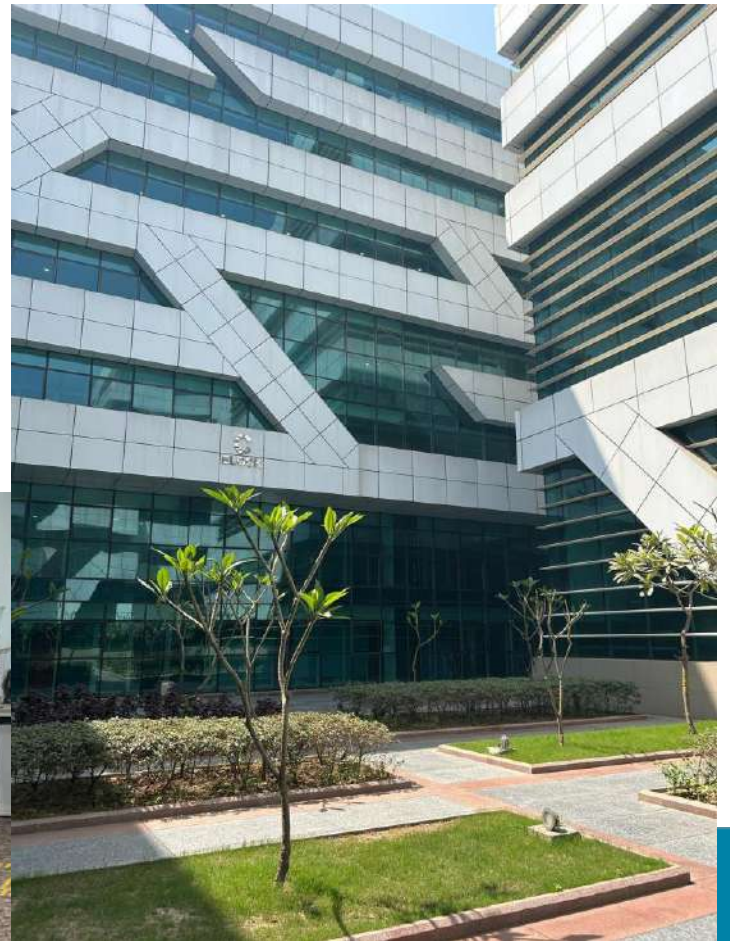
Flagship SWP program: **India-NL Centre of Excellence**

In the SWP the CoE is agreed as follows:

"[...] to establish an India-Dutch Center of Excellence (CoE) on water safety, water availability and water quality."

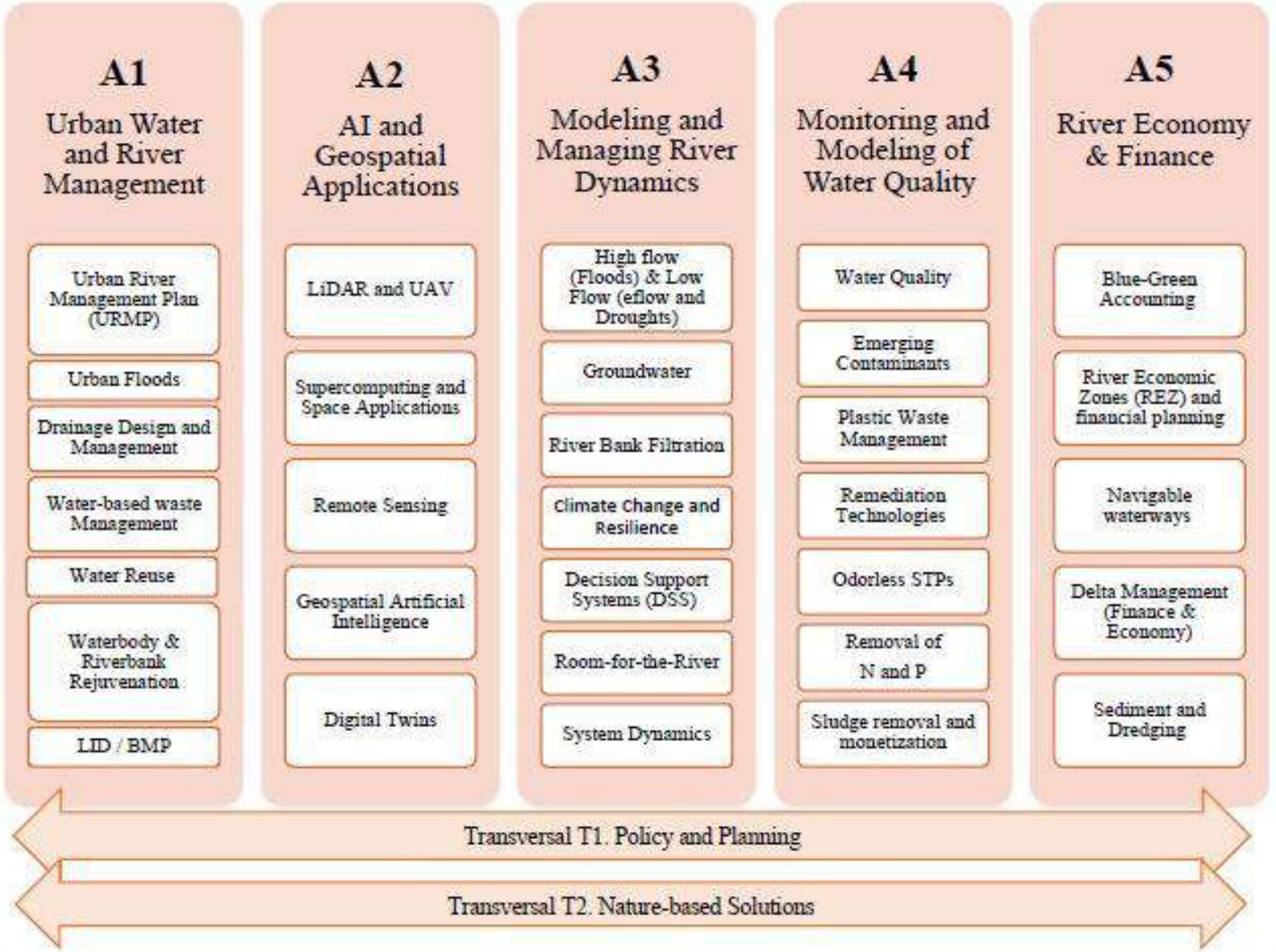
India - Netherlands International Center of Excellence on water safety, water availability and water quality

Hosted at the Indian Institute of Technology Delhi.



India - Netherlands International Center of Excellence on water safety, water availability and water quality

1. The Center will provide **action-oriented research** for addressing the water challenges for river rejuvenation & Nature Based Solutions in urban areas.
2. **Identification, showcasing and landing** of available technologies from Netherlands.
3. Center will act as **knowledge and innovation hub** for incubating new ideas and showcasing state of the art technologies.
4. **Develop high-quality training programs** for NMCG/MoJS personnel as well as produce trained human capital for the country of India.


A1
Urban Water and River Management
Urban River Management Plan (URMP)
Urban Floods
Drainage Design and Management
Water-based waste Management
Water Reuse
Waterbody & Riverbank Rejuvenation
LID / BMP
A2
AI and Geospatial Applications
LiDAR and UAV
Supercomputing and Space Applications
Remote Sensing
Geospatial Artificial Intelligence
Digital Twins
A3
Modeling and Managing River Dynamics
High flow (Floods) & Low Flow (eflow and Droughts)
Groundwater
River Bank Filtration
Climate Change and Resilience
Decision Support Systems (DSS)
Room-for-the-River
System Dynamics
A4
Monitoring and Modeling of Water Quality
Water Quality
Emerging Contaminants
Plastic Waste Management
Remediation Technologies
Odorless STPs
Removal of N and P
Sludge removal and monetization
A5
River Economy & Finance
Blue-Green Accounting
River Economic Zones (REZ) and financial planning
Navigable waterways
Delta Management (Finance & Economy)
Sediment and Dredging
Transversal T1. Policy and Planning
Transversal T2. Nature-based Solutions

Secretariat Activities

- IITD-IHE Joint Training Program
- Internships
- Hackathon
- Startup Incubation
- Technical assistance
- Competitions & awards
- Chair Professorships
- NMCG PhD/M.Tech/B.Tech. Project Awards
- IITD-NMCG Distinguished Lecture Series
- Conferences & Seminars
- Trainings/Workshops
- Knowledge platform management

India - Netherlands International Center of Excellence on water safety, water availability and water quality

Work Plan 2025-2026: first foreseen activities

1. Exposition on Dutch water solutions

2. IFAT Mumbai + CoE Delhi combined mission

3. Water treatment pilot at NMCG sewage treatment facilities

4. Urban River Management Plan (URMP) – Delhi Flood Risk Management – NDMA-DDMA-CDRI-NMCG-CoE.

5. CDRI Urban Water Infrastructure Resilience training modules

Netherlands' contribution to the CoE:

Partners for Water – delta country budget incl. Water as Leverage

Partners for Water – all relevant innovations from IvWW subsidy rounds

All knowledge developed under Govt programs e.g. Room for the River, SLR Knowledge Program, RWS manuals also internationally developed, etc.

CDRI training modules on urban water infrastructure resilience

NWO program in India, also upcoming call

IHE Delft and IIT Delhi to develop joint training programs of interest to NMCG and Ministry of Jal Shakti

And much more!

Foreseen CoE activities on the Indian side:

1. Upgradation of URMP Framework and development of an Urban River Management Plan (URMP) for Delhi.
2. Development of the Ganga Water Digital Twin (GWDT) and a Water Cycle Atlas using Hybrid Physics-AI approaches
3. LiDAR and UAV-based assessment, design, and improvement of urban water infrastructure with a focus on drainage network.
4. Modelling and Scenario Analysis for Reuse of treated water for Aquifer Recharge with respect to existing regulatory practices in the country and comparing with international best practices
5. Understanding the Fate and Transport Dynamics of Contaminants Emanating from Plastic, Electronic, and Medical Waste Dumping Sites: Developing a Health Risk Assessment Framework and Remediation Strategies for Soil-Water System
6. Source-mapping, Health Impact Assessment, and Effective Mitigation of Fecal Pollution in the Ganga River

Next steps in the CoE:

- Develop a Work Plan – NL – NMCG – IITD
- Populate the CoE online solutions portal
- Announcement during PM Modi visit to NL
- Grand opening
- And go!

Other funded water activities in India

Agriculture transition through productive biodiversity

Meta Meta

Objective:

Support transition of current agricultural system through the use of nature-based solutions which can contribute effectively to

a) managing biodiversity,
b) increased food security and
c) promotion of practical uses of Nature Based solutions (better water management and healthy ecosystems).

Other funded water activities in India: WaterMappers

Solution

WATER MAPPERS

Real-life, data driven water budgets to improve water management practices and align availability and demand

- Real-time water level and consumption data at customizable time intervals
- Automated data analytics, that estimate current and future water budgets
- Manual adjustable alerts and advices on water budgets
- Always connected and secured end-to-end-encryption, connectable

Intern gebruik

Partners

KIAAR

WHYSOR

ARTESIA
WATER RESEARCH UNLIMITED

K. J. SOMAIYA INSTITUTE OF APPLIED AGRICULTURAL RESEARCH

Solar Magic

WATER MAPPERS

Lead Applicant

Intern gebruik

Other funded water activities in India: Solidaridad

	Full Project Title	Short Title	Duration	Sectoral Theme
	Increasing Water Use Efficiency in Sugarcane Growing in India	FDW Sugarcane	2015-2020	Promote improved water safety and Security
	Pollution Prevention and Efficient Water Use in the Kanpur-Unnao Leather Cluster, Uttar Pradesh, India	FDW Leather	2017-2022	Promote efficient water use and pollution abatement
	Water Efficiency in Sustainable Cotton-based Production Systems in Maharashtra, India	FDW Cotton	2019-2023	Promote improved water safety and security
	Sustainable Food and Nutrition Security and Transforming Smallholders' Livelihood in Madhya Pradesh, India	SDGP Soy	2019-2023	Contribute to improved food and nutrition security

You are all invited to contribute to the CoE and the strong bilateral water cooperation!


Thank you!
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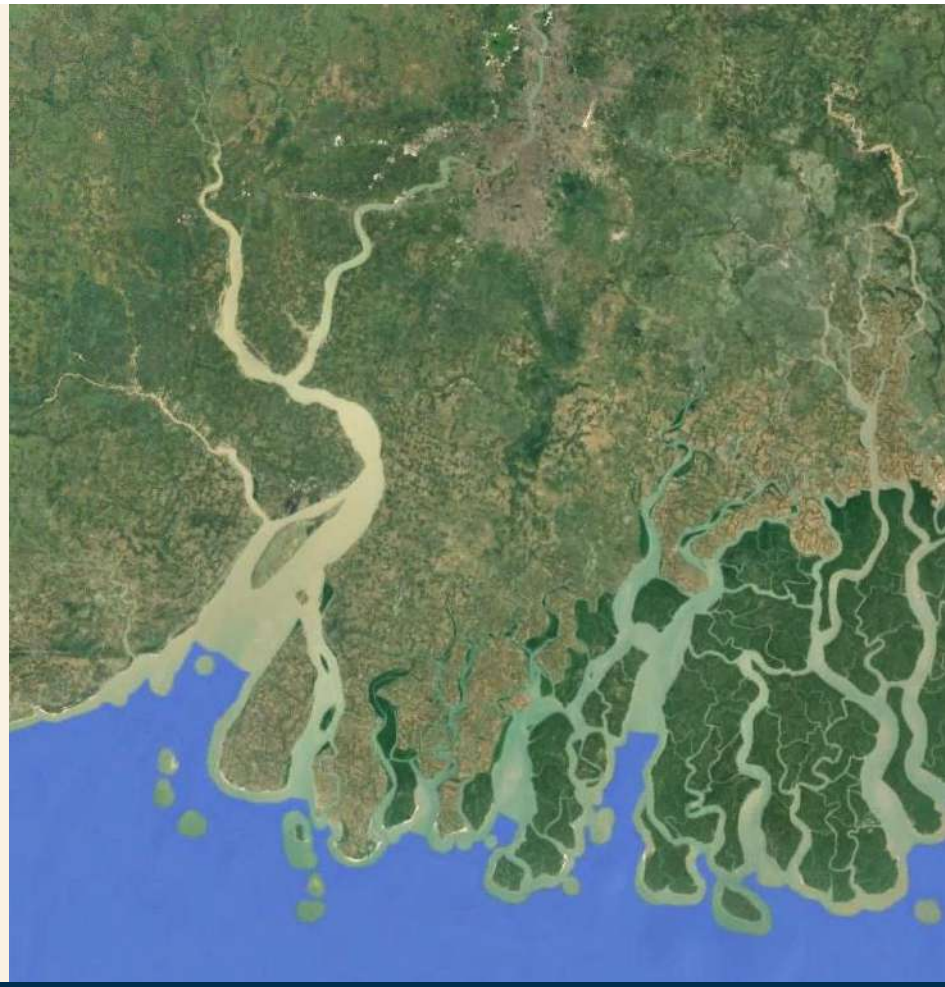
Improving flood resilience in the Sundarbans

India Water Platform Meeting

BJ5287-**Project related**

Jasper Leuven, George Peters, Floris van der Ziel, Bas van Maren, Fernanda van der Velde
jasper.leuven@haskoning.com

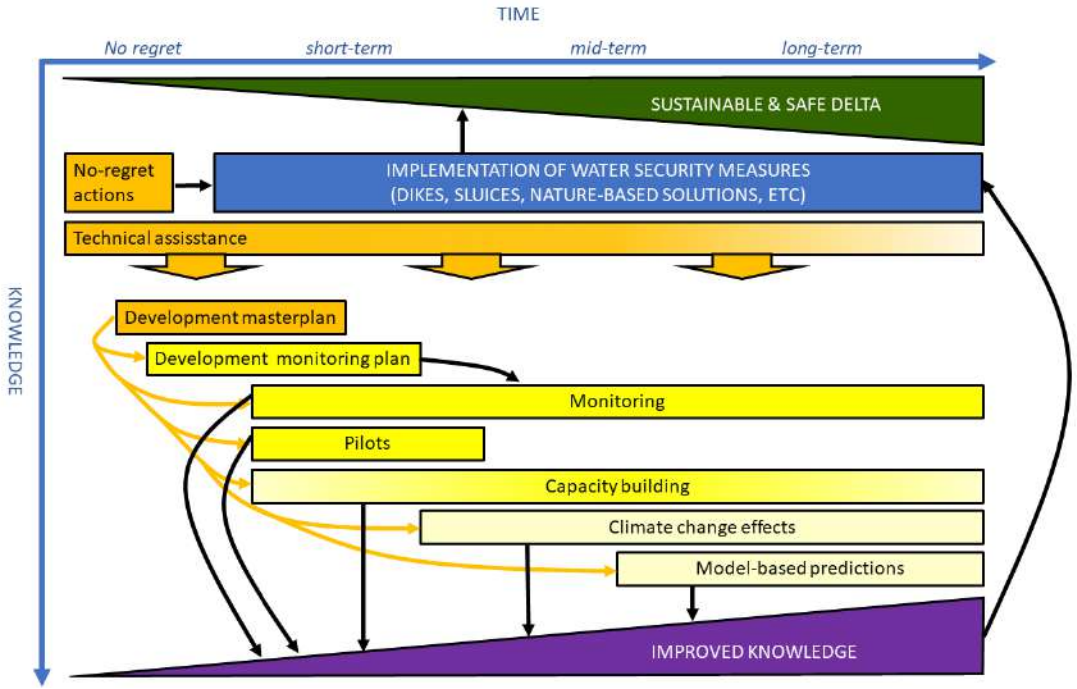
7 July 2025



1.
2.
3.
4.
5.

RVO PvW – West Bengal partnership on Flood Resilience

- 2022 – DRR mission
- 2023 – Several technical assistance activities (World Bank & RVO)
- 2024 – PvW TA project RVO



Workplan and objectives

June

0. Inception phase

1. Immediate support phase

2. Design phase Mousuni and Kumirmari Island

3. Construction & risk management phase

4. Inspection, maintenance and monitoring phase

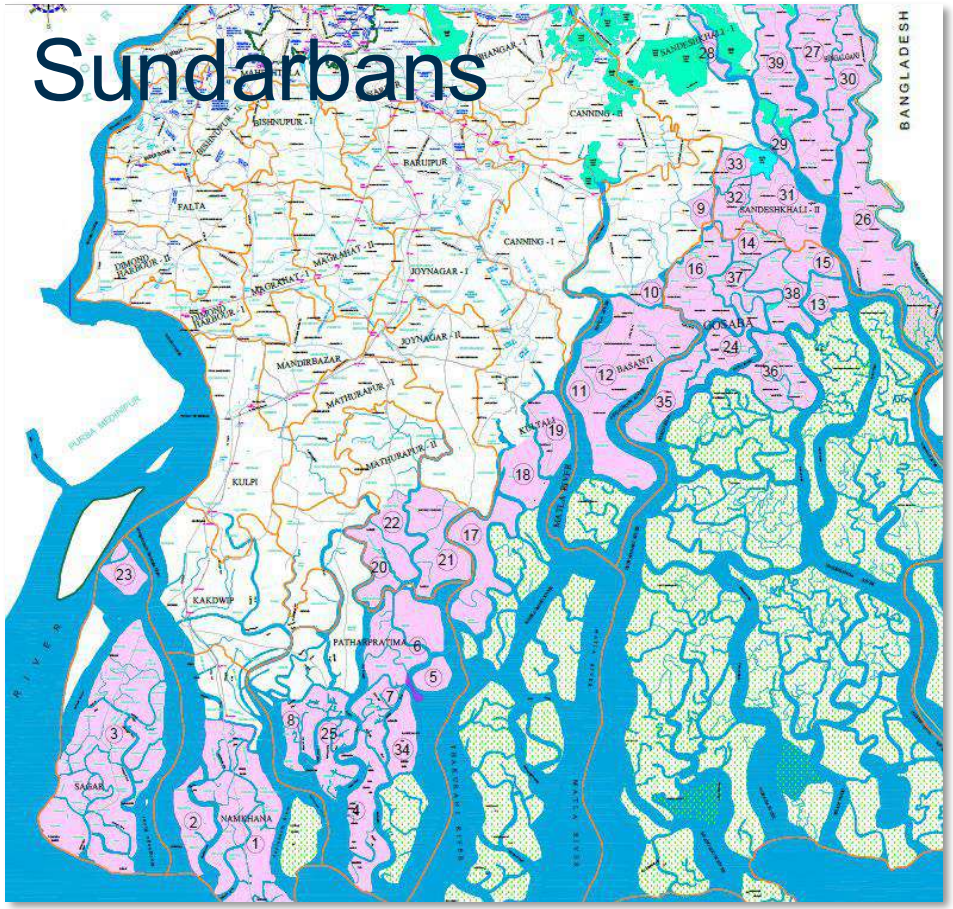
Dec 2025

- To assist the Irrigation and Waterways Department (I&WD) of the Government of West Bengal (GoWB) **in hands-on technical assistance** to improving their capacity in planning, design, construction preparation and logistics and maintenance of flood resilience interventions in the Sundarbans Delta
- Combine conventional (hard), Nature-based and hybrid solutions
- **To provide guidance** to I&WD in being better prepared for the preparation and implementation of the World Bank SHORE project
- Project duration: ~18 months (started 1 June 2024)

Spatial scales

Project

Scale of the entire Sundarbans



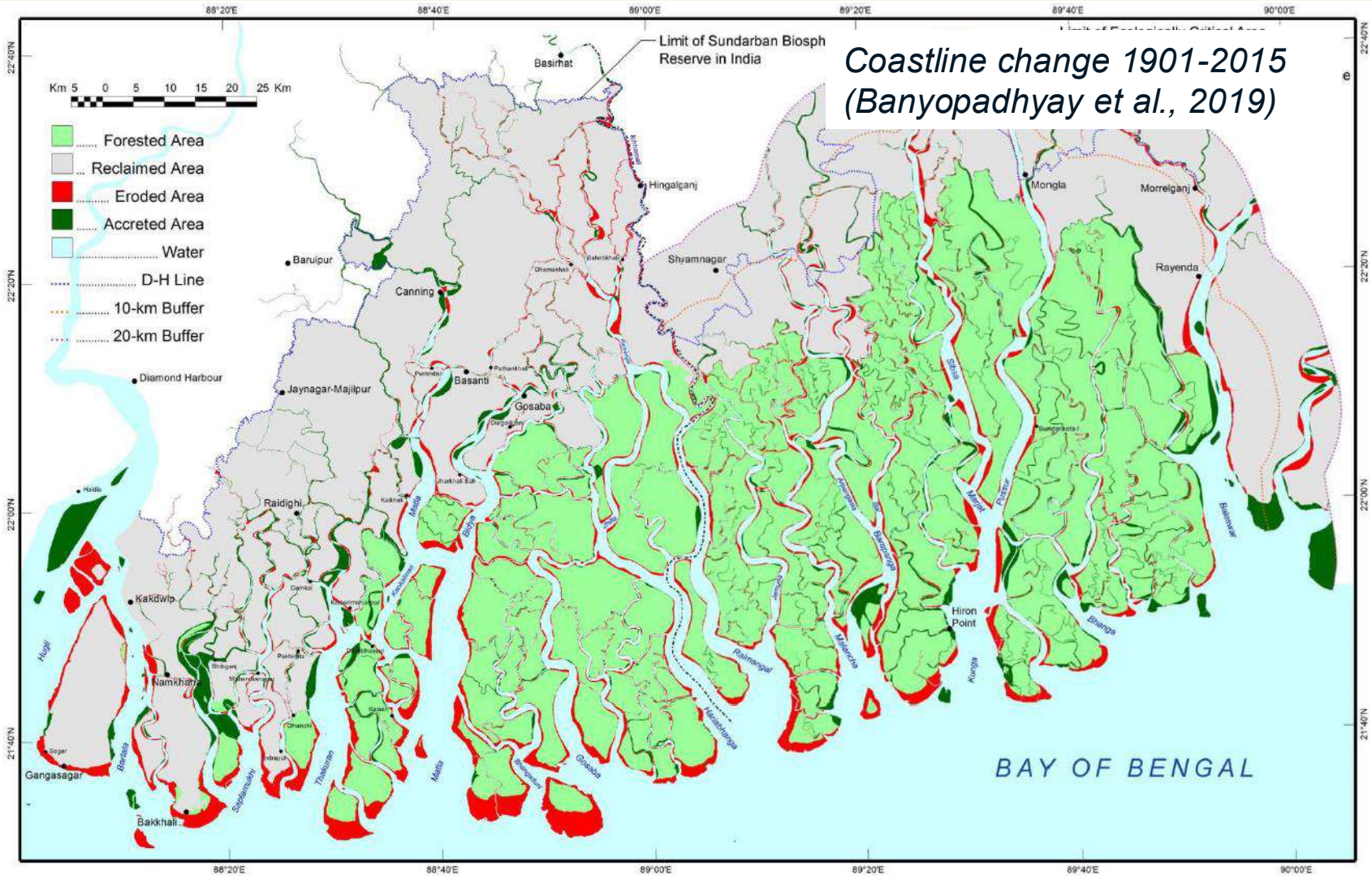
Scale of a single island

Masterplanning

Microplanning

Master planning on the scale of the Sundarbans

- Changing channels
- Locations where problems occur may change
- Population density and economic value may change
- Interventions you take will change the system

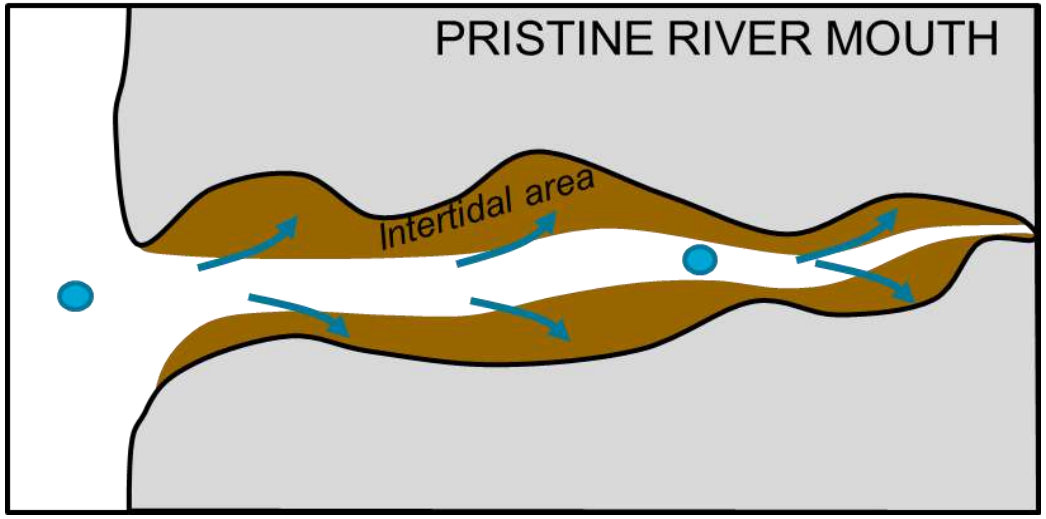


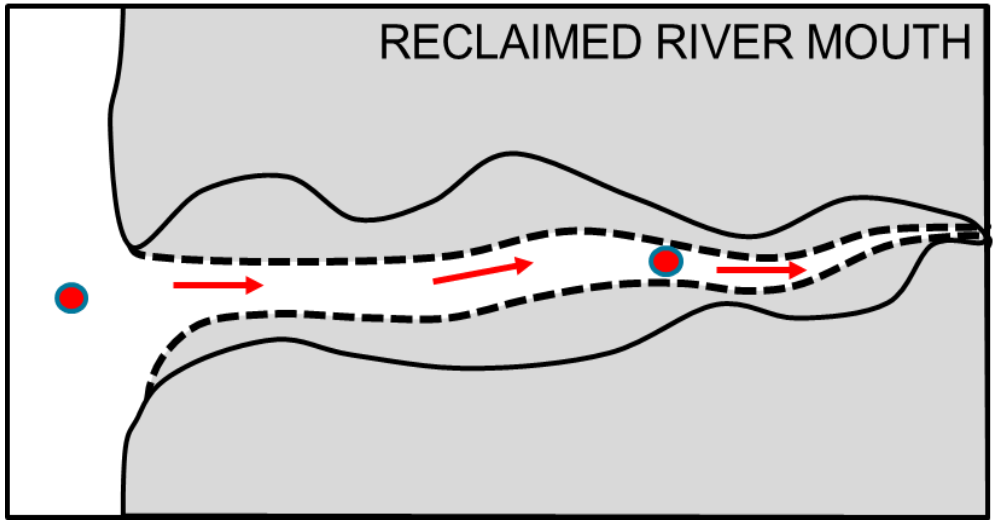
Coastline change 1901-2015 (Banyopadhyay et al., 2019)

Large-scale system changes Sundarban

Main processes leading to changes:

- Fresh water has been cut off
- Land has been embanked and is closed off from tidal influence
- Tidal amplification
- Sea-level rise

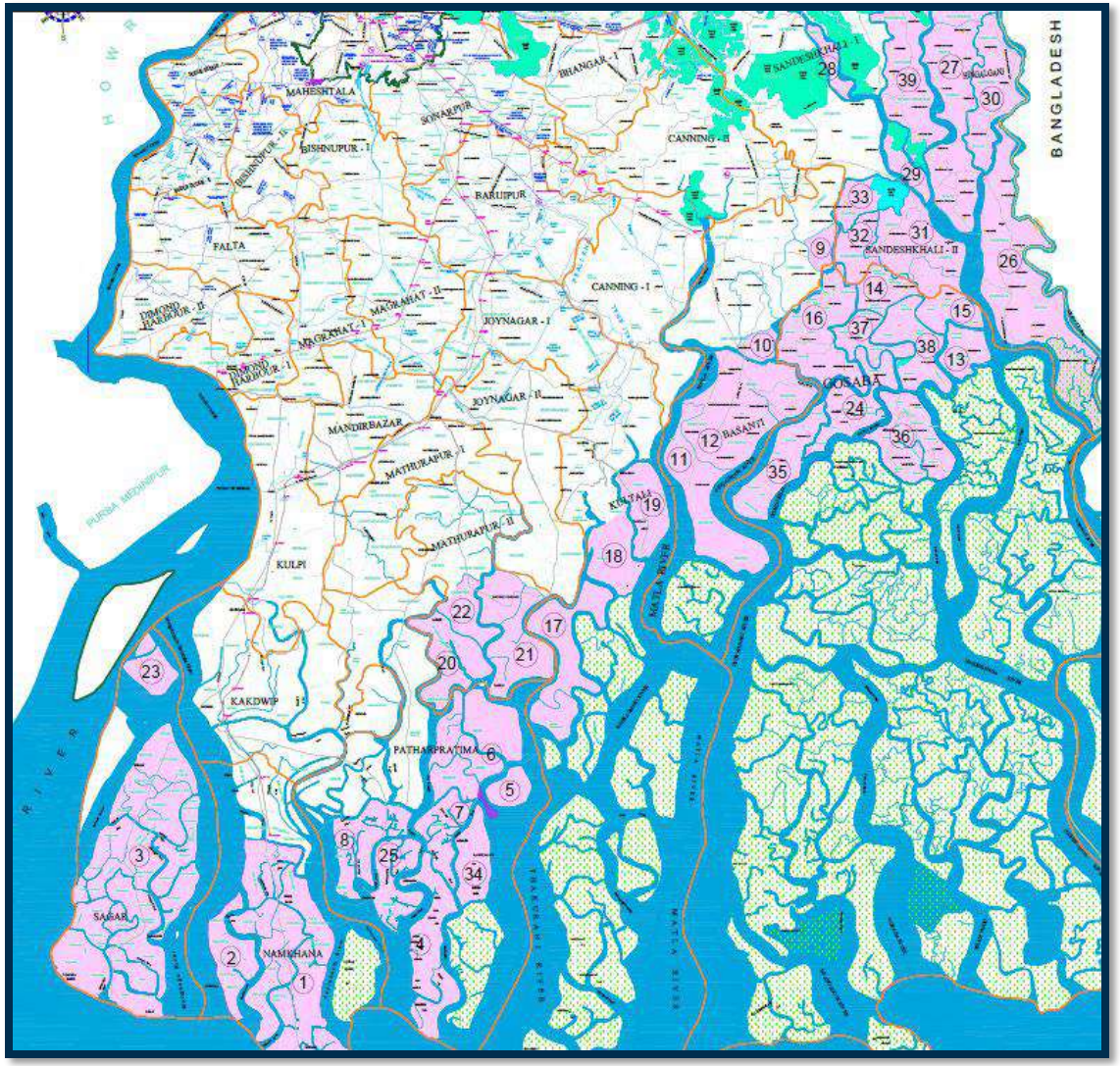




Questions for a bigger project

Scope: 39 vulnerable islands: pink area

- What is the duration of the program?
- What is the expected lifespan of the flood protection works?
- Is it possible to protect everything? (budget, logistics)
- **How does it all fit into the long-term development strategy for the Sundarban?**



2030 | 2050 | 2075 | 2100

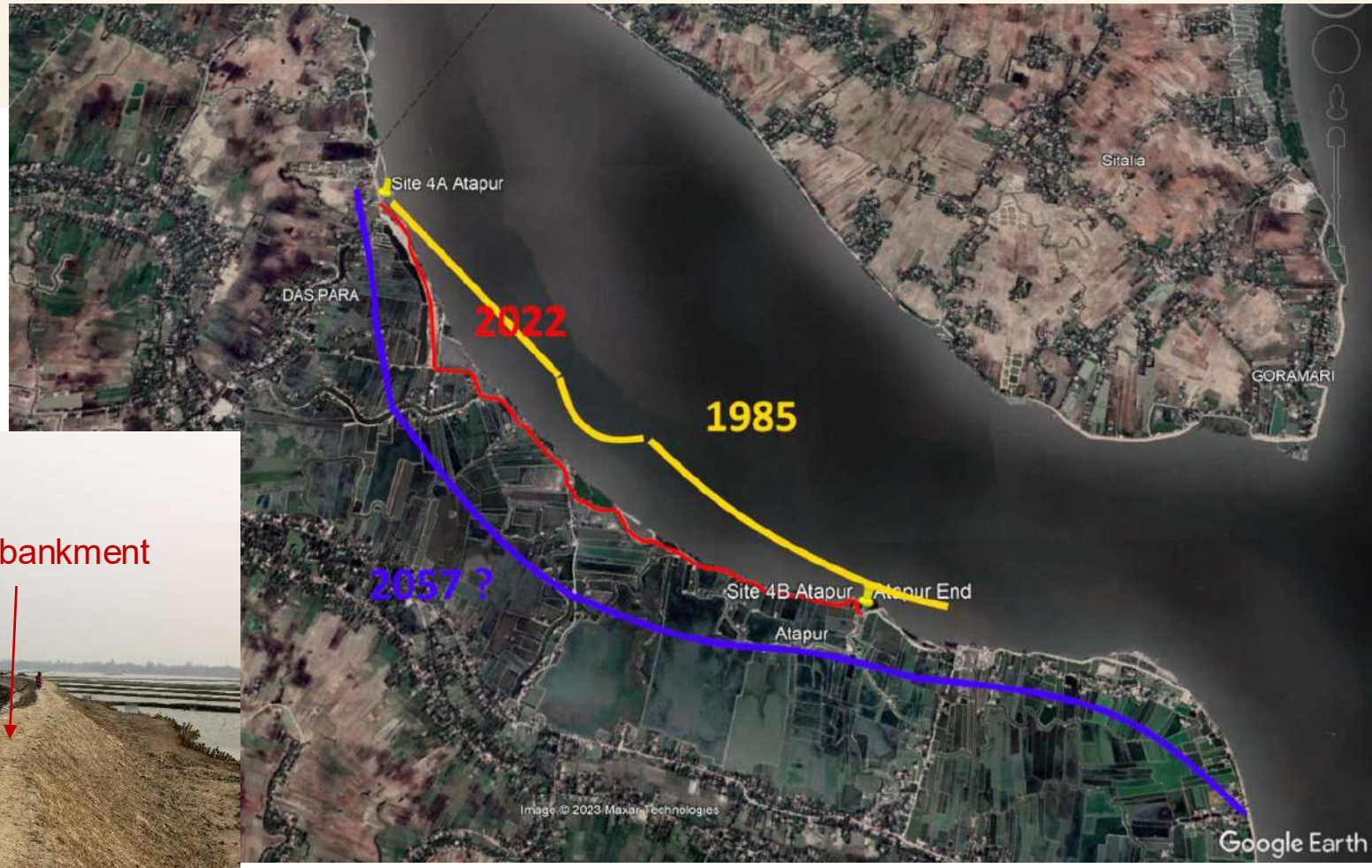
Selected pilot locations and Gangasagar & Digha

1. Patibunia
2. Gobindapur Abad
3. Atapur
4. Deulbari-Debipur
5. Mousuni - Baliara
6. Kumimari - Dakshinpara
7. Digha
8. Gangasagar

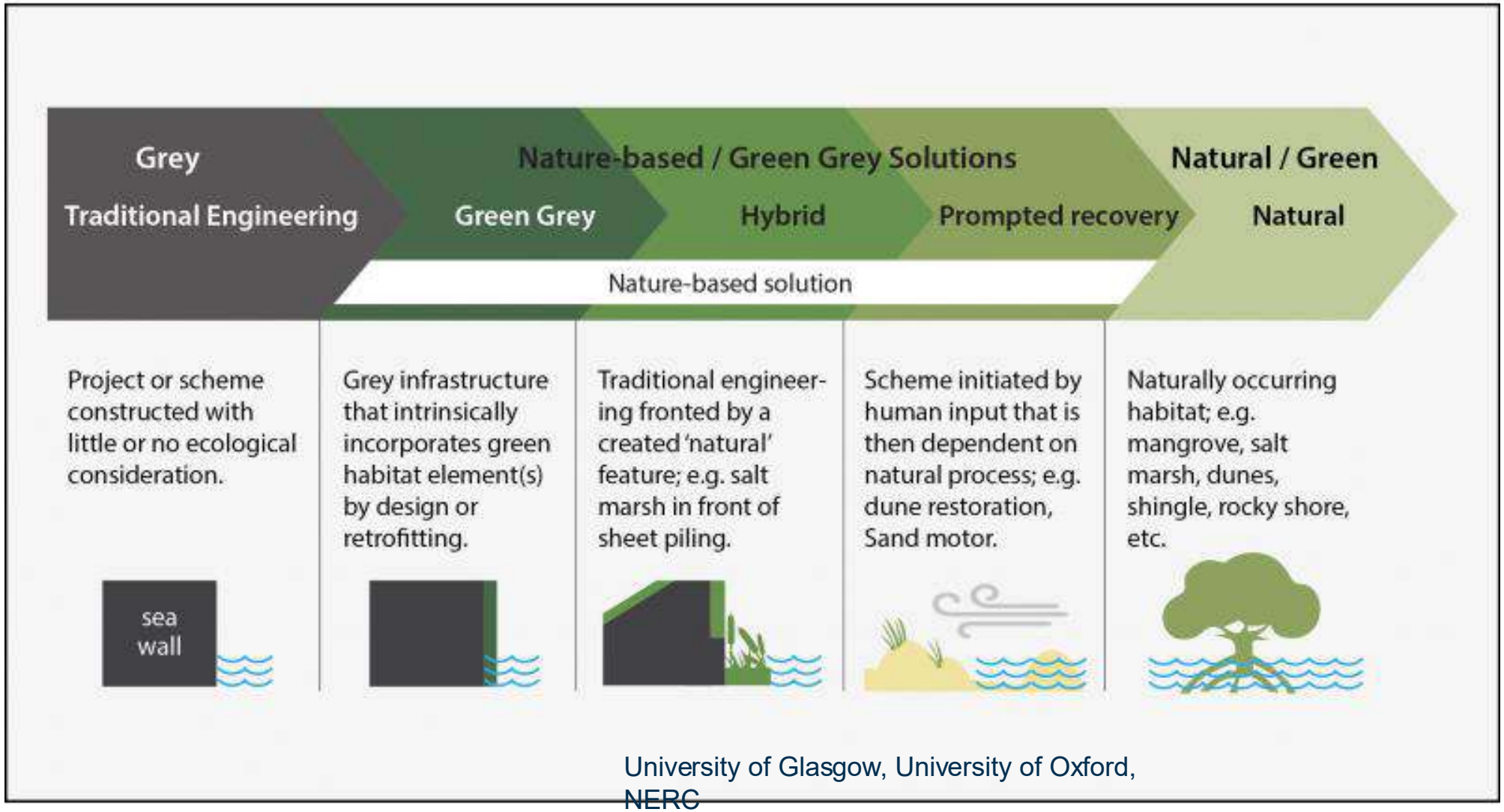

(1) Patibunia
"Direct human impacts are responsible for over 60% of mangrove loss"
Open ocean
Incoming cyclones
Former toe of the dyke
Big tidal flat, **used to be mangrove forest**, now eroding
Extreme length of dykes to maintain, hard to

(3) Atapur

- 300m bank erosion in 37 years
- **Foreshore is not stable**: heavy erosion of the toe of existing embankments



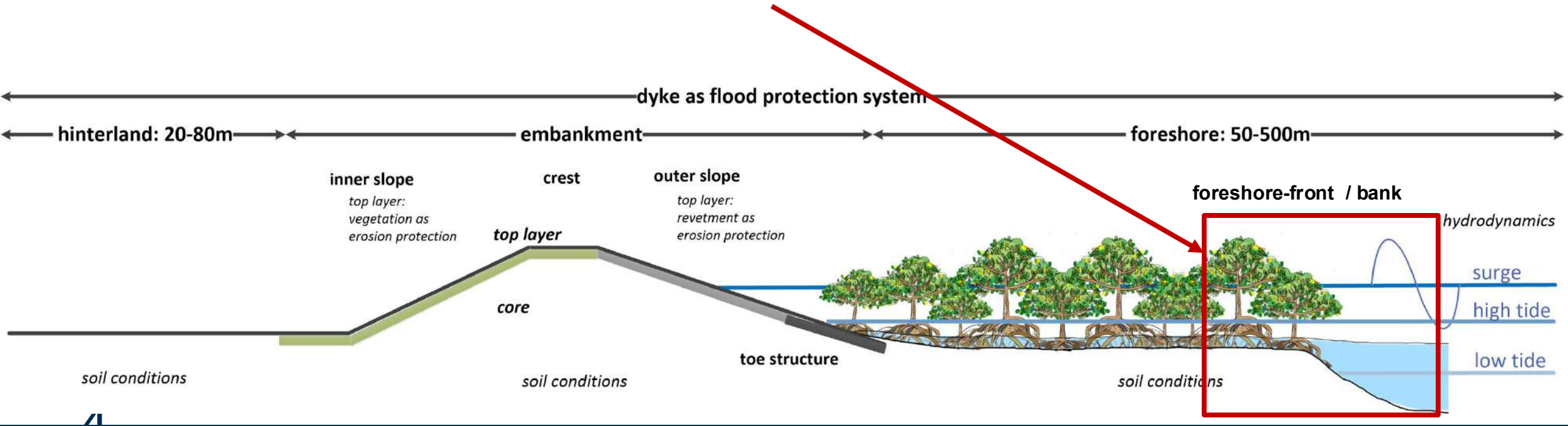
Solutions can be grey, green and hybrid



University of Glasgow, University of Oxford, NERC

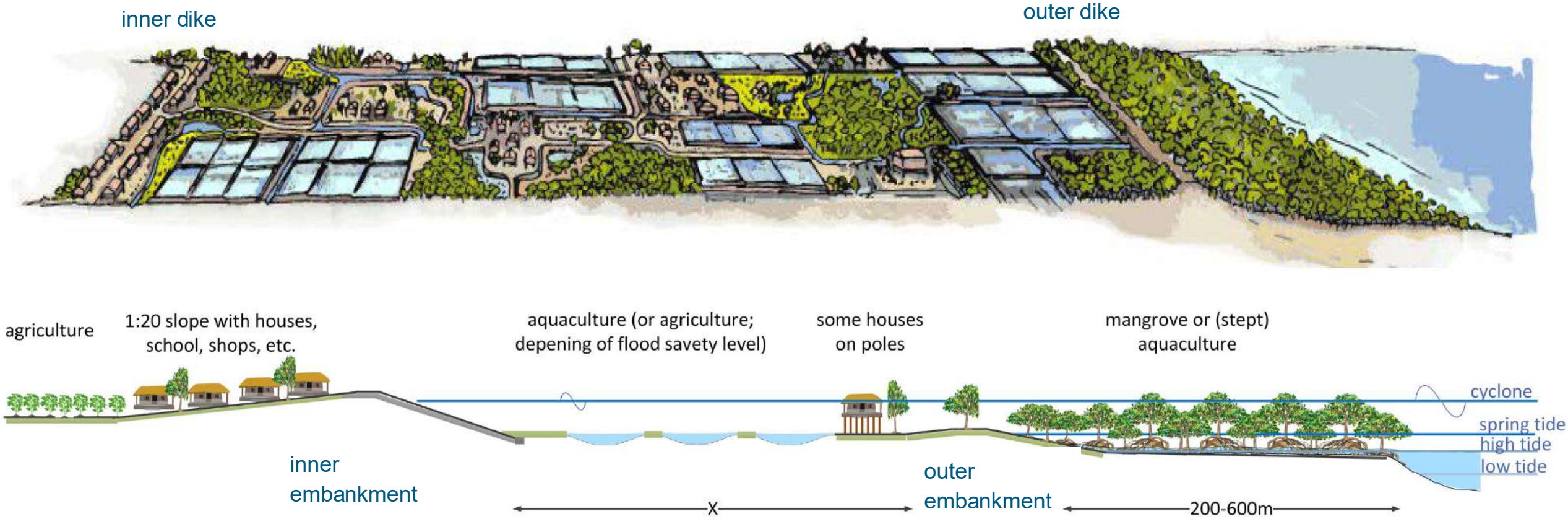
A dyke as a flood protection system

- Dyke is part of a larger flood protection system:
  - Warning system, shelters, drainage, dykes, houses on poles
- Stability of dyke depends on the soil in front, in, under and behind it
- Early indication for problems in flood protection system, signal to take action



Required land requires rethinking solutions

How can the land be used in a different way? In such way that livelihood and flood safety, and therefore



Key techical lessons learned for pilot sites

1. Sediment extraction is observed in many places (coastal zone)

2. Dike repair/construction is not feasible without a stable foreshore

- Muddy/estuarine: muddy foreshore with mangroves
- Sandy/coastal: sandy beach profile and/or beach nourishment

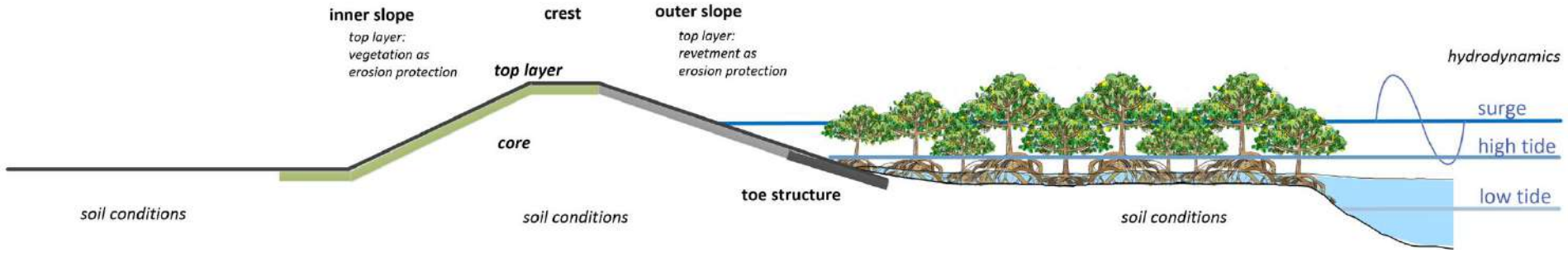
3. Required structures vary per location within the system

- E.g. STUs for muddy environments to enhance mud sedimentation
- E.g. wave reduction structures to minimise beach erosion at the coast

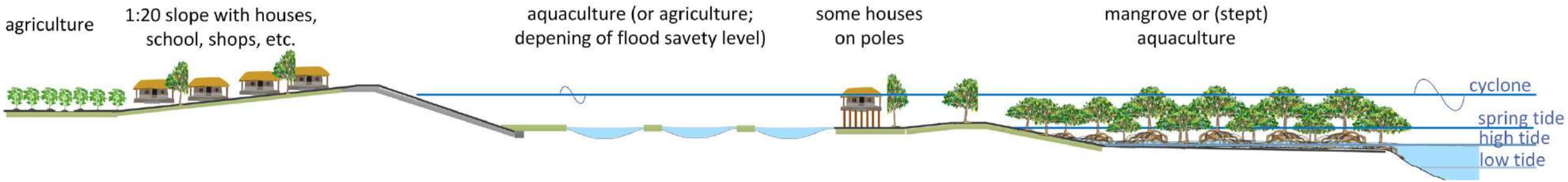
jasper.leuven@haskoning.com

Key planning lessons learned

1. **Green solutions** provide a better long-term solution



2. Need for a more **holistic, flexible, adaptive and pro-active solution**:
   - Redistribution of land and land-use
   - Rethinking land use and livelihoods



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Coffee break

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Netherlands

NWP | Netherlands Water Partnership

Mirjam van Buchem

Netherlands Water Partnership (NWP)

Netherlands

IFAT India

14 – 16 October, Mumbai

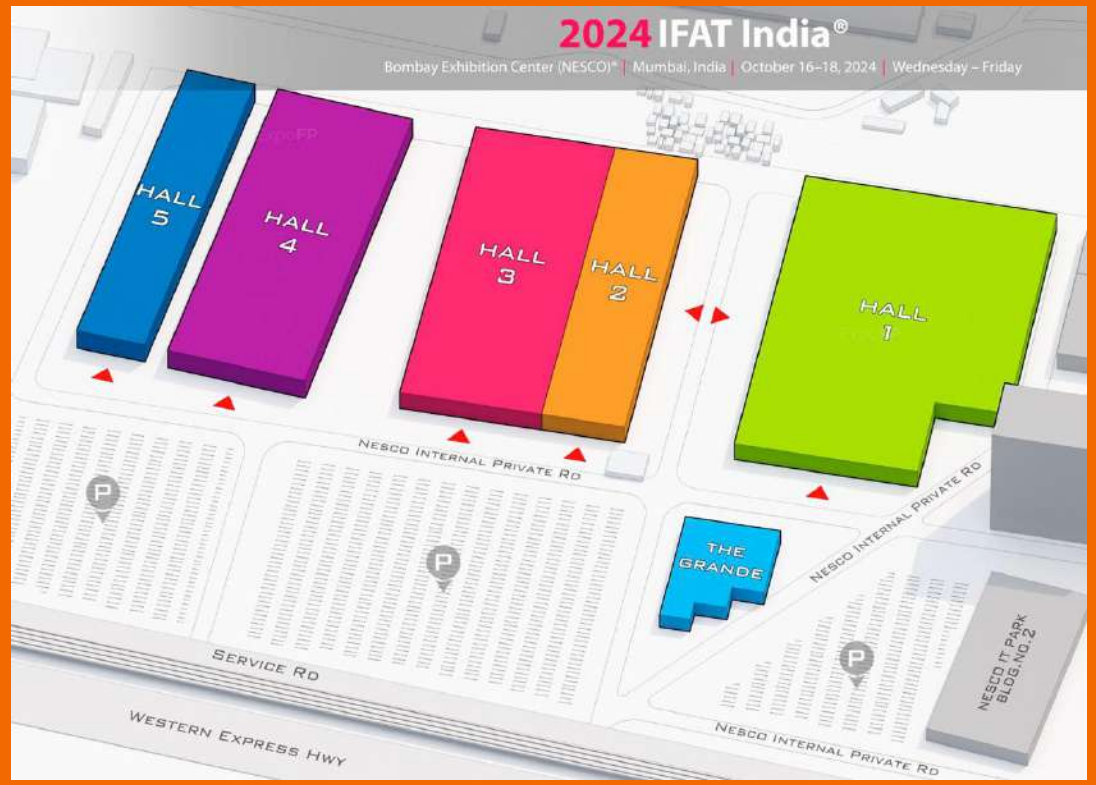
Bombay Exhibition Centre (BEC)

Introduction

12th editon of IFAT India

India's premier trade fair
for **environmental technologies**
covering *water, sewage, solid waste, recycling, waste-to-energy, air pollution*, and more

2024



Country pavilions 2024

Canada | Germany | Norway | South Korea | The Netherlands | Switzerland

IFAT India was held across three halls:

- **Hall 1** – Approx. 20,000 sqm
- **Hall 2** – Approx. 9,000 sqm
- **Hall 3** – Approx. 9,000 sqm

Netherlands

2024

Key highlights of 2024

488+
Exhibitors from 25 countries

17,184+
Visitors from 31 countries

300+
High quality speakers

850+
Buyer – Seller meetings

15,000+
Products on display

4 Day
Conference more than 40 knowledge-sharing sessions

2025

Joint effort:

- Ministry of Infrastructure and water management
- Netherlands Enterprise Agency (RVO)
- Netherlands Water Partnership (NWP) – Coordination partner
- Netherlands Embassy of the Kingdom of the NL in New Delhi
- Netherlands Consulate in Mumbai
- Valuing Blue

2025

Hall 1 – Approx. 20,000 sqm
Hall 2 – Approx. 9,000 sqm
Hall 6 – Approx. 15,500 sqm

This expansion of 6,500 sqm is a response to growing demand and increased participation.

Australia, Germany, Norway, Canada, Korea, Switzerland, Netherlands, and others to confirm

Location
TBD
48 – 60M2

Netherlands

Visitor Profile:

Municipal authorities & ULBs
EPC contractors
Plant operators
Industrial users (textile, pharma, food & beverage, etc.)
Environmental consultants
Distributors & dealers
Policymakers and NGOs

Programme

Tuesday 14th of October

10:00 – 18:00	Opening hours

Wednesday 15th of October

10:00 – 18:00	Opening hours
15:00 – 16:00	NL Panel meeting
17:00 – 18:00	Network reception

Thursday 16th of October

10:00 – 17:00	Opening hours
PM	Departures to Delhi for CoE

Join us!

You have your own spot on the NL Pavilion

Networking reception and networking programme

Visibility on Stage

Only 8 – 10 spots available

Registration via NWP website/ events/ Ifat India

Cost €2500* per organization (3 pers. Max)

Netherlands

Please e-mail me at m.vanbuchem@nwp.com

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follow us

PARTNERS FOR WATER
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MARKT ENTRY AND PROJECT OPPORTUNITIES ON WATERTECHNOLOGY IN INDIA

7 JULI 2025 – INDIA WATER PLATFORM

STEVEN VAN ROSSUM

Rijksdienst voor Ondernemend Nederland

PARTNERS FOR WATER
CO-CREATING IMPACT

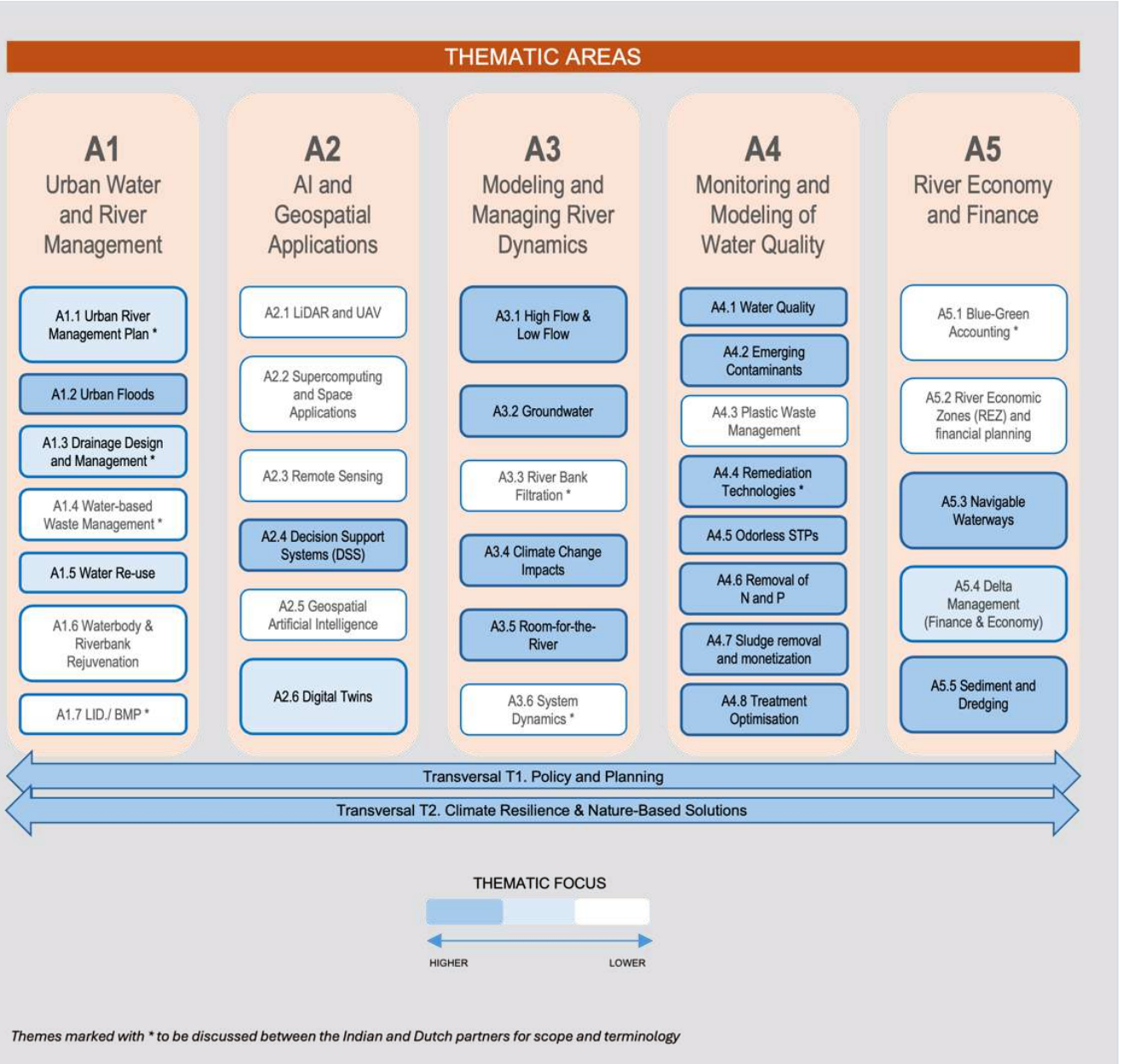
valuing blue
create impact with water

Introduction

India

- Fast growing Water technology market
- Investments Watertech 2024: > €11 billion
- Annual Capex growth Watertech 15%
- High level of education
- Need and will to innovate and make progress
- Invest International– Netherlands foreign policy
- Good relation with National Mission Clean Ganga

Themes



*Themes marked with * to be discussed between the Indian and Dutch partners for scope and terminology*

Way forward

Agenda - Concept

- Visit IFAT – 14-16 October
- Visit Delhi 17e October - tentative
  - Center of Excellence – Exposition of techniques
  - Visit Waste Water treatment Facility
  - Discuss challenges and solutions: NMCG & Companies
- Identify Possible Pilot projects – NMCG & Companies
- Financing of Pilot projects – Invest International?
- Start Pilot projects
- Evaluate Pilot projects
- To the market!

Next Steps

- Express interest by companies or consortia of companies -> Watertech -> Steven (Coördination)
- Participation in IFAT? -> NWP
- Preparatory session with companies early September
- Presentation of market scan
- Go or No Go
- Companies provide information and display material for Center of Excellence
- Visit from 14/16 to 17 October


CHINA
Yarlung Zangbo (Tsangpo)
Lhasa
NEPAL
Kathmandu
BHUTAN
Subansiri
Brahmaputra
Agra
Yamuna
Ganges
Lucknow
Ghaghra
Kanpur
Ganges
Allahabad
Varanasi
Patna
Farakka
Son
Damodar
Bhopal
Kolkata
Padma
Meghna
Mouths of the Ganges
MYANM
NDIA
Bay of Bengal

Questions

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CO-CREATING IMPACT

Invest International

Invest International at a glance.

India Water Platform Meeting

7 July 2025

The Hague

Invest International

What we do

We believe Dutch innovation and expertise can provide much-needed solutions for global challenges.

We focus on 3 things:

1. **Finance** Dutch businesses that want to do business abroad (and resolve market failure).

2. Accelerate Dutch innovation with **project development**.

3. Invest in **public infrastructure projects** in emerging markets.

We invest in impact

Our take on impact investment is that it works best when everyone profits.

We focus on financing businesses and projects, with a Dutch link, that have solid economic potential, create decent jobs (SDG 8), combat climate change (SDG 13) and support the journey to a more sustainable world.

Our goal for impact is threefold

Support sustainable transitions

Support impactful businesses and projects that help industries and economies transition to more sustainable processes.

Job creation

Create jobs, both at home and abroad.

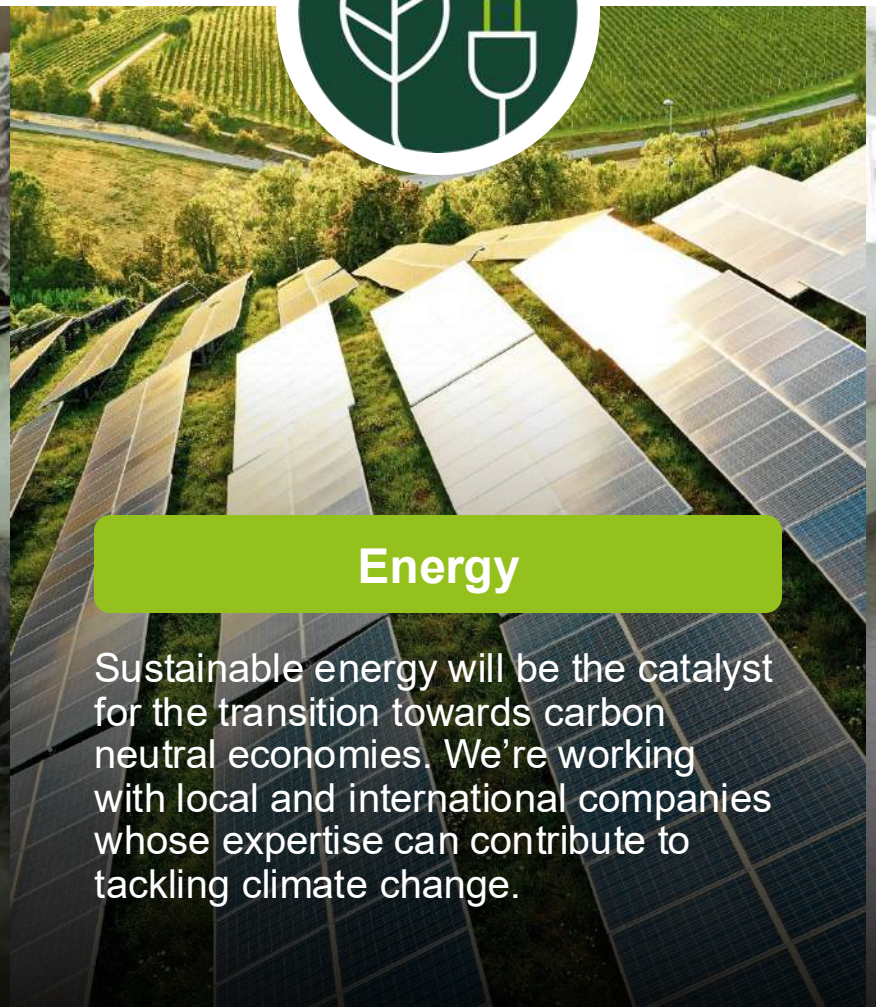
Earning capacity Dutch economy

Securing the future earning capacity of the Dutch economy.

Five sectors

Agri-food

We support the development of more climate resilient and nature-inclusive agricultural systems that meet the needs of today and those of future generations.



Energy

Sustainable energy will be the catalyst for the transition towards carbon neutral economies. We're working with local and international companies whose expertise can contribute to tackling climate change.

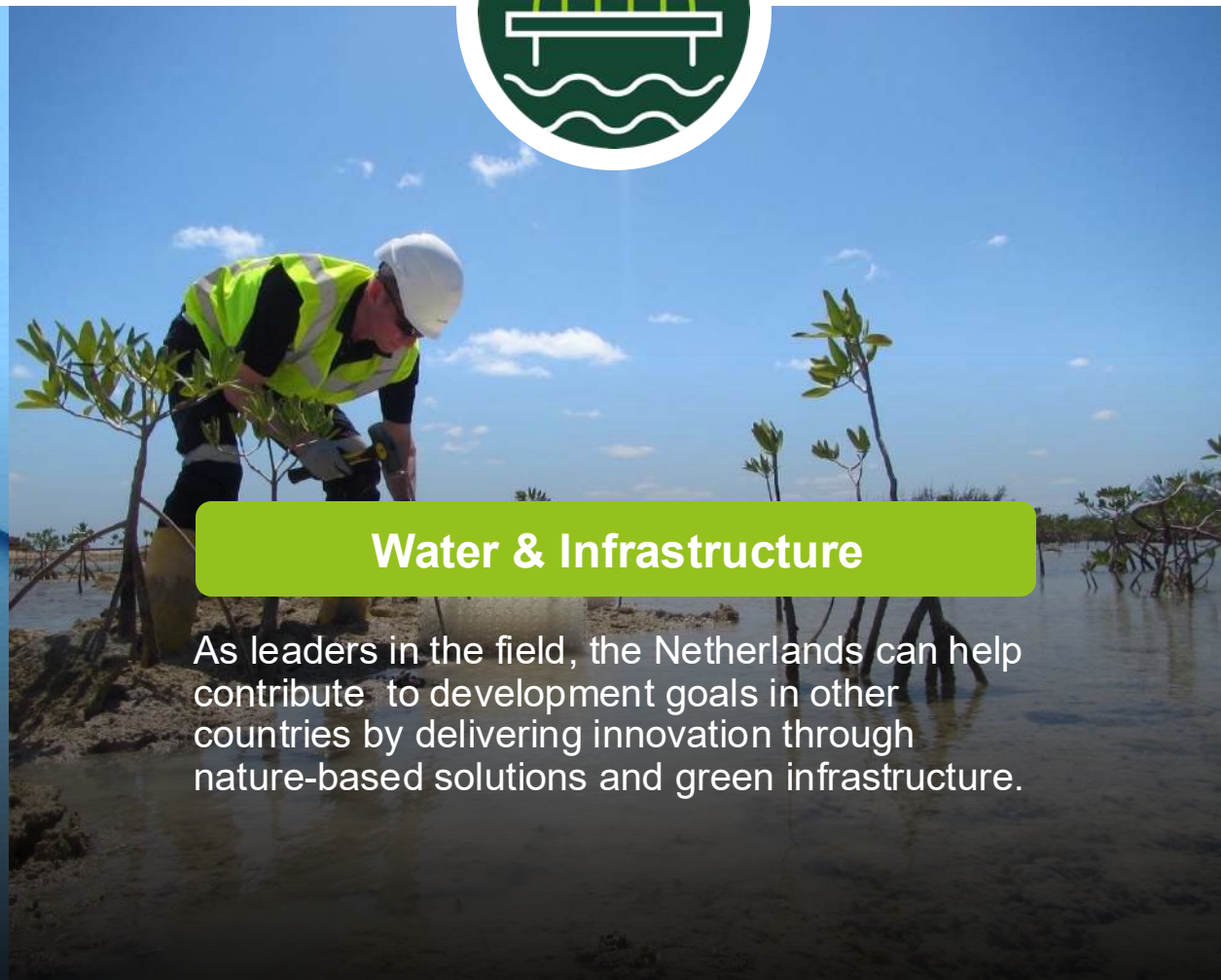
Healthcare

We want to lead the drive towards accessible, affordable and quality healthcare for everyone. Dutch specialist healthcare companies can make a difference in everything from primary healthcare to prevention and access to medicines.

Five sectors

Manufacturing

Innovative expertise can help develop circular economies to replace linear manufacturing that heavily impacts climate and the availability of resources.



Water & Infrastructure

As leaders in the field, the Netherlands can help contribute to development goals in other countries by delivering innovation through nature-based solutions and green infrastructure.

Our solutions

Governments of Partner Countries

Looking for green and sustainable impact financing

- We offer grant finance and technical assistance.
- We focus on sustainable infrastructure that contributes to economic development, jobs and climate action.

Private sector clients

Start-ups

For start-ups we go the extra mile to engineer tailor-made deals for worthwhile transactions.

SMEs

We work with SMEs to realise their ambitions for overseas activities. Our network of investment partnerships provides tailor-made financial solutions, and our ESG consultancy helps to build more sustainable futures, both here and abroad.

Corporates

We support corporates with project development and by co-designing tailor-made international financing arrangements.

Invest International Public

Invest International

Public infrastructure development

We provide government-to-government funding for the implementation of public infrastructure projects.

Our goal is to speed up the implementation of high-impact, high-quality and sustainable long-term infra solutions.

Bring Dutch solutions to face global challenges

Develop-to-Build & DRIVE TA: Grant for project development

- Facilities leading to getting infrastructure projects ready to tender and increasing their quality
- Typical contract value between EUR 50k – 800k
- Focus on Full Feasibility Phase of project development

DRIVE: Grant for infrastructure implementation

- Typical contract value: between EUR 20 -100 million
- Grant size depending on OECD/DAC guidelines and viability gap
    - Up to max. 35% (India) of eligible project costs
- Residual 65% of eligible project costs through other sustainable financing source:
  – loan from Invest International (100% concessional financing possible)
  – IFI or commercial loan
  – own budget of partner government
- Project needs to be additional to the market (e.g. not commercially viable)

Project appraisal: general requirements

Ownership	Public infrastructure, priority for State and Federal Government
Impact	SDG 8 (decent work), SDG 13 (climate change) and other relevant SDG's
Additionnality	Commercially non-viable
Viability of the project (defined during the feasibility study)	Financial, economic, technical, institutional regulatory viability and Value for Money
ESG (defined during the ESIA)	Complies with IFC performance standards and local regulations
Financing plan	Max. 35% Grant + sustainable and secured residual financing
Procurement	1) Unsolicited proposal and direct award (independent price verification) 2) International call for tenders (OECD, based on quality and cost, sustainability requirements) 3) Institutional, regulatory and legal compliance
Contract	FIDIC yellow book/money (design, construction (and operation))

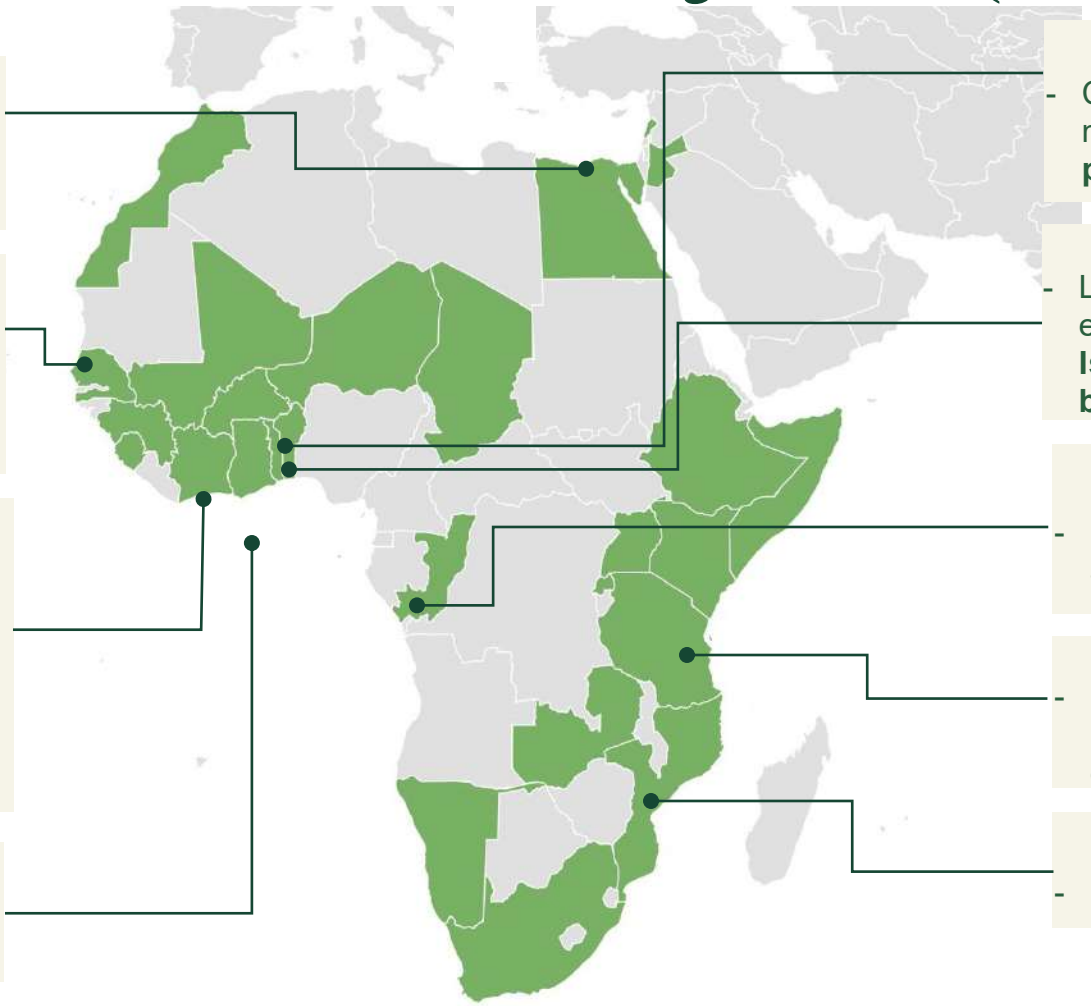
Public Infrastructure Projects (2024)*

Egypt:
- Northern Nile Delta Coast: **Erosion and flood protection**. Sand nourishment promising. Existing gray structures face problems

Senegal:
- Saint Louis coastal protection: **Erosion and flood protection Sand nourishment with hybrid elements**
- Ultrasound algae control

Ivory Coast:
- Port Bouet: **Erosion and flood protection Sand nourishment possibly with hybrid elements**
- Baie de Cocody: **Improvement of possible usage, water quality**, (urban) landscape of bay in middle of Abidjan with technology and NBS.

Ghana:
- **Coastal protection and flood controls** with NbS elements



Togo:
- Coastal protection: Monitoring plan and monitoring itself of **coastal protection projects containing NBS elements**.

Benin:
- Lac Nokoue: Combination of different NBS elements: **restoring ecosystems, making Islands with Mangroves, restoring lake banks**

Democratic Republic of Congo:
- Muanda: Erosion protection protecting road and mangrove ecosystem along the coast.

Tanzania:
- Msimbazi: **River flood and erosion protection** and river training with NBS elements.

Mozambique:
- Beira: **Flood and coastal protection**

* This maps shows the countries where Invest International Public Programmes B.V. is engaged and the total grant estimated/committed to (co)fund the development and implementation of public infrastructure projects

Nature Based Solutions

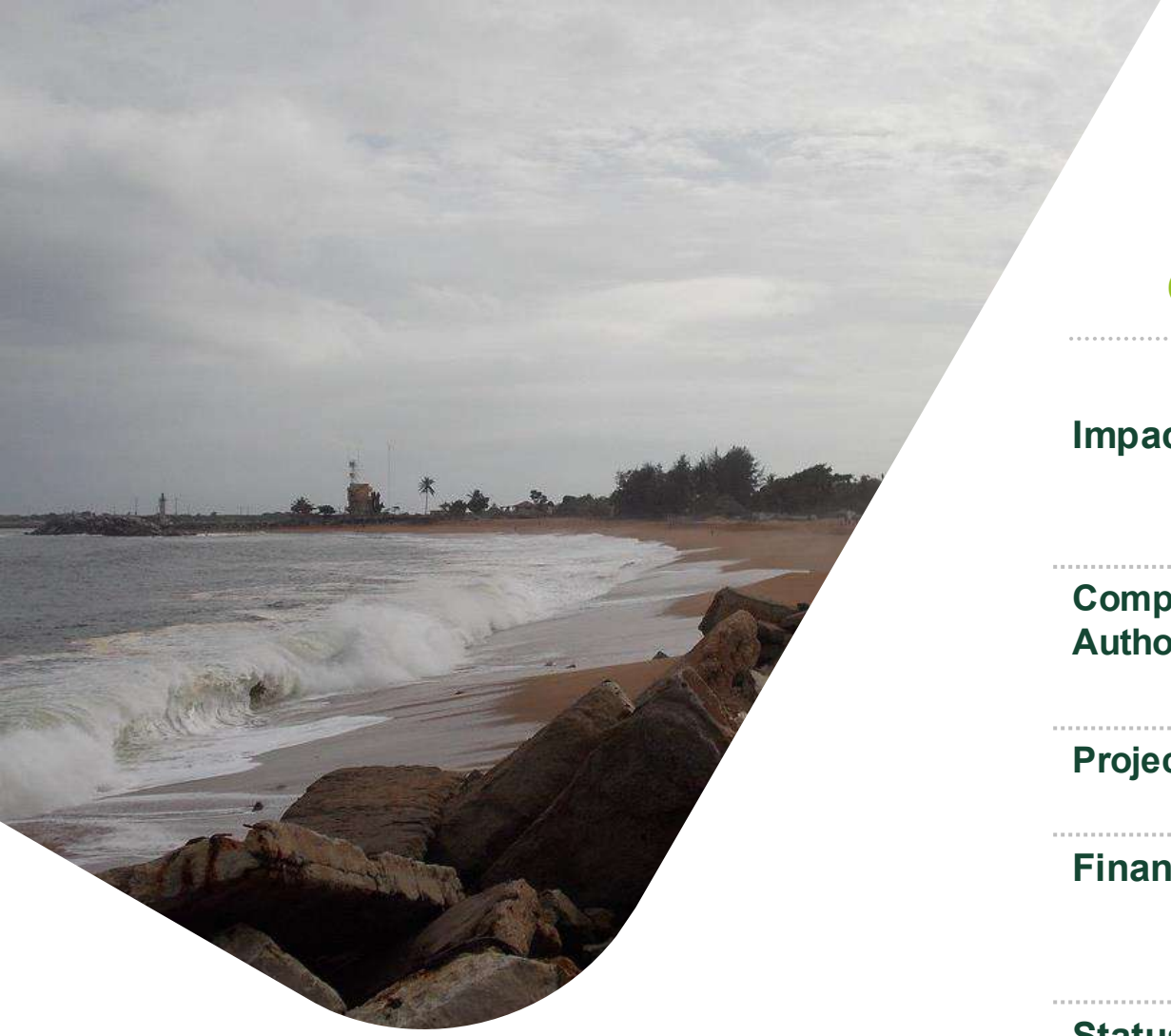
Definition and added value

- IUCN definition: *Nature-based Solutions* ***address societal challenges*** *through actions to protect, sustainably manage, and restore natural and modified ecosystems, benefiting people and nature at the same time*
- Cost-effective approach to support climate-resilient infrastructure
- Maximise net-gains over the lifespan of the public assets
- Diversify economic activities
- Contribute to achieving SDGs

Beira Coastal Protection

Mozambique

Impact	Development, construction, equipping and subsequent use and maintenance of a coastal flood and erosion protection system in Beira, Mozambique.
Competent Authority	Administração de Infra-Estruturas de Águas e Saneamento (AIAS)
Project cost	EUR 60 mln
Financing	50% Invest International 25% The World Bank 25% KfW
Status	Procurement of works is ongoing



Protection Côtière Port Bouet – Grand Bassam (WACA-ResIP)

Côte d'Ivoire

Impact	The proposed adaptation solution is based on both hard and soft measures, to enable long-term sustainability for the protection of key infrastructures.
Competant Authority	Ministère de l'Environnement, du Développement Durable et de la Transition Écologique (MINEDDTE).
Project Cost	EUR 55-65 mln (estimated)
Financing	100% grant – feasibility study 35 - 50% grant IIPP– Implementation 65 – 50 % loan – Implementation
Status	L'appel d'offres pour l'étude de faisabilité a été lancé. La réalisation est prévue en 2025.

8 TRAVAIL DÉCENT ET CROISSANCE ÉCONOMIQUE

13 MESURES RELATIVES À LA LUTTE CONTRE LES CHANGEMENTS CLIMATIQUES

Invest International Capital

Invest International

Guiding Principles

Clear Dutch link

Dutch content: ≥20% of financing is used for sourcing Dutch products/services; or

Dutch shareholding: ≥25% of client shares are owned by Dutch company; or

Dutch interest: Future Dutch earning capacity.

Additionality

Higher risk appetite longer tenors, early stage, small tickets, ESG support, etc.

Act as a Market Economy Operator (MEO).

State Aid Compliant

Every financing must comply with the State Aid rules.

IESG & Good Governance

Mitigate negative ESG impacts and encourage positive ESG impacts, according to IFC performance standards.

Customer & Solution Oriented

Offering an integrated and harmonized financing solution with multiple products under one roof to serve Dutch companies.

Connecting role in the landscape of international business and development, by sharing leads for import, export and investments abroad.

Other principles

Sufficient rate of return

According to internal Risk appetite

Focus on developing countries

Structured Finance Products

Investment Loans

Loans to expand the business abroad. For example, to set up or expand a processing facility for local or export markets, or to import goods from a long-term supplier abroad when a business needs to bridge the gap between purchasing goods and their delivery. This product is for private clients.

- Senior Debt
- Junior Debt and Mezzanine Finance (in specific cases)

Export finance

Finance for exporting Dutch capital goods or services abroad, especially to emerging markets and developing countries, through loans including working capital. This product is for both public and private clients.

- Non-ECA covered Buyer's Credits
- ECA covered Buyer's Credits
- PRI covered Buyer's Credits
- Supplier's Credit Solutions via OHV

Project Finance

Financing for a project in one of the focus sectors. These projects rely heavily on projected cash flow for repayment. Sponsor support (recourse) will be assessed on a case-by-case basis. This may be combined with insurance from Atradius Dutch State Business.

- ECA covered Project Finance
- Non-ECA covered Project Finance
- Public Private Partnerships

CASE STUDY

Five bridges in Guinea

Guinea I Water & Infra I Sovereign
Solution: ECA-covered Buyer's Credit

Transaction

- Invest International is providing 100% financing for the construction of five bridges in Conakry and Coyah in the Republic of Guinea, through both a DRIVE grant and a loan.
- A loan of EUR 35 mln was extended to finance the 50% of the export contract and 50% of the Atradius premium. This has recently been topped up by an additional EUR 3 mln due to changes in the export contract.
- Concessional funding through a commercial bank was not possible.
- **The impact of this project is primarily social**: The new bridges will enable people to travel easier within the capital city and will attract businesses to these areas.

Atradius Dutch State Business

Ballast Nedam International Projects

CASE STUDY

Twelve bridges in Laos

Laos I Water & Infra I Sovereign
Solution: ECA-covered Buyer's Credit

Transaction

- The loan is used to finance the turn-key re-construction of 12 bridges on National Road 20, connecting the Provinces of Champasak and Salavan in Laos.
- A loan of EUR 15 mln was provided to finance the 55% of the export contract and some additional

- Concessional funding through a commercial bank was not possible.

- **Development of critical infrastructure.** The re-construction of the bridges will increase living standards of the population in the two provinces as it improves access to medical care, education, markets and tourist attractions

Atradius
Dutch State Business

Closing

Invest International

PARTNERS FOR WATER
CO-CREATING IMPACT

Government of the Netherlands

Water as Leverage

Water for Resilient Cities as Leverage Asia

AIIB Asian Infrastructure Investment Bank

FMO Finance for Development

Global Center on Adaptation

UN-Habitat For a Better Urban Future

WWF

PEGASYS Changing Lives Changing Worlds

Partners for Resilience Working together on disasters, climate, ecosystems

IsDB Islamic Development Bank

ADB

Green Climate Fund

The World Bank

Kingdom of The Netherlands Water Envoy

Netherlands Enterprise Agency

100 Resilient Cities

IABR

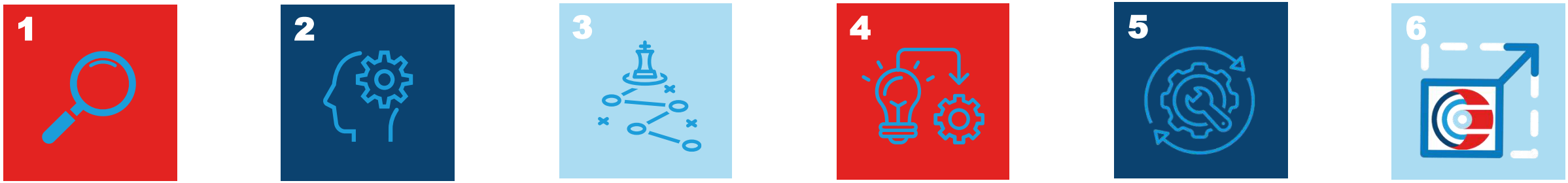
OECD

aw b

THE CONCEPT AND METHODOLOGY OF WATER AS LEVERAGE

Invest in the early phase of project development to ensure a more informed, effective and innovative implementation later on

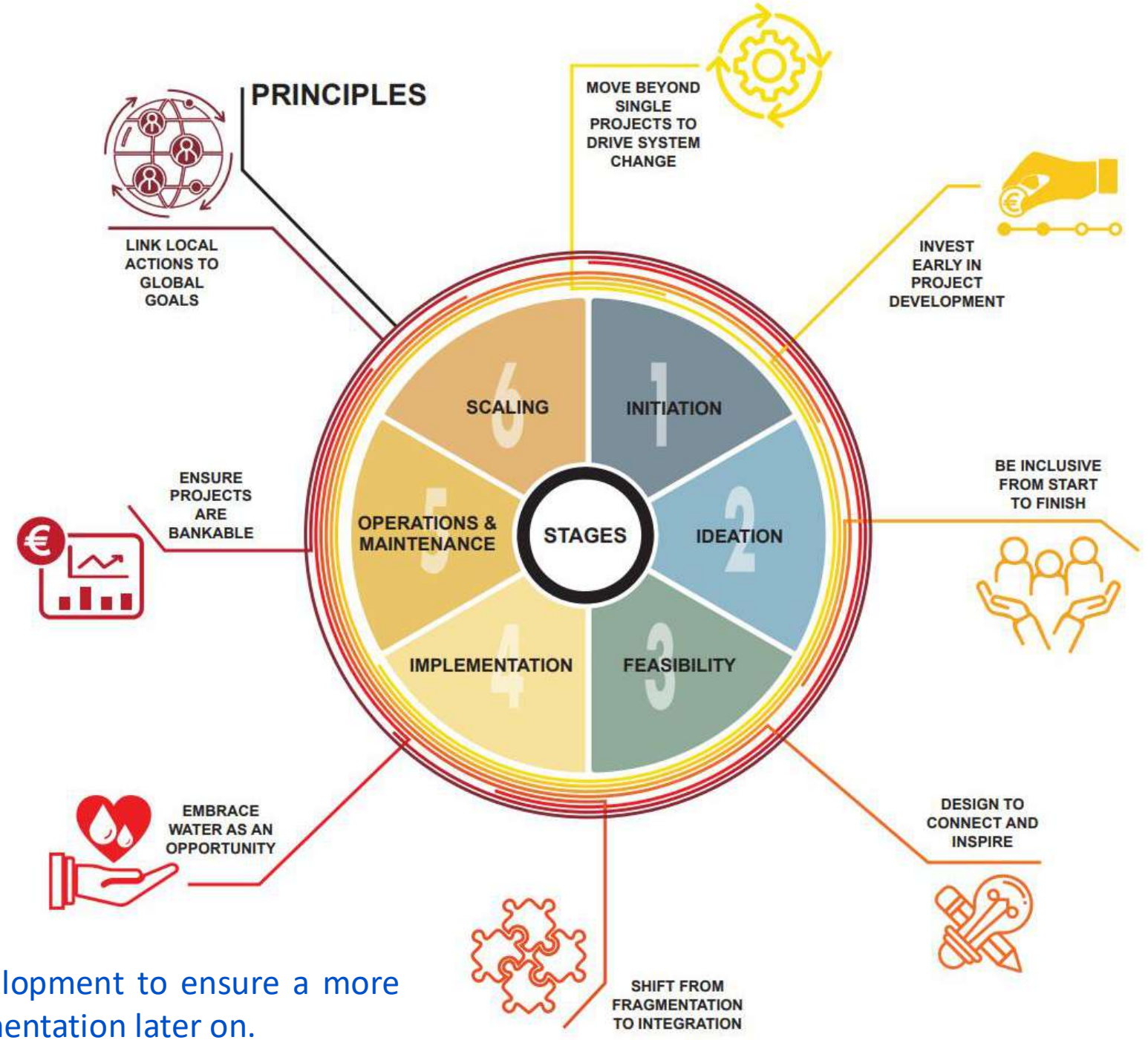
'invest millions to spend billions wisely'



! Lack of investments for the formulation phase of integral and innovative projects

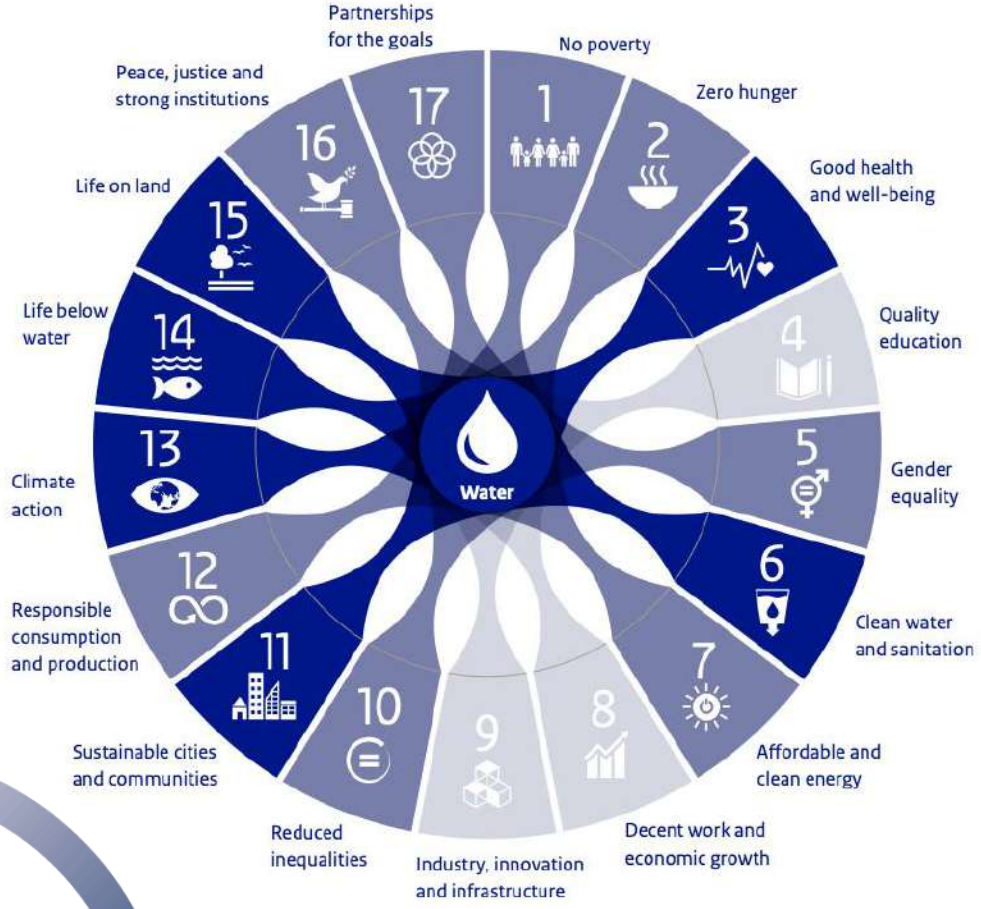
Government of the Netherlands

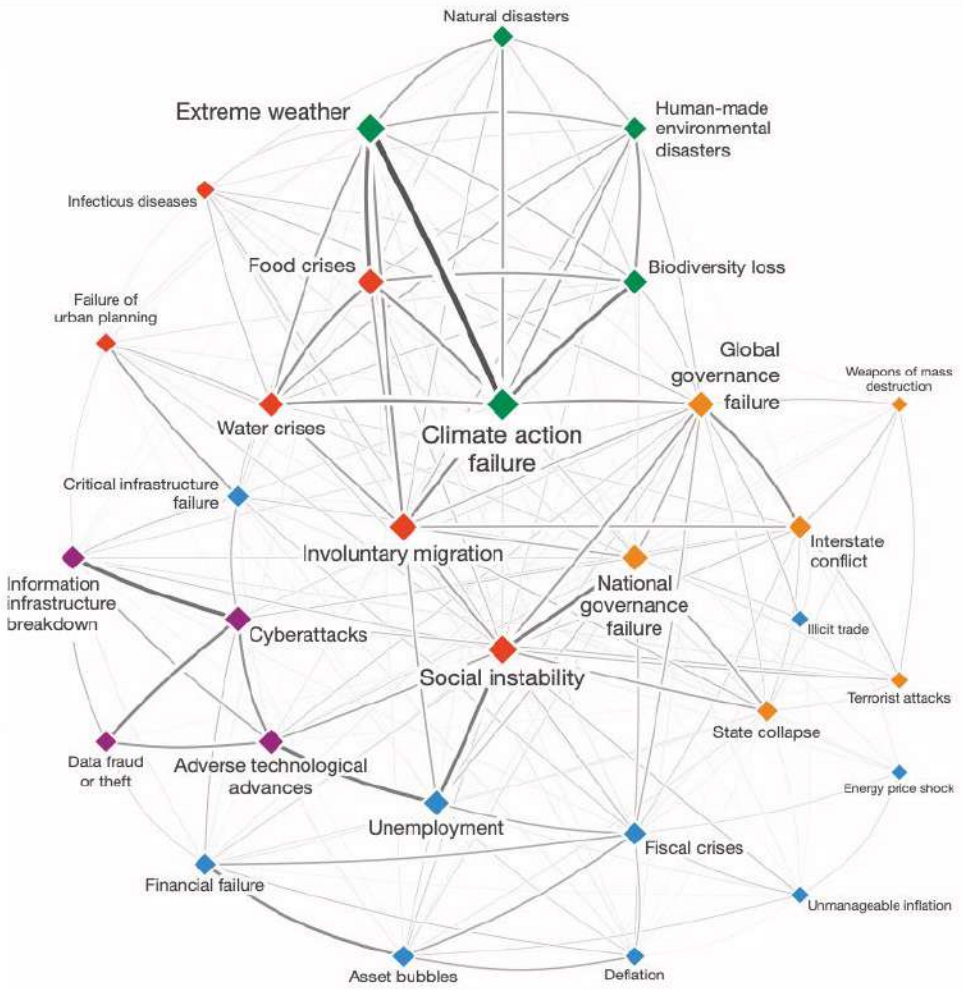
The WaL approach rethinks urban water climate resilience through **8 project lifecycle principles.**



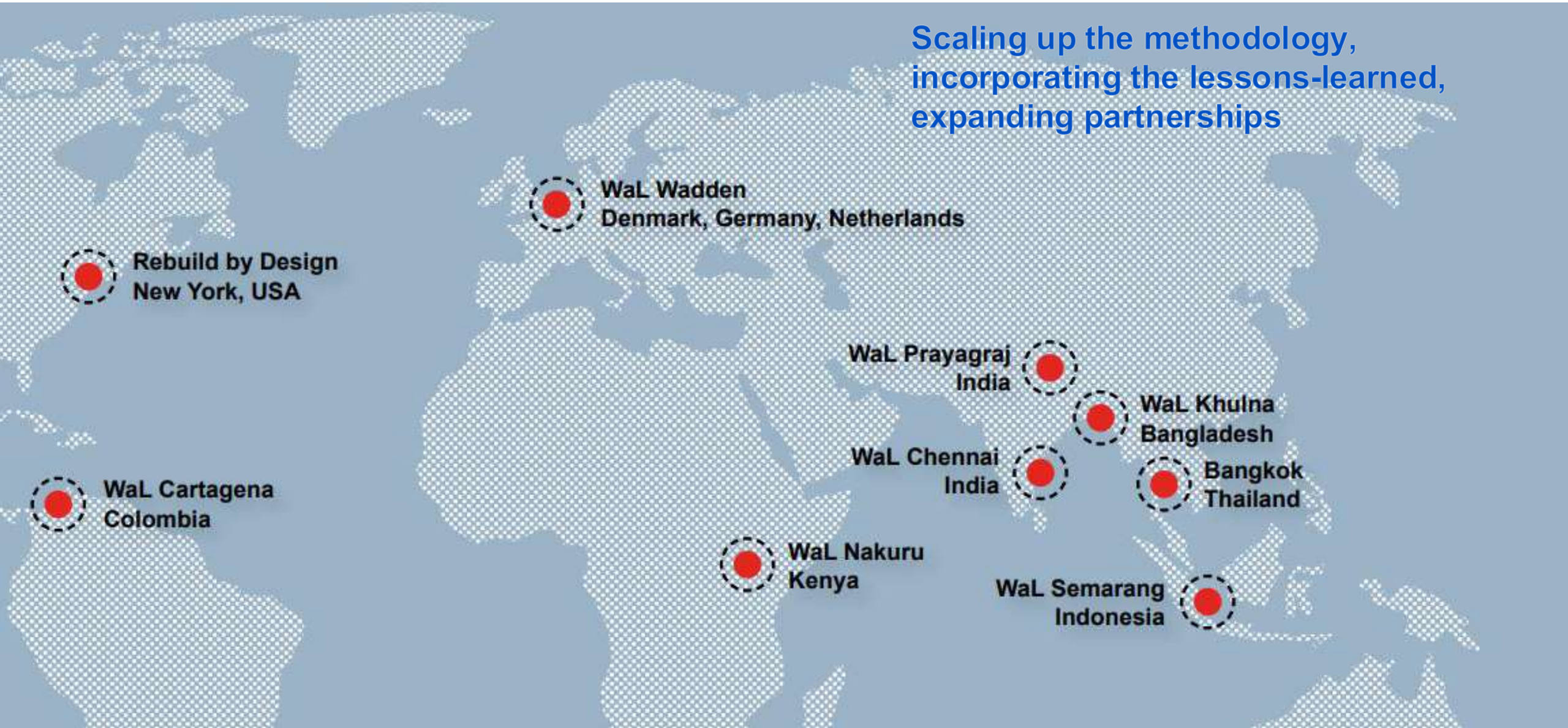
Invest in the early phase of project development to ensure a more informed, effective and innovative implementation later on.

WATER AS A *LEVER, CONNECTED TO ALL SDG's*



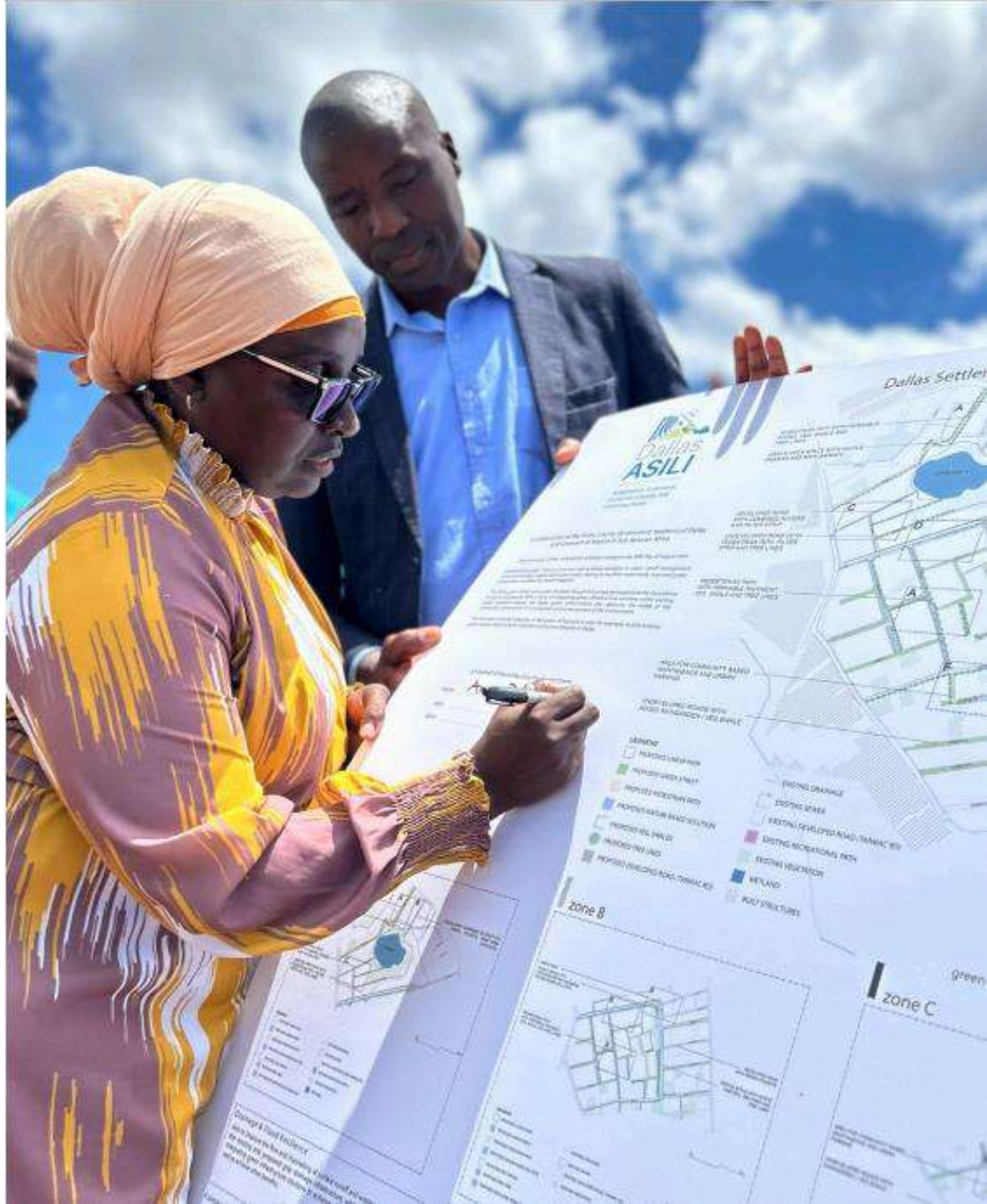


Global Wal Journey



Water as Leverage
For Resilient Cities

Building community and fostering mutual learning across different initiatives



Water as Leverage - Chennai City of 1000 Tanks

भारत सरकार
GOVERNMENT OF INDIA
सत्यमेव जयते

Government of the Netherlands

Water for as Resilient Cities Leverage Asia

UN HABITAT
FOR A BETTER URBAN FUTURE

Deltares

WATER AS LEVERAGE NAMAMI CLEAN GANGA

भारत सरकार
GOVERNMENT OF INDIA
सत्यमेव जयते

Government of the Netherlands

OOZE

Deltares

Water for as Resilient Cities Leverage Asia

UN HABITAT
FOR A BETTER URBAN FUTURE

Meeting of the 4th Joint Working Group Meeting under the Strategic Partnership on Water under Indo – Dutch Collaboration
18.2.2022

HYDROLOGICAL ANALYSIS AND PHYSICAL CHARACTERISTICS

- Hydrology
- Flood
- Hydro Geo Morphology
- Droughts: Too Little Water
- Climate change
- Ecosystem
- Surface water and Groundwater Availability
- Heat stress
- Water Quality and Pollution
- Summary and Recommendation

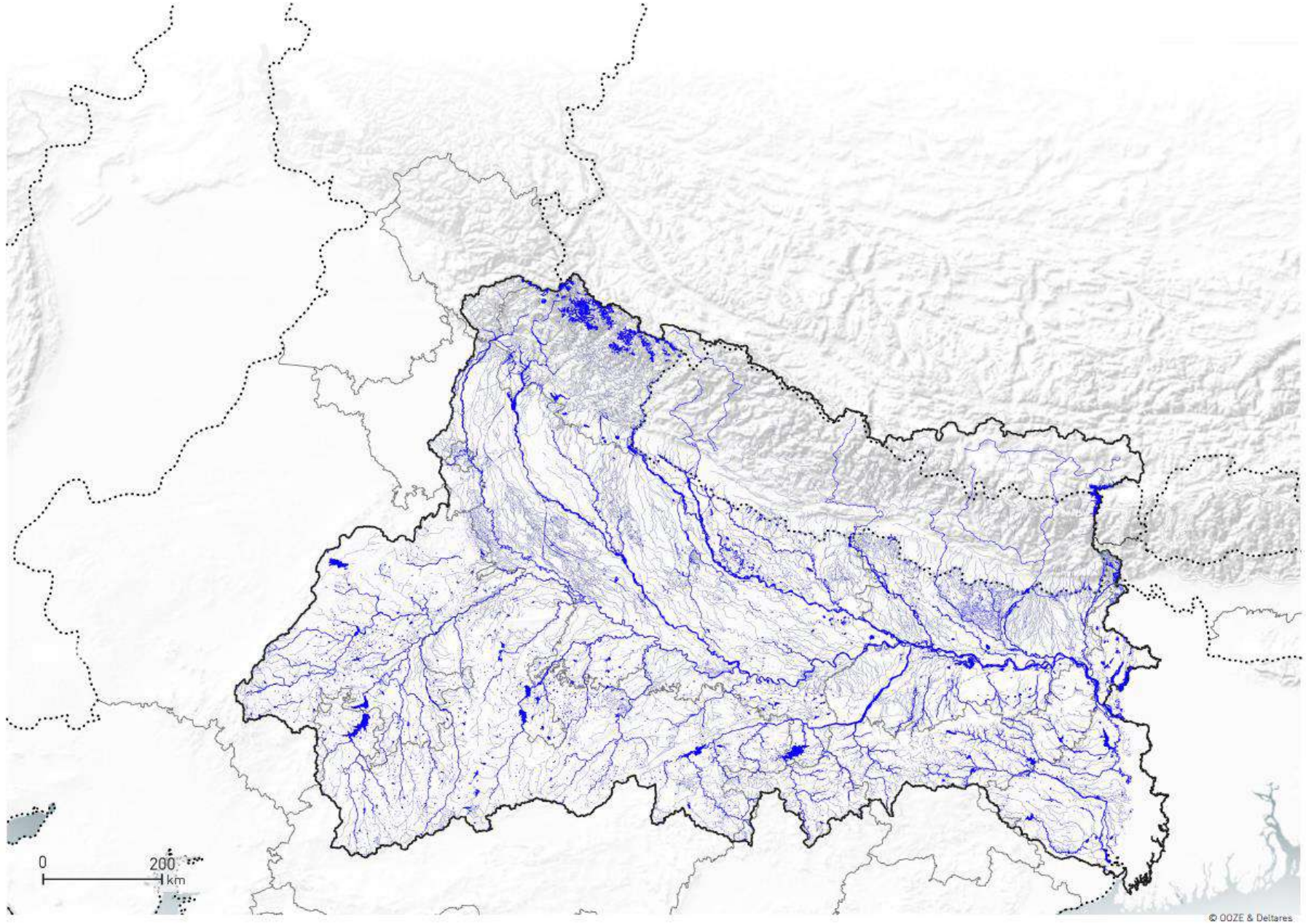
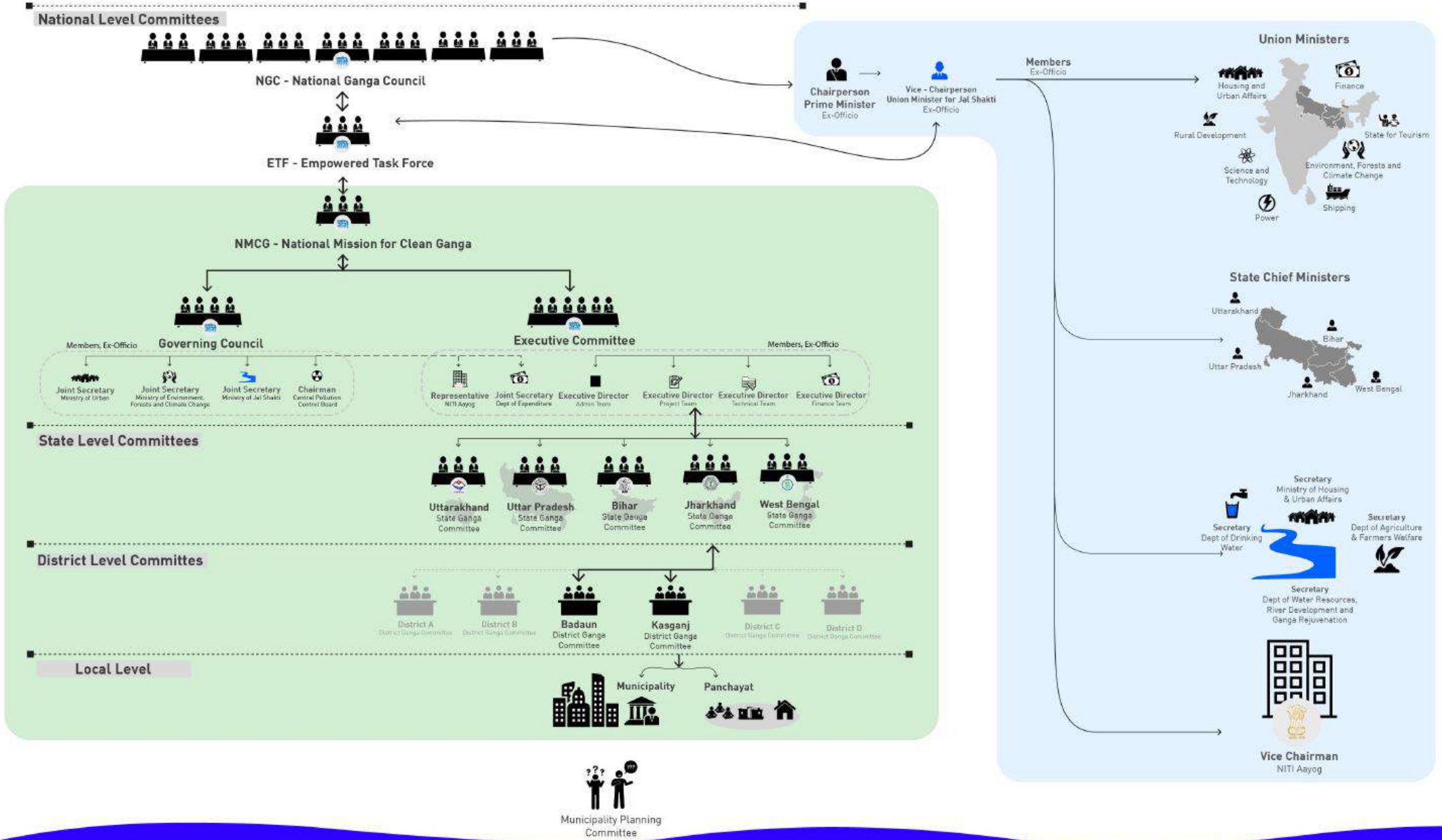


Figure 3: Ganga River Basin

GOVERNANCE STRUCTURES OF NAMAMI GANGA MISSION



CURRENT AND FUTURE TRENDS

POPULATION TRENDS/ URBANISATION TRENDS

- Greying of the basin
- Building into wetlands
- Rapid urbanisation

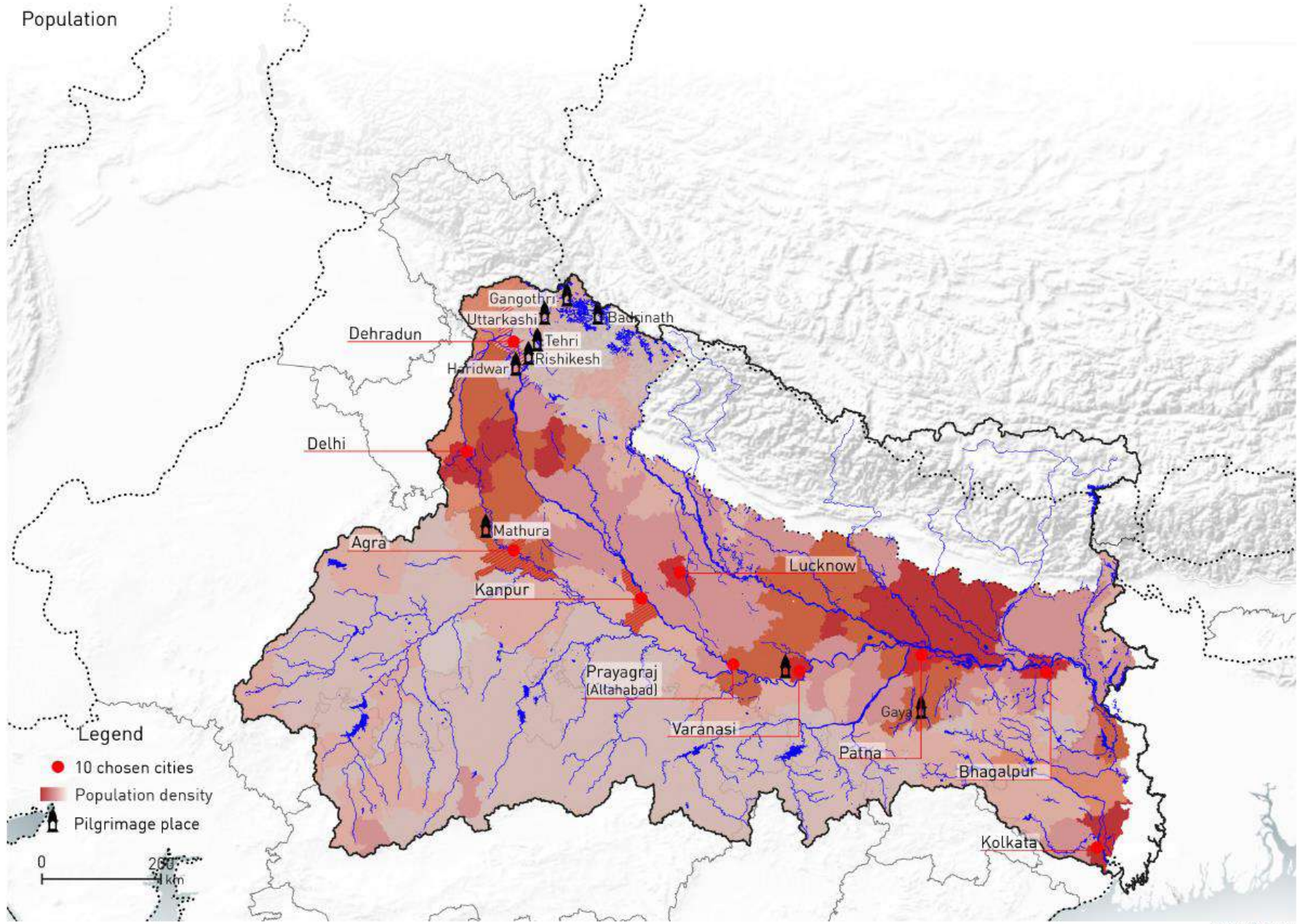


Figure 2: Population density across Districts in Ganga Basin (2016)

SELECTION OF TEN CITIES

Water for
as Resilient Cities
Leverage Asia

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OF INDIA
सत्यमेव जयते

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UN HABITAT
FOR A BETTER URBAN FUTURE

Deltares

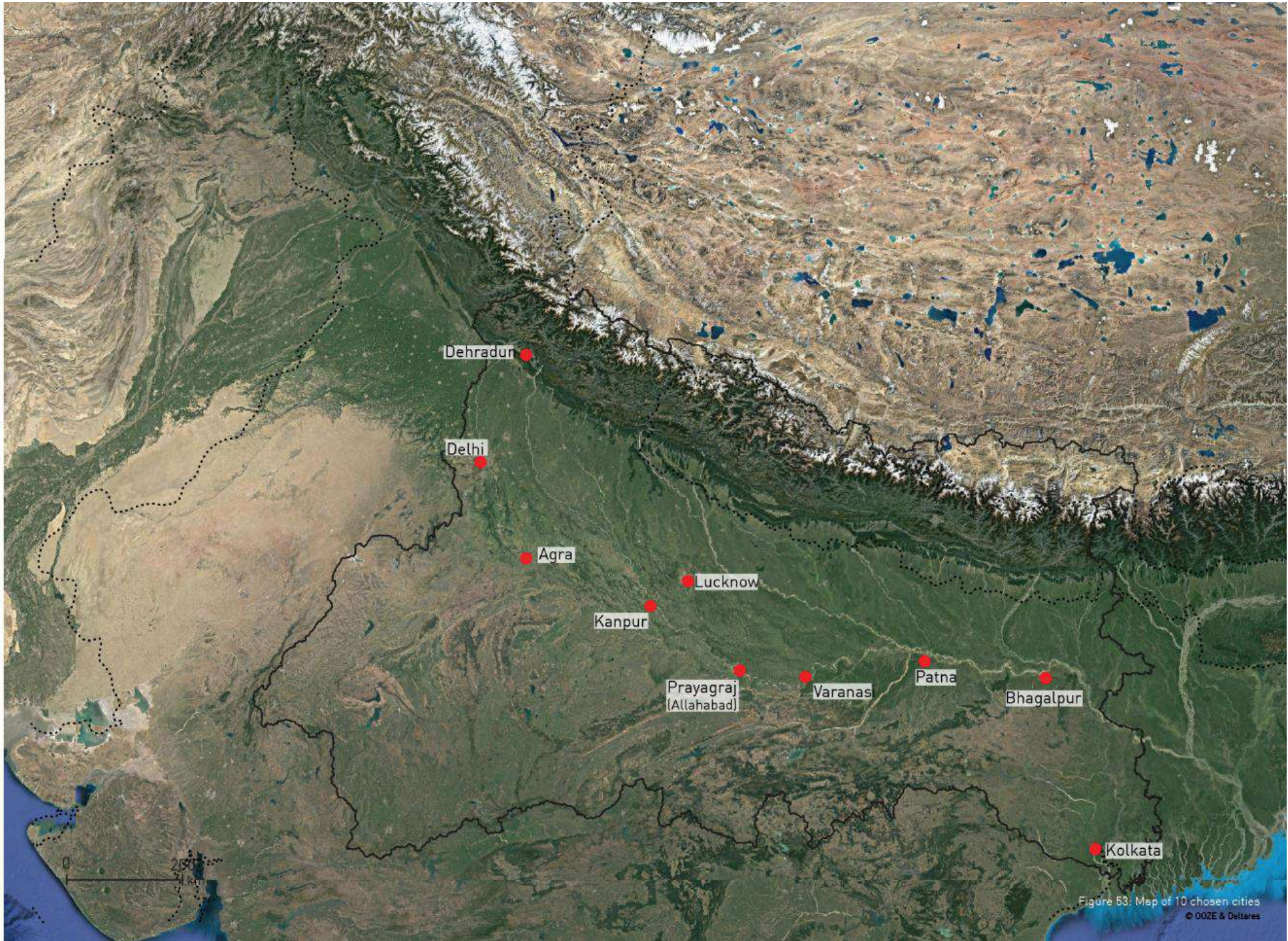
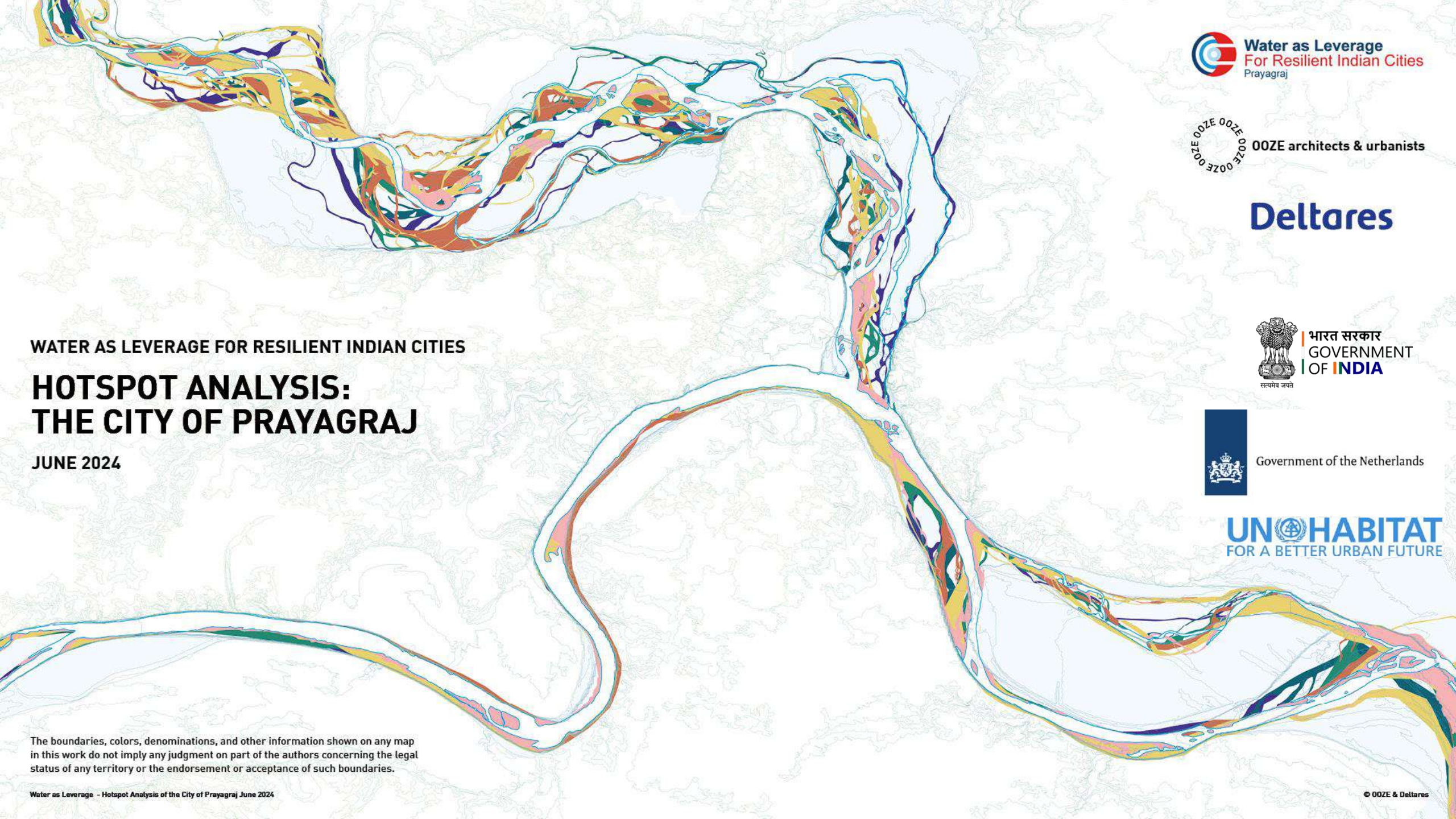


Figure 53: Map of 10 chosen cities
© OOZE & Deltares


नमामि गंगे
Kingdom of the Netherlands
Namami Gange – Water as Leverage
Training Workshop
under
Indo-Dutch Strategic Water Partnership
17-18 October 2022 | The Imperial, New Delhi
Water
as
Leverage



Water as Leverage
For Resilient Indian Cities
Prayagraj

00ZE architects & urbanists

Deltares

भारत सरकार
GOVERNMENT
OF INDIA
सत्यमेव जयते

Government of the Netherlands

UN HABITAT
FOR A BETTER URBAN FUTURE

WATER AS LEVERAGE FOR RESILIENT INDIAN CITIES

HOTSPOT ANALYSIS: THE CITY OF PRAYAGRAJ

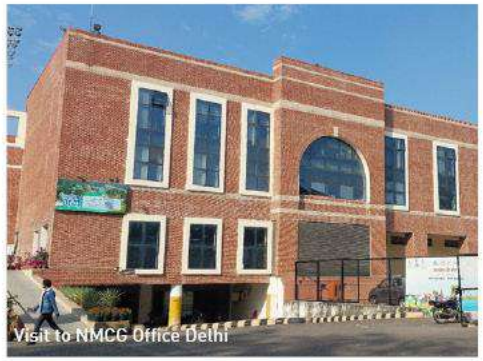
JUNE 2024

WATER AS LEVERAGE KICKOFF WORKSHOP - DEC 2023, PRAYAGRAJ.

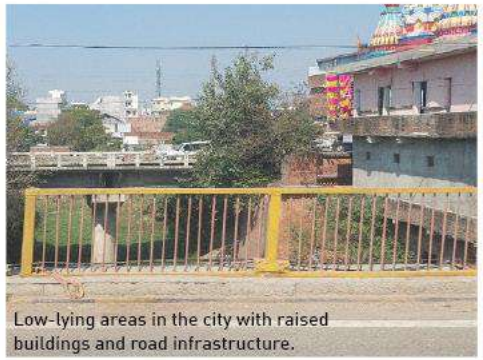
Group photo, Kick-off workshop, Prayagraj December 20-21,2023.

SITE VISITS, PRAYAGRAJ, NAINI, JHUSI & PHAPHAMAU ON 19 DECEMBER 2023


Boat ride on the Ganges


Visit to NMCG Office Delhi


Akbar fort

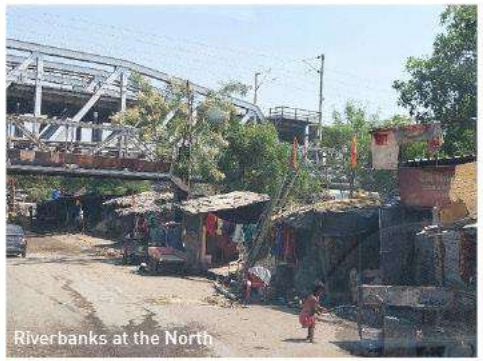

Low-lying areas in the city with raised buildings and road infrastructure.


Visit to STP in Jhusi


Visit to STP in Jhusi

Visit to Prayagraj Mela Authority


Mela bridge across the ganges


Riverbanks at the North


Water Treatment Plant, Prayagraj


Visit to STP in Naini

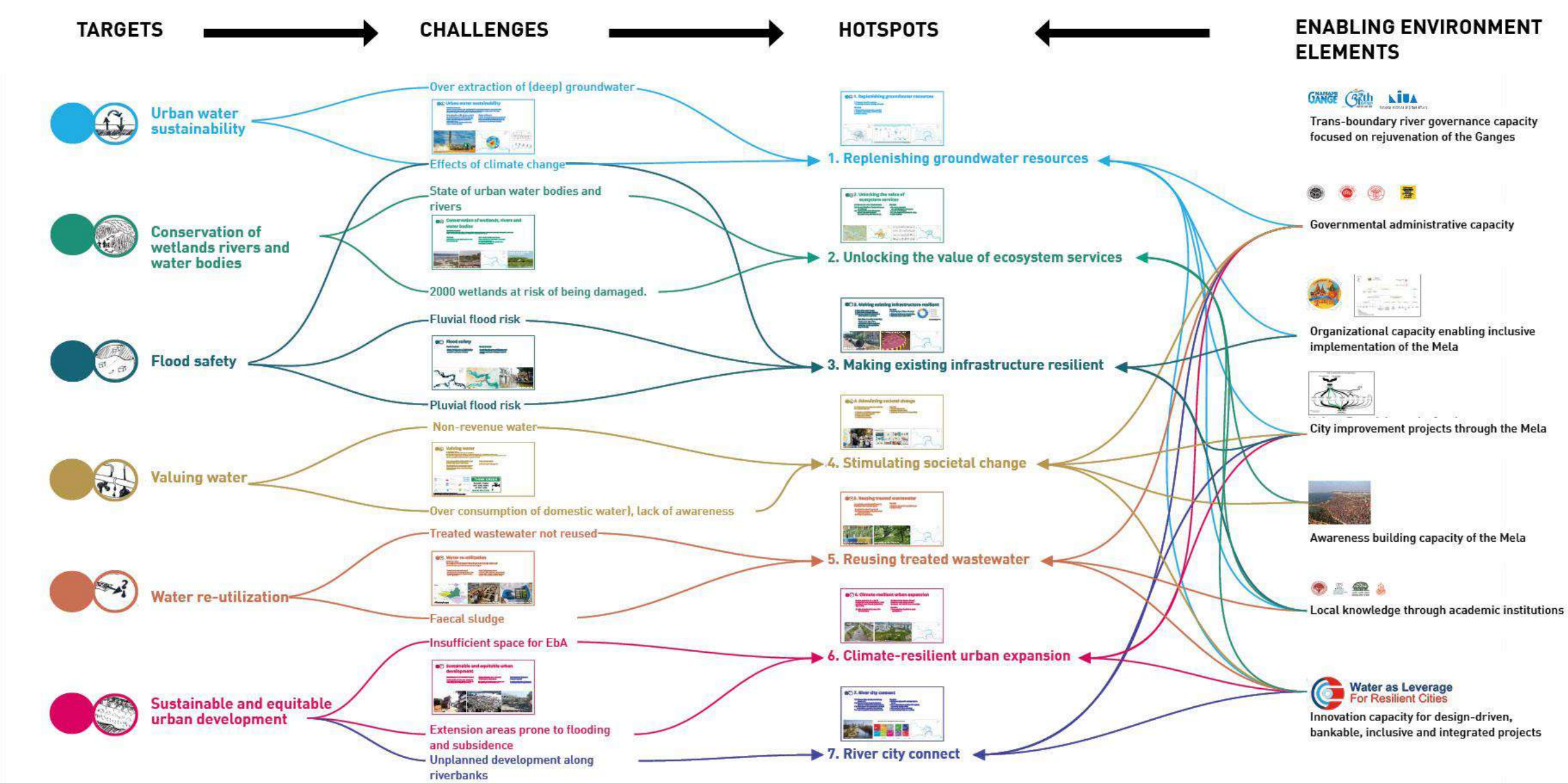

Visit to Prayagraj Development Authority


Boat services along the ganges


River plain North of the Ganges near Curzon Bridge


Treated water quality, STP Jhusi

HOTSPOT MATRIX OVERVIEW

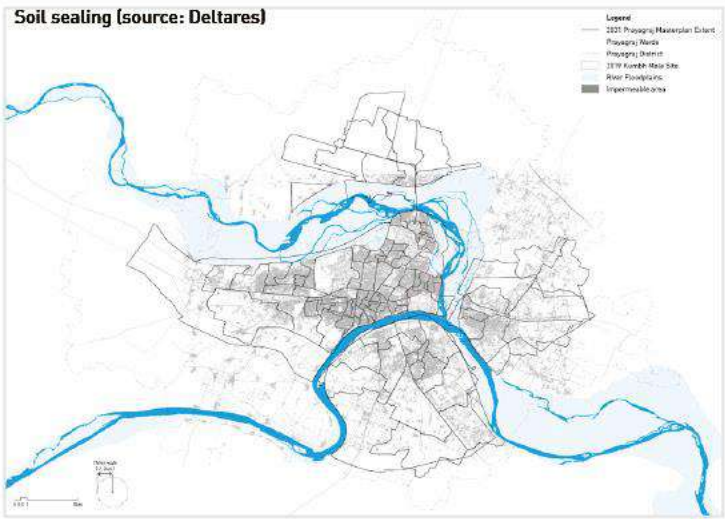


1. REPLENISHING GROUNDWATER RESOURCES

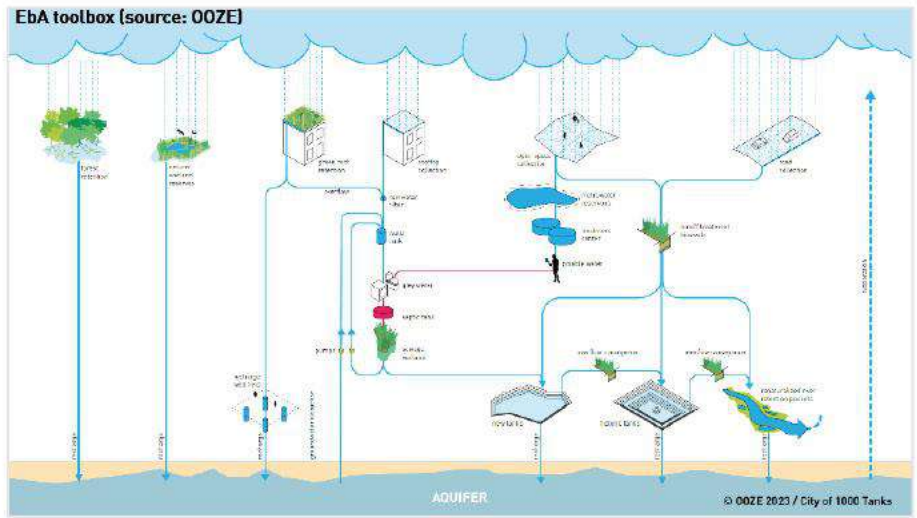
1.1 Managed Aquifer recharge
1.2 Collect, store and recharge rainwater

Benefits:
› Replenishing ground water quantity.
› Reduced peak-loads at STPs during monsoon season.

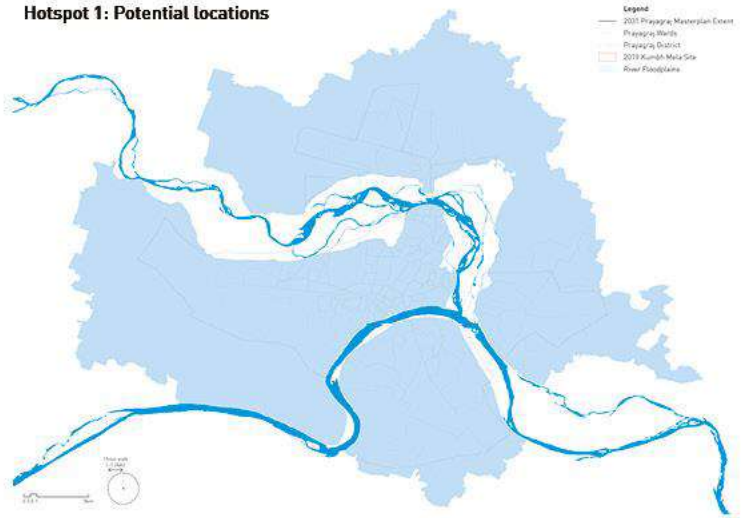
Soil sealing (source: Deltares)



EbA toolbox (source: OOZE)



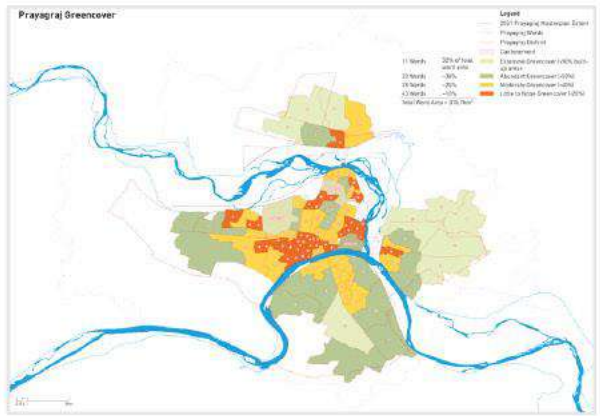
Hotspot 1: Potential locations

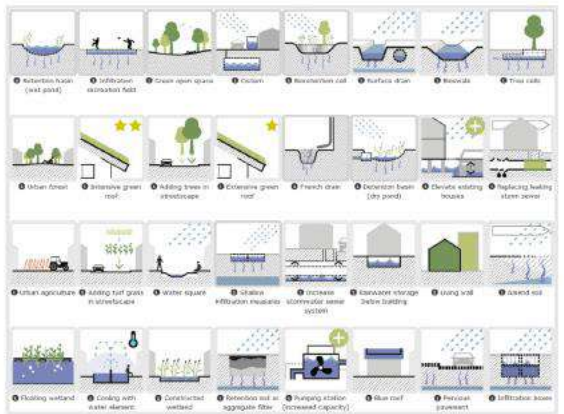


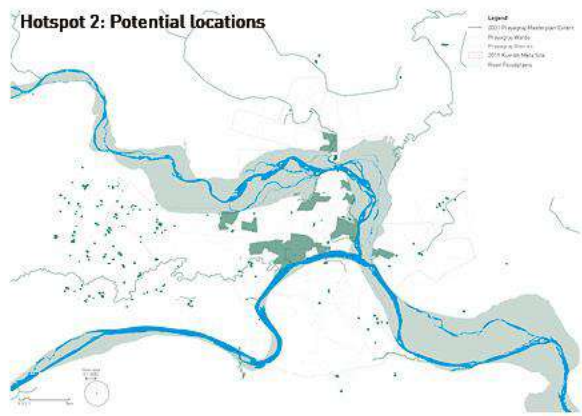
2. UNLOCKING THE VALUE OF ECOSYSTEM SERVICES

2.1 Conservation of wetland ecologies
2.2 Re-naturalization of urban rivers and water bodies
2.3 Implementing urban Ecosystem-based adaptation projects viz. green roofs, mini forests etc.

Benefits:
› Resource potentials viz. aquatic plants, fishery etc.
› Source of livelihood.
› Reduced impact of pluvial flooding.
› Urban cooling





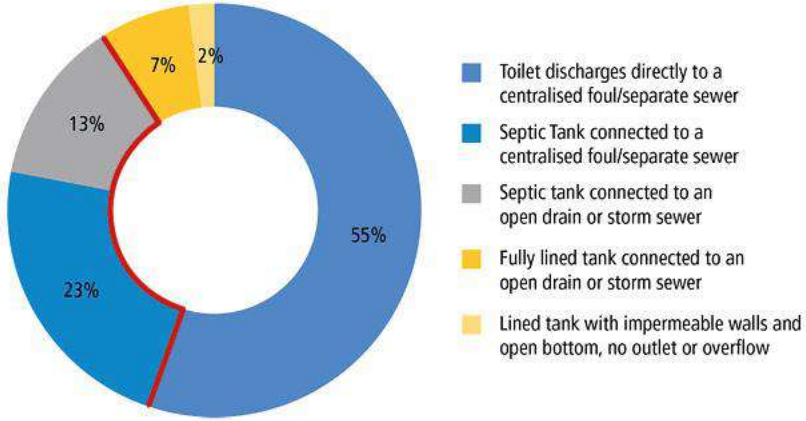


3. MAKING EXISTING INFRASTRUCTURE RESILIENT

3.1 Repairing water supply
3.2 Repairing drainage systems
3.3 Implementing re-localized EbA water treatment systems.

By adding secondary and tertiary treatment to 40% of the wastewater collection system, which has on-site sanitation (septic tanks).

Benefits:
› Less wastage of domestic water
› Reduced environmental pollution
› Reduced peak load on STPs

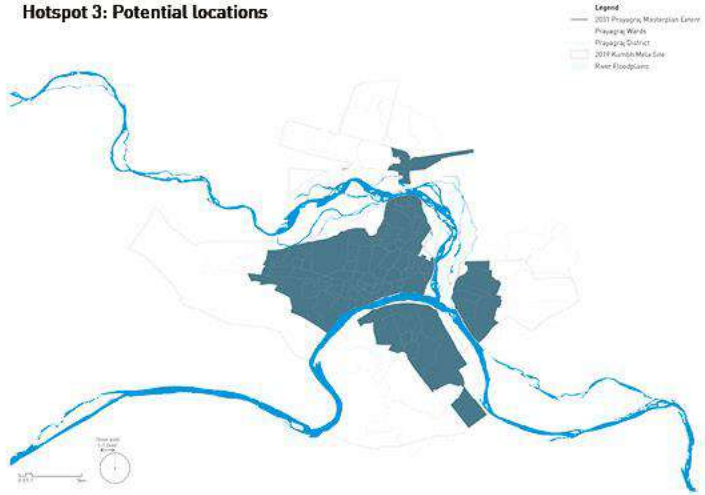


Sewage collection systems, Prayagraj source: 2020, "Shit flow" diagram, CSE.

Sewage pipe works alongside a small creek, Malviya Road, Prayagraj (source: Deltares)

Anaerobic Reactor, Water Balance Pilot, City of 1,000 Tanks, Chennai (image: Cynthia van Elk)

Hotspot 3: Potential locations

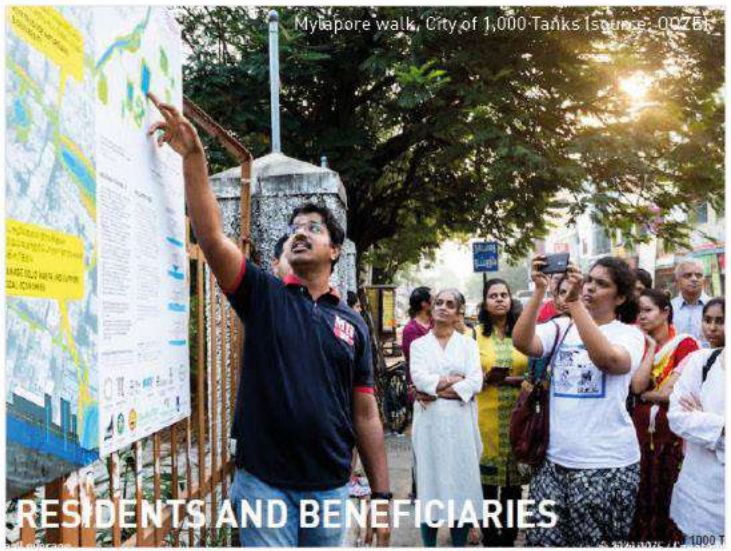


4. STIMULATING SOCIETAL CHANGE

To value water, manage waste, maintain re-localized EbA etc.

4.1 Awareness Building campaigns
4.2 Demonstration projects
4.3 Capacity building
4.4 Monitoring devices

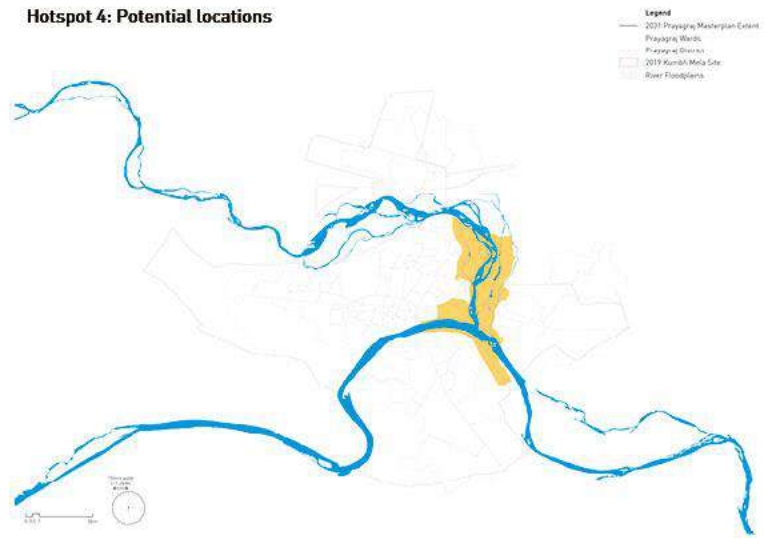
Benefits:
› People value water
› Community ownership
› Enabling environment for up-scaling



Bi-lingual animation films, City of 1,000 Tanks (source: OOZE)

© OOZE 2023 / City of 1000 Tanks

Hotspot 4: Potential locations



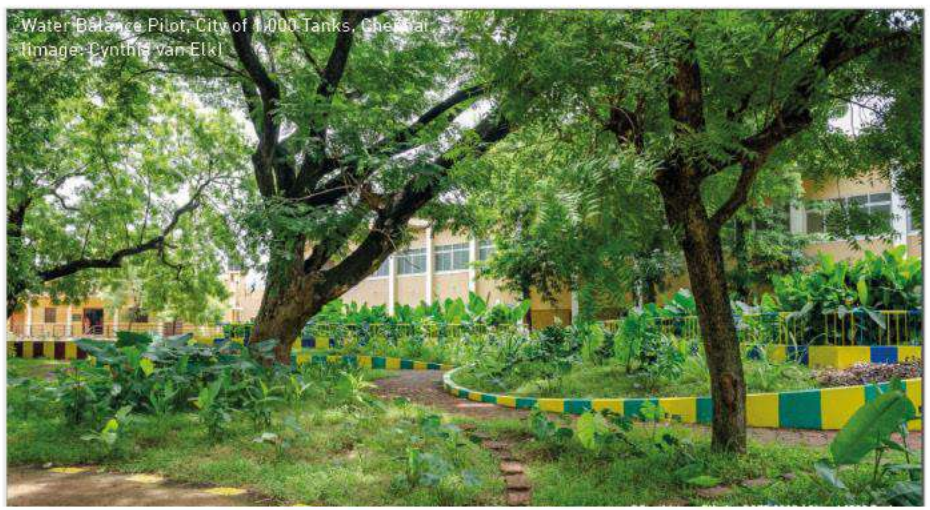
5. REUSING TREATED WASTEWATER

Generated by centralized STPs and re-localized water treatment plants

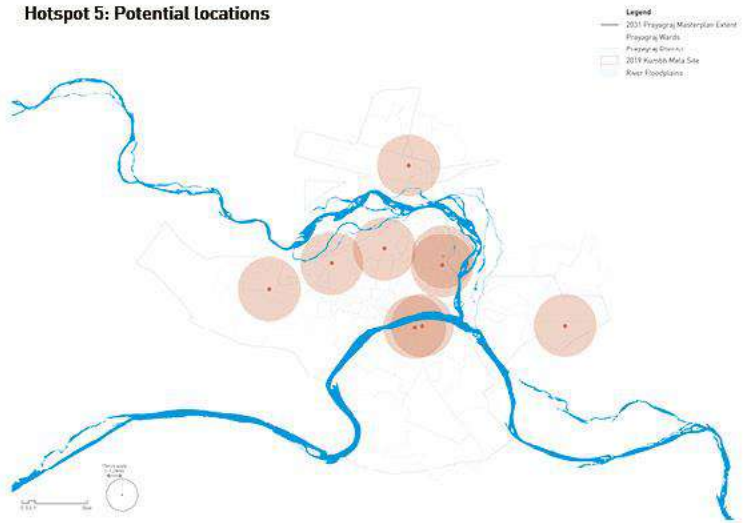
5.1 Water for urban EbA projects
5.2 Water for urban parks, green roofs and mini forests.
5.3 Water for agriculture

Benefits:
› Reduces demand for portable water
› Urban cooling

Water Samples across treatment stages, Water Balance Pilot, City of 1,000 Tanks, Chennai (image: OOZE).



Water Balance Pilot, City of 1,000 Tanks, Chennai (image: Cynthia van Elk)



6. CLIMATE-RESILIENT URBAN EXPANSION

in urban expansion areas (Draft Masterplan 2031) including Naini, Jhusi and Phaphamau, Prayagraj (westward expansion).

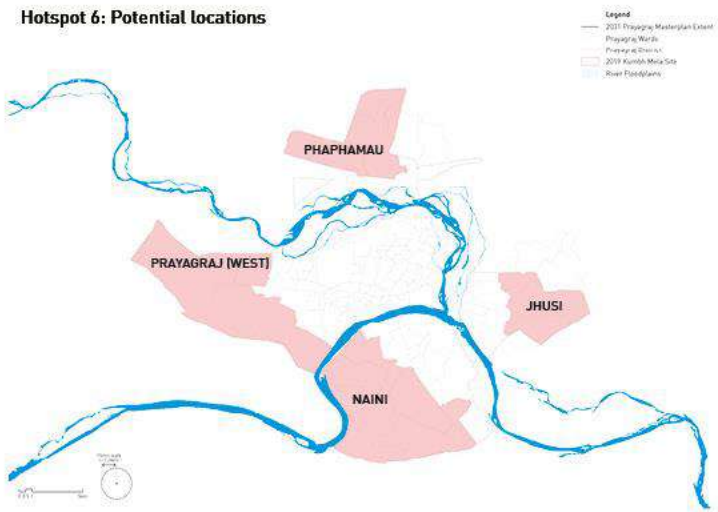
5.1 EbA integrated into new public infrastructure.

5.2 Dutch "water-bodem sturend" principle for low-lying area with extremely soft soils from riverine origin.

Benefits:
› Integrated and sustainable water management.


Bioswale (source: canr.msu.edu)


Wetland park, Sanya, China (source: turenscape.com)

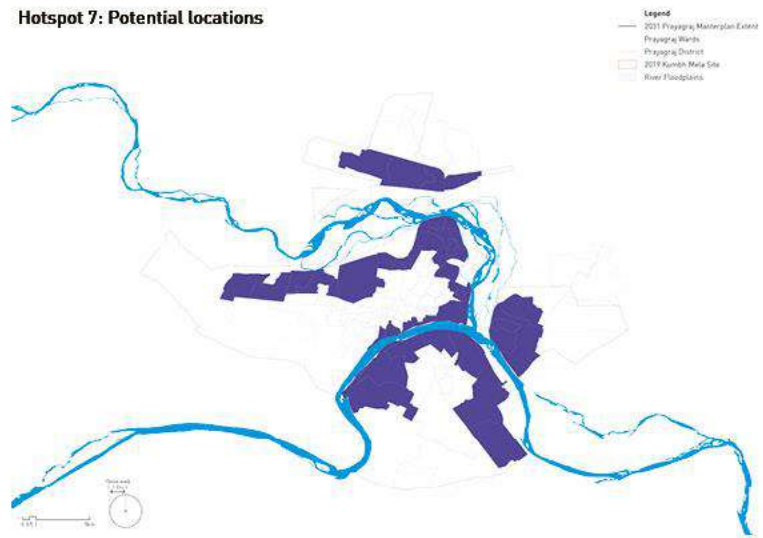


7. RIVER CITY CONNECT

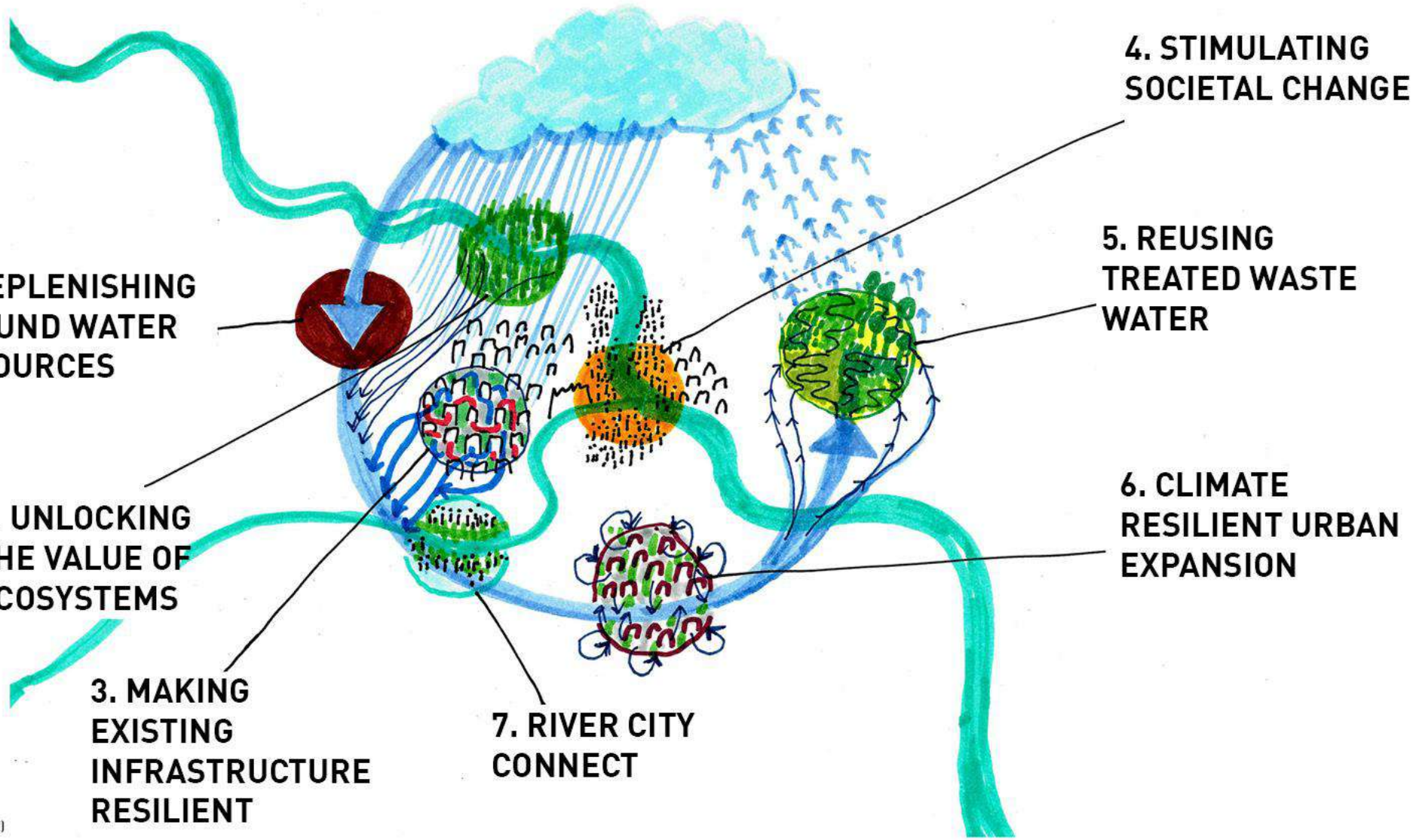
7.1 Planned urban development along river banks
7.2 Riparian zones along flood plains function as parks and public spaces
7.3 More venues for recreational, cultural and religious activities along rivers
7.4 Improved public transit across rivers

Benefits:
› Citizens engage with and appreciate rivers
› River edges become vital public spaces improving quality of life
› Year-round tourism economy
› Improved city-wide connectivity

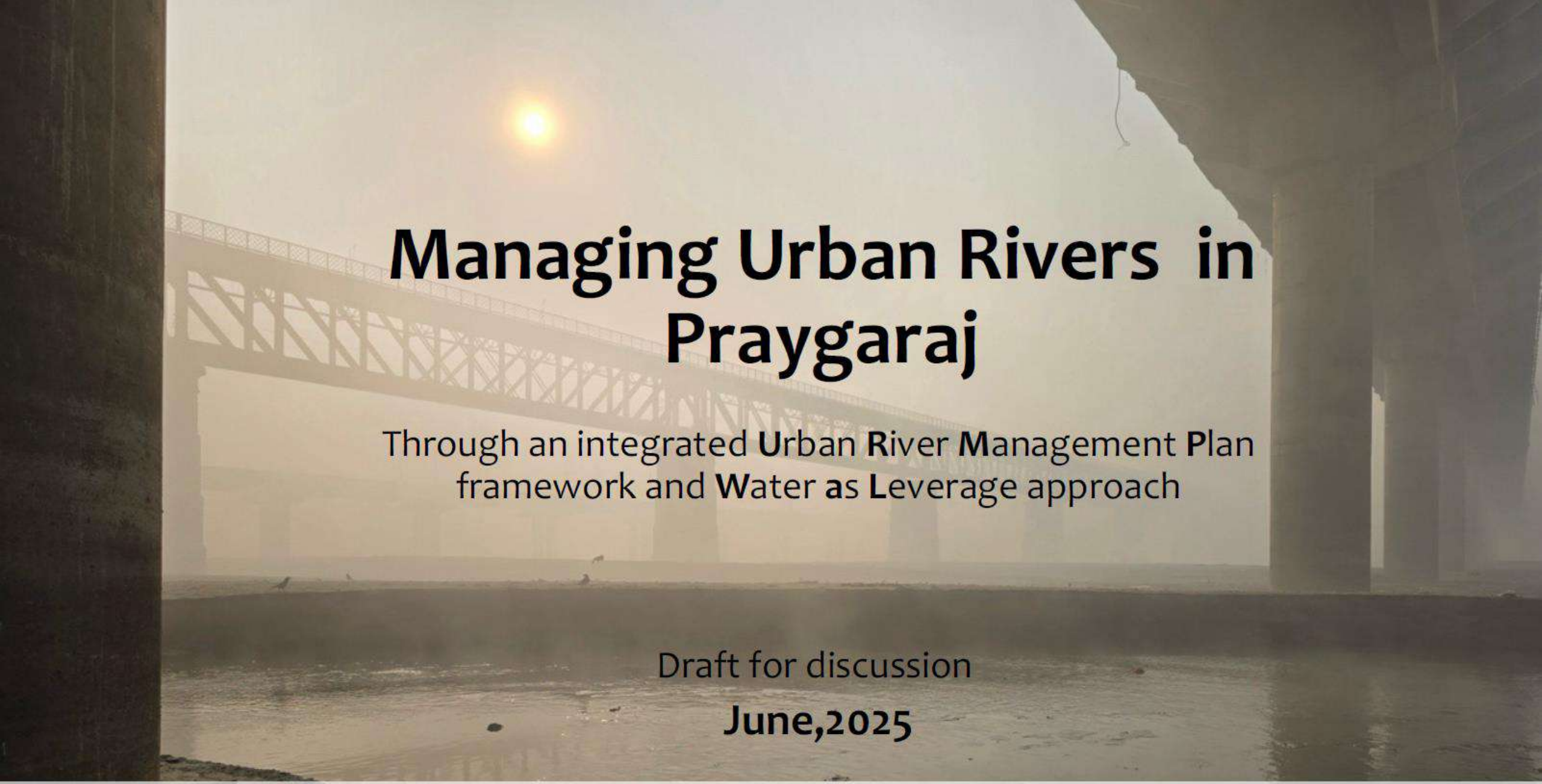

The Wild Mile, Chicago (source: archdaily.com)



WATER AS LEVERAGE FOR PRAYAGRAJ



(source: OOZE)



Managing Urban Rivers in Praygaraj

Through an integrated **U**rban **R**iver **M**anagement **P**lan framework and **W**ater **a**s **L**everage approach

Draft for discussion

June,2025

Water as Leverage For Resilient Cities

NAMAMI GANGE

National Institute of Urban Affairs

What is a URMP?

Coordination between agencies

Planning

Projects

An integrated approach to manage the river and its associated elements in a city sustainably

Water bodies

Wetlands

Nallahs

Others

Environment

Social

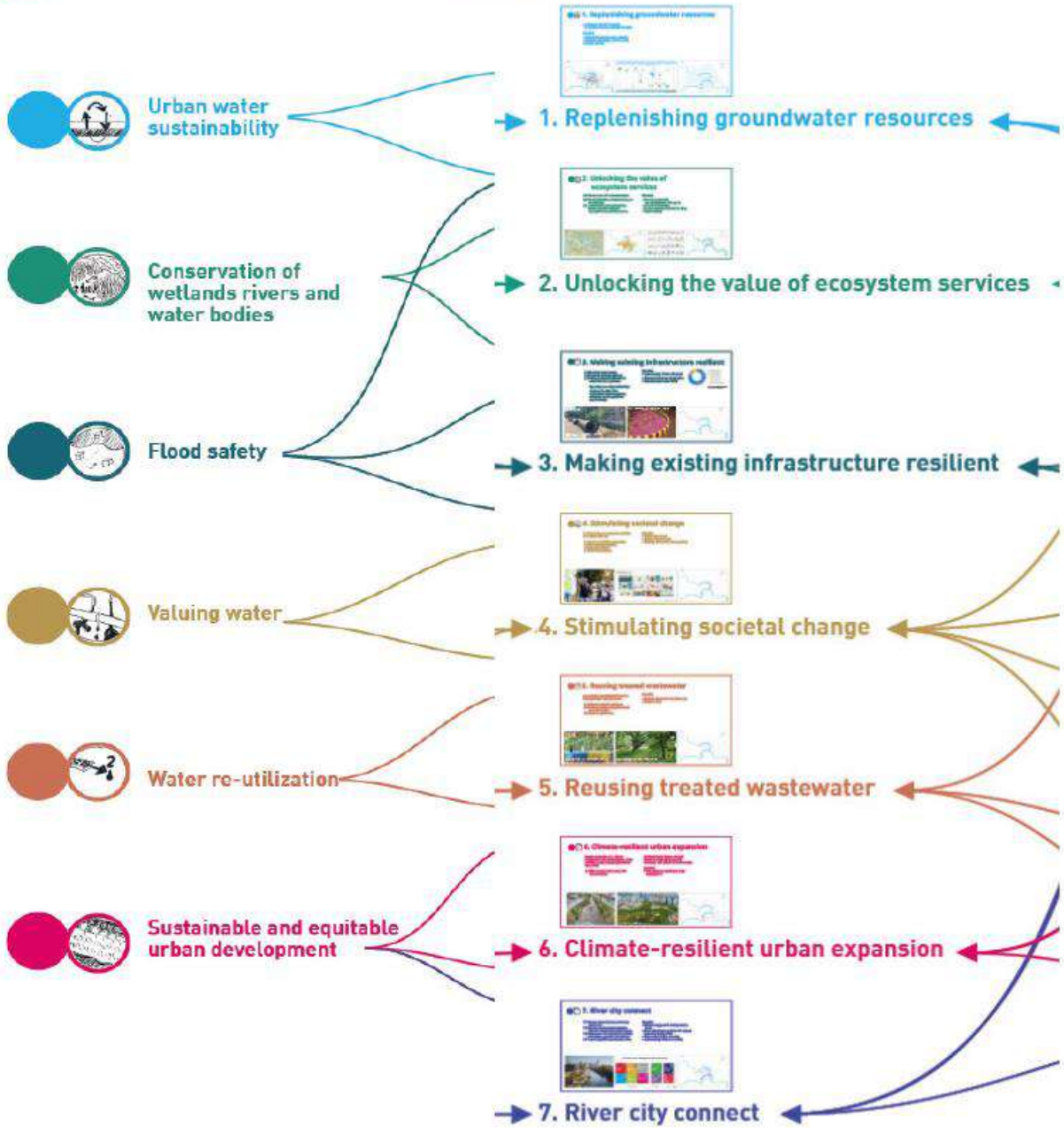
Economic

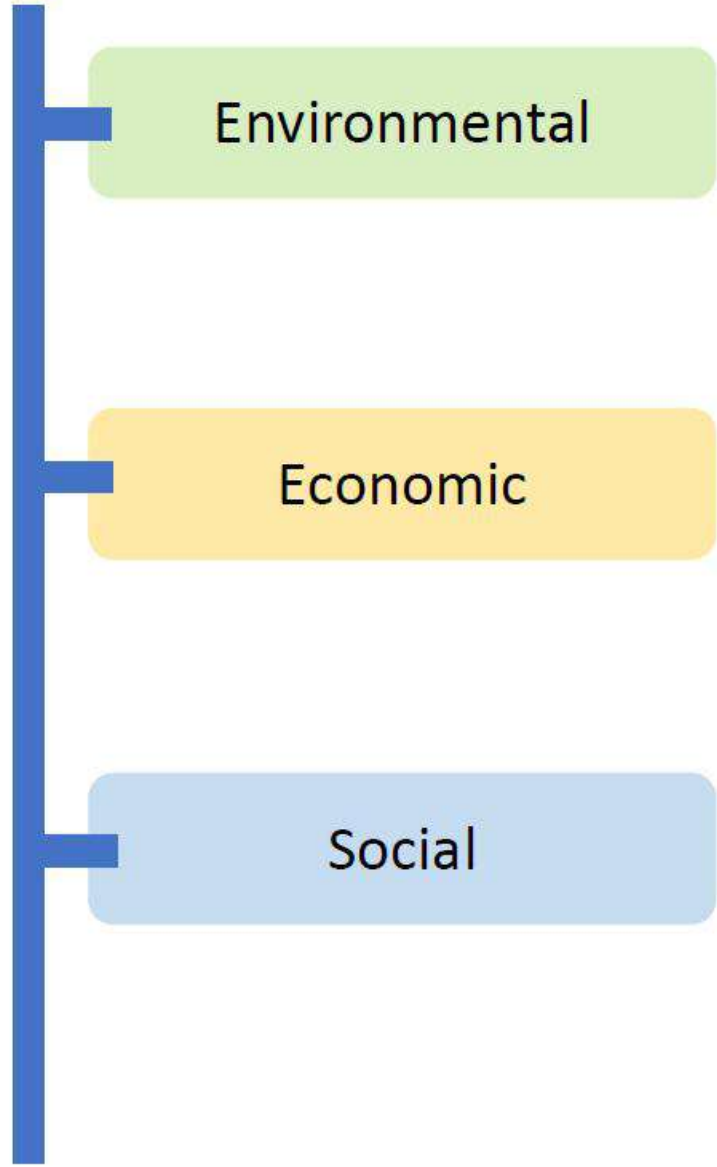
WAL - URMP Convergence

Water as Leverage For Resilient Cities

National Institute of Urban Affairs

WATER & ENVIRONMENT VERTICAL





SWOT Analysis

STRENGTHS

- Religious, Cultural, and Heritage Importance
- Strong Educational and Administrative Presence
- Robust Regional Connectivity
- Infrastructure & Disaster Preparedness

OPPORTUNITIES

- Natural Features and Agricultural Potential
- Riverfront Redevelopment and Eco-Tourism
- Treated Water can be Reused
- Sustainable Infrastructure through Blue-Green Planning
- Chatnaag Area Development

WEAKNESS

- Encroachment on floodplains
- Pollution and Inadequate Sewage Treatment
- Unaccounted-for non-revenue water
- Inadequate Stormwater Management
- Weak People - River Connect

THREATS

- Climate Change & Increasing Flood
- Depleting Groundwater Resources
- High Floating Population Pressure

Prayagraj WAL - URMP Vision

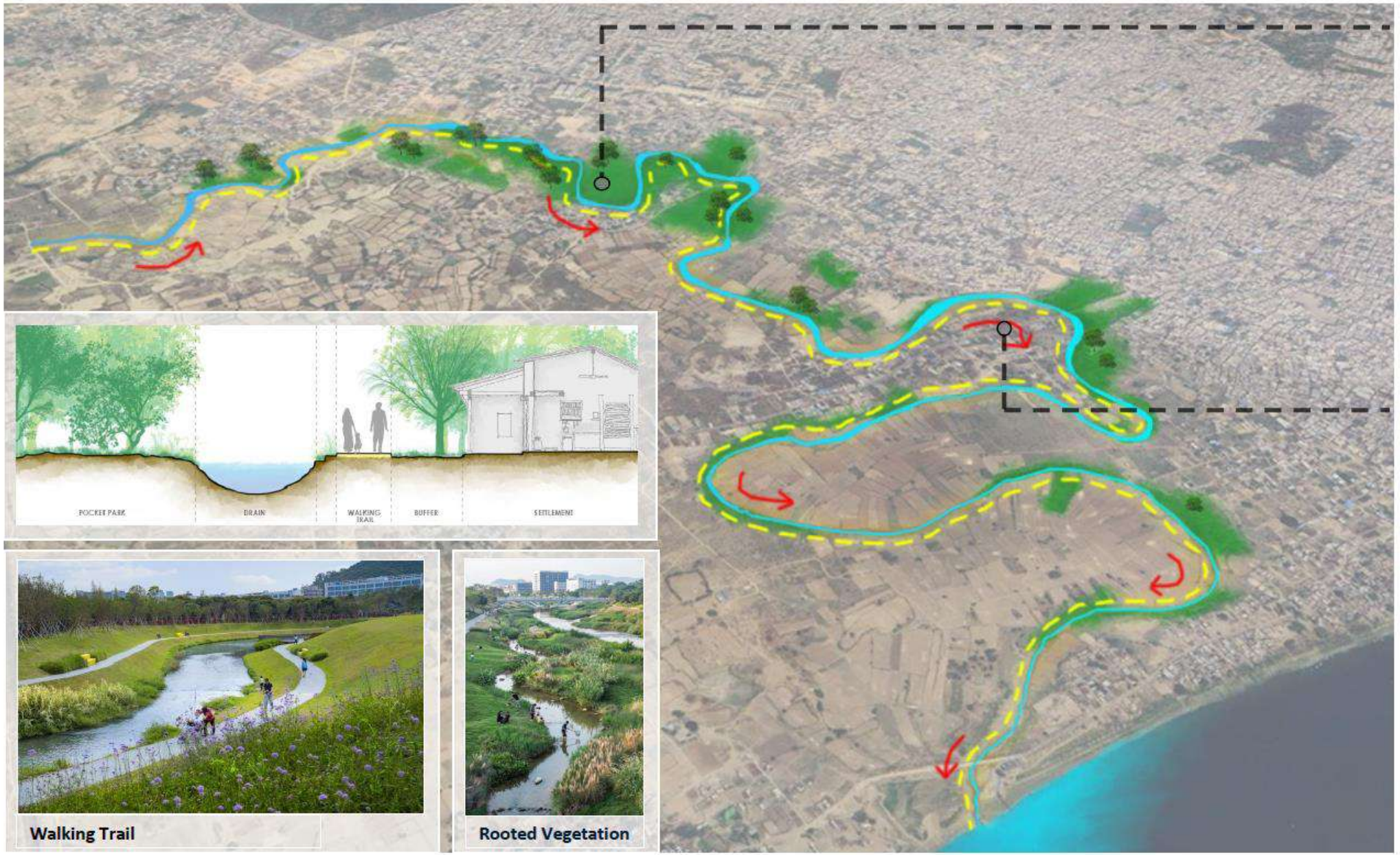
The vision is to rejuvenate Prayagraj as **Living Heritage Corridors** through a comprehensive strategy for riverfront rejuvenation, tourist attractions, and active community engagement.

The strategies have

23

INTERVENTIONS

Drain Rejuvenation



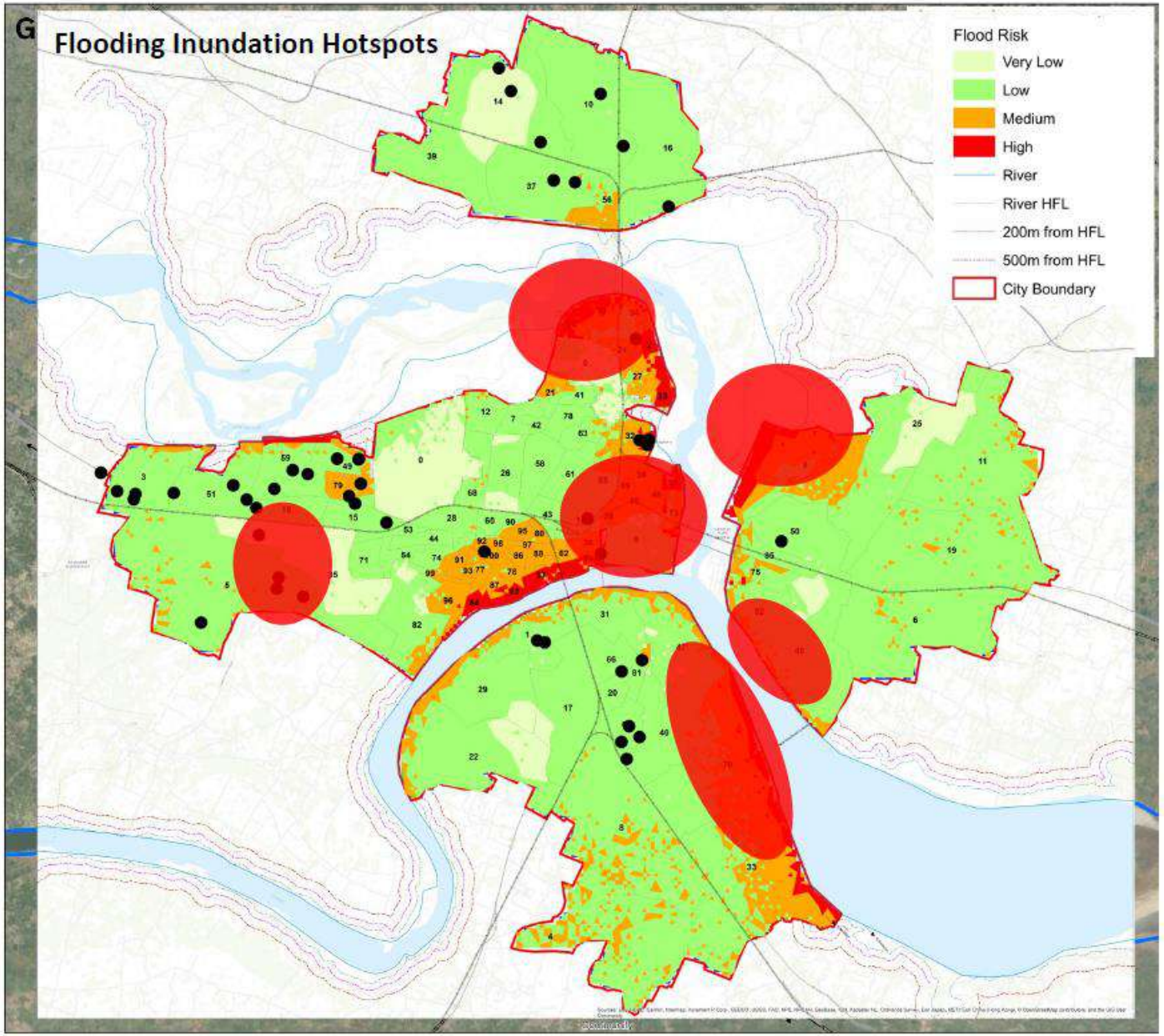
Walking Trail

Rooted Vegetation

Pocket Parks & Green Spaces: Create small parks and green spaces at strategic locations along the drain for community gathering and recreation.

Walking Trail : use of permeable pavements, green roofs, and porous materials in areas adjacent to the drain to reduce stormwater runoff and promote groundwater recharge.

Flood Resilience Via Recharging



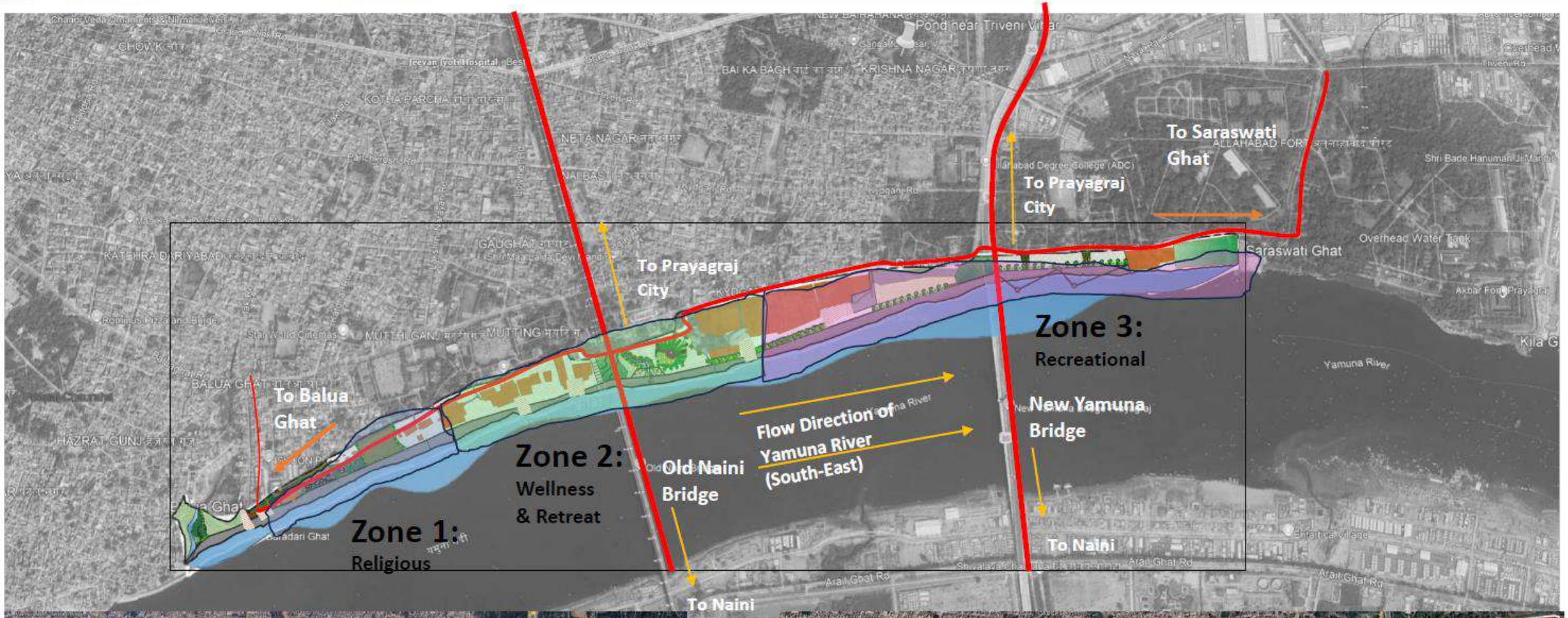
Designing water-sensitive models for urban growth in Prayagraj, Naini, Jhusi and Phaphamau

- Positive water cycles will be integrated with appropriate urban form and water governance models.
- The project will proactively integrate the sustainability of water sources (ground, surface, re-used water) into the urban growth model.
- Streets will incorporate urban nature-based solutions, and the management of water will be designed proactively. (Suggested by Deltares)

Recharge Potential Areas Identified

Chandrasekhar Azad Park
Bai Ka Bagh
Saraswati Park
Tiranga Park
Roxberg Botanical Garden

Riverfront Development



Riverfront Zone pre-monsoon

Riverfront Zone during-monsoon (Inundated Area)

THANK YOU…

Water as Leverage for urban water climate resilience - WaL RVO.nl

https://www.linkedin.com/company/waterasleverage/

भारत सरकार
GOVERNMENT OF INDIA
सत्यमेव जयते

Government of the Netherlands

Water for as Resilient Cities Leverage Asia

UN HABITAT
FOR A BETTER URBAN FUTURE

Deltares

PARTNERS FOR WATER
CO-CREATING IMPACT

Wrap-up and closing

PARTNERS FOR WATER
CO-CREATING IMPACT

Thank you!

Please join us at the Networking drinks

PARTNERS FOR WATER
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