

**From**  
*Ganga-arpanam Astu*  
**to**  
*Namami Ganga*

**From indiscriminate to disciplined  
respectful approach to Ganga-river  
Cleaning**

# Presentation map



Where ? Slide 1 - 2



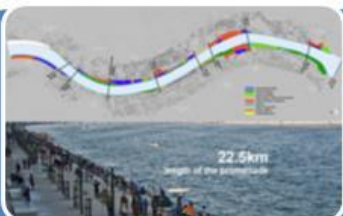
Why ? Slides 3 - 7



What ? Slides 8 - 11



Who ? Slides 12- 14



How ? Slides 15 - 20

# Combined Ganga basin

Catchment : Uttar Pradesh (294,364 km<sup>2</sup>), Madhya Pradesh (198,962 km<sup>2</sup>), Bihar (143,961 km<sup>2</sup>), Rajasthan (112,490 km<sup>2</sup>), West Bengal (71,485 km<sup>2</sup>), Haryana (34,341 km<sup>2</sup>), Himachal Pradesh (4,317 km<sup>2</sup>) and Delhi (1,484 km<sup>2</sup>), the whole of Bangladesh, Nepal and Bhutan.





# River Ganga

Stretches **2,525 km** Himalayas and flows through Gangetic Plain of North India into Bangladesh and empties into the Bay of Bengal



# Background

- Source to about 40% of India's population across 11 states
- Serves an estimated population of 500 million people or more, most in the world.
- It is one of the most polluted rivers in the world
- Number of past initiatives have failed to deliver the modest aim of making Ganga Bath-able.
- India's Prime minister Narendra Modi launched Namami Ganga project in July 2014

The giver

- Life support for 40 % of Indians

Taker

- Huge quantities of liquid and solid waste

Over  
loaded

- Needs rejuvenation



# Contributing factors

- **Human waste :** Ganges flows through
  - 29 cities with population over 100,000;
  - 23 city-towns with population between 50,000 and 100,000, and
- **Industrial waste:** Many tanneries , chemical plants, textile mills, distilleries, slaughterhouses, and hospitals dump untreated waste, which forms
  - 12% of the total volume of effluent reaching the Ganges
- **Religious events :** During festival seasons over few weeks,
  - over 70 million people bathe in the Ganges to cleanse themselves from their sins.
- **Dams :** Solution or problems
  - Built in 1854 Haridwar dam led to decay of the Ganges by diminishing the flow of the river.
  - Farakka dam causes increased salinity & increases tension with Bangladesh
- **Seasonal variations in flow:** Causing seasonal floods and droughts in certain areas.



# Impact – Bhagnodayam !

- Classification done by Uttarakhand Environment Protection and Pollution Control Board's (UEPPCB) on river waters put the Ganges in D ( with Coli form count in excess of 5,500, which is too high even for agricultural use ).
- The leather industry in Kanpur which employs around 50,000 people in more than 400 tanneries that use toxic chromium (70 times the recommended maximum) that has not decreased after GAP-1 implementation in 1995.
- The Ganges River dolphins is listed as an endangered species, its population is believed to be <2000. Hydroelectric and irrigation dams along the Ganges prevent these fish from travelling up and down river.
- The incidence of water-borne and enteric diseases – such as gastrointestinal disease, cholera, dysentery, hepatitis A and typhoid – among people who use the river's waters for bathing, washing dishes and brushing teeth is high, at an estimated 66% per year.



# Past actions & present status – Upchar samiksha



- GAP (launched in 1985) was delayed for two years, **the expenditure was almost doubled and the results were poor.**
- Very little provision of public latrines was made and the **open defecation of lakhs of people continued along the riverside**
- The failure of the GAP has also been variously attributed to
  - **Poor environmental planning & understanding of the human–environment interactions**
  - **Indian "traditions and beliefs"**
  - **Corruption and lack of technical inputs**
  - **Lack of support from religious authorities; etc.**
- In November 2008, the Ganges was declared a "National River", facilitating **the formation of a National Ganga River Basin Authority** that would have greater powers to plan, implement and monitor measures aimed at protecting the river.
- In July 2014, the Government of India announced an **integrated Ganga development project titled Namami Ganga (nmcg.nic.in)** launched by NDA Government.







# Key features of Namami Ganga

- An **Integrated Ganga Conservation Mission called “Namami Gange”** has been set up with INR 2,037 Cr set aside for this purpose.
- A sum of INR 100 Cr allocated for **developments of Ghats and beautification of River Fronts at Kedarnath, Haridwar, Kanpur, Varanasi, Allahabad, Patna and Delhi** in the current financial year.
- Namami Gange builds on ongoing efforts of UPA, and plans for a concrete action plan for future. The interventions at **Ghats and River fronts will facilitate better citizen connect** and set the tone for river centric urban planning process.
- The **long-term vision** will emanate from the Ganga River Basin Management Plan being prepared by **the Consortium of 7 IITs**, first version of which is likely to be available by the end of this year.
- On a medium term, **certain interventions both infrastructure and non-infrastructure** need to be introduced to set the tone for longer term vision.



# Components of Namami Ganga




## **Nirmal Dhara- ensuring sustainable municipal sewage management**

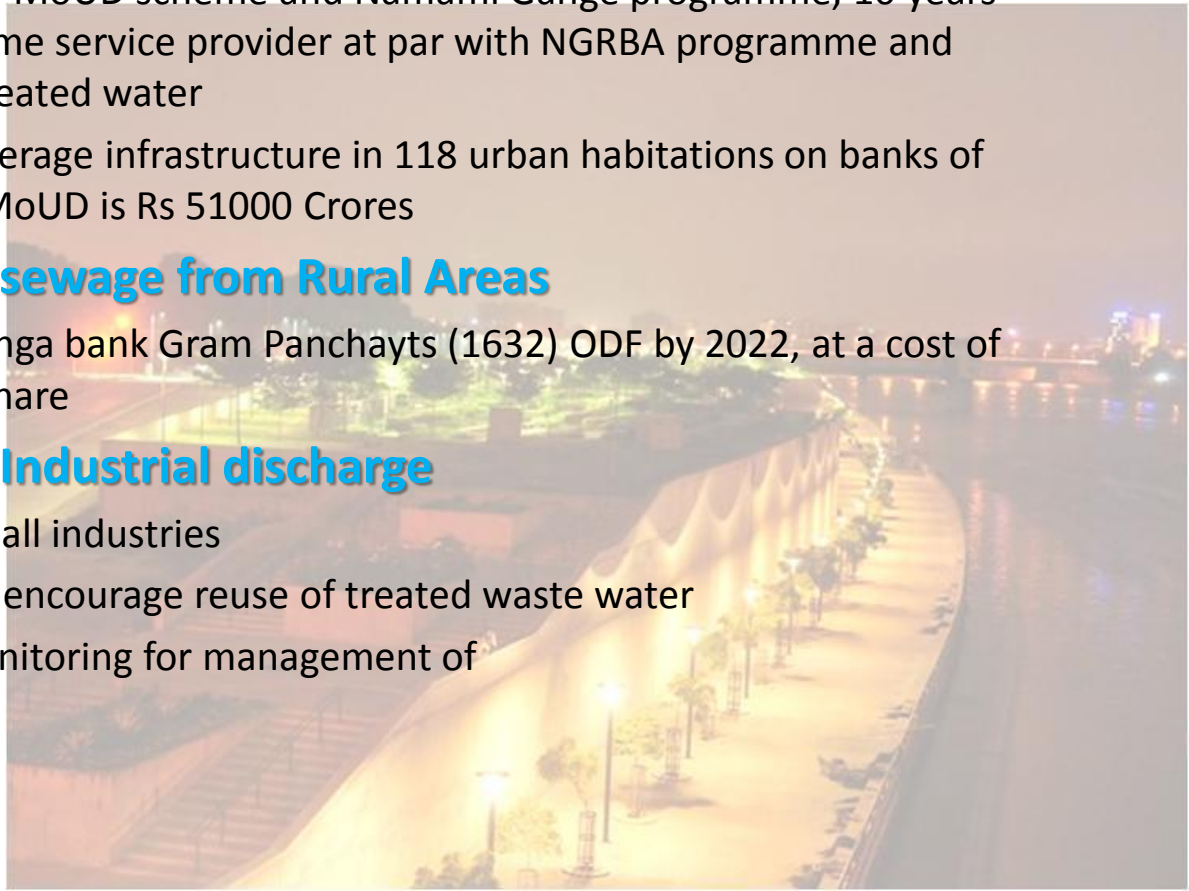
-  Project coordination with Ministry of Urban Development.
-  Incentive for states to take up projects on Ganga with central grants for sewerage infrastructure.
-  Uniform standards for both MoUD scheme and Namami Gange programme, 10 years mandatory O&M by the same service provider at par with NGRBA programme and PPP, Mandatory reuse of treated water
-  Expanding coverage of sewerage infrastructure in 118 urban habitations on banks of Ganga- estimated cost by MoUD is Rs 51000 Crores

## **Nirmal Dhara- managing sewage from Rural Areas**

-  Mo DWS scheme for all Ganga bank Gram Panchayts (1632) ODF by 2022, at a cost of Rs 1700 Crores as central share

## **Nirmal Dhara- managing Industrial discharge**

-  Making ZLD mandatory for all industries
-  Rationalized water tariff to encourage reuse of treated waste water
-  Real time water quality monitoring for management of



# Components of Namami Ganga

## ☐ Aviral Dhara

- ☐ Enforcing River Regulatory Zones on Ganga Banks
- ☐ Rational agricultural practices, efficient irrigation methods
- ☐ Restoration and conservation of wetlands

## ☐ Ensuring ecological rejuvenation by conservation of aquatic life and biodiversity

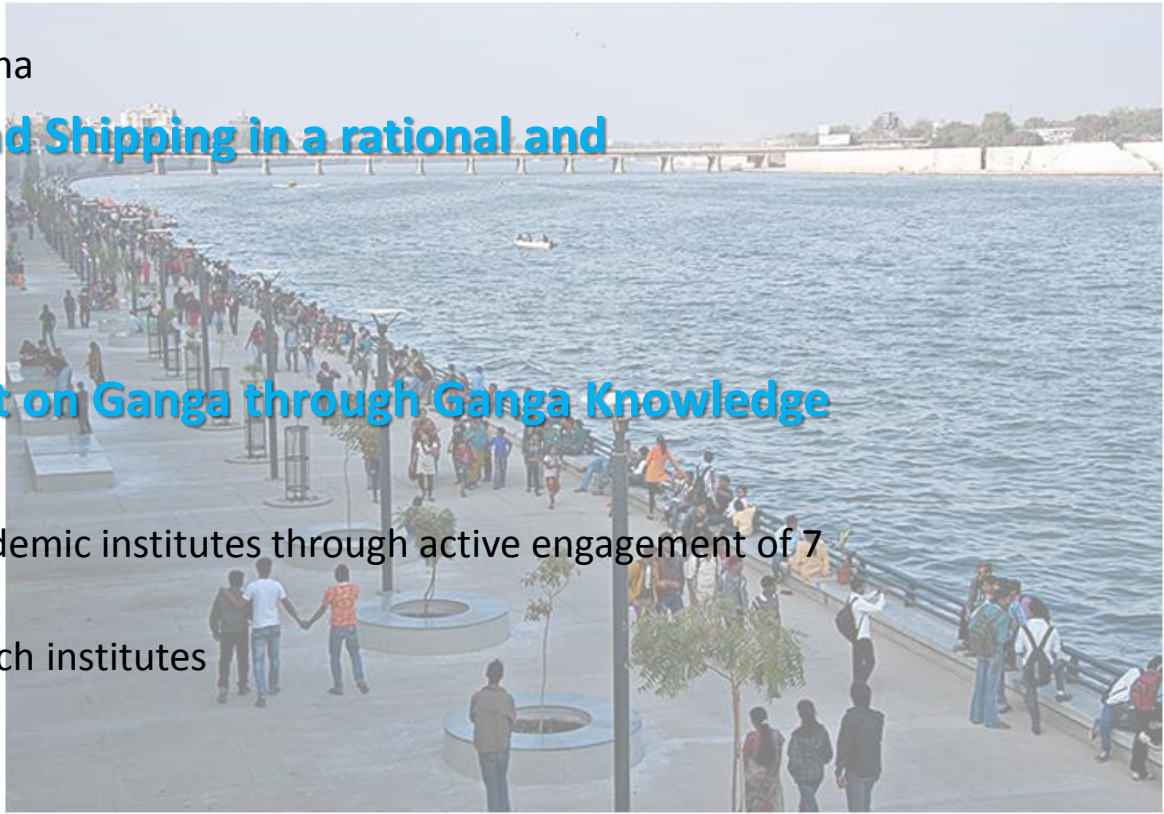
- ☐ restoring the flora and fauna

## ☐ Promotion of Tourism and Shipping in a rational and sustainable manner

- ☐ ????
- ☐ ????

## ☐ Knowledge Management on Ganga through Ganga Knowledge Centre

- ☐ Expanding network of academic institutes through active engagement of 7 IITs and NITs (?)
- ☐ Linkages with other research institutes





# Proposed action strategy

## Immediate (0-5 years)

Immediate Visible  
change

1) Isolate manageable sections ; 2) Create visible examples; 3) Show pieces to build public confidence; 4) Outsourced works

## Sustained (2-10 years)

Sustainable  
thinner layered

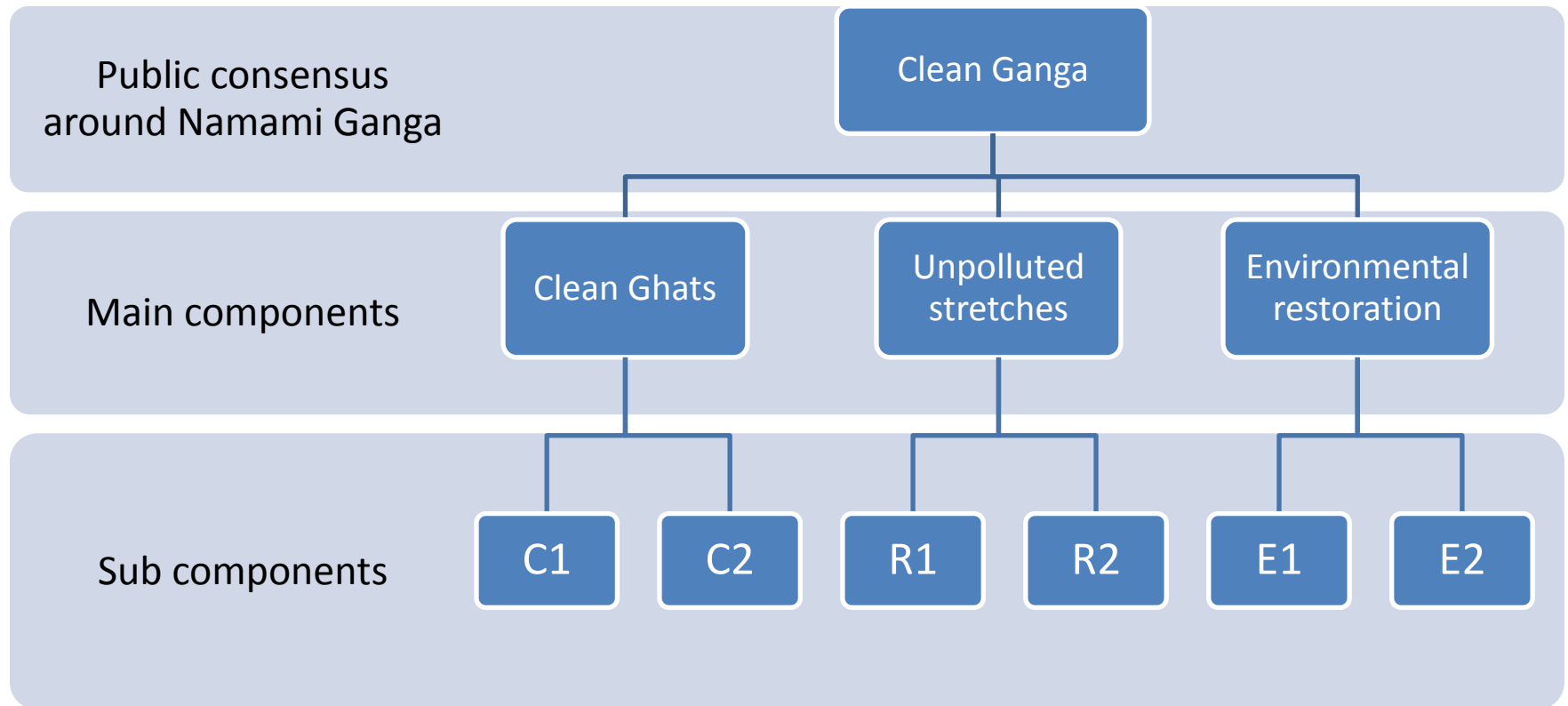
1) Industrial Municipal pollution control; 2) Awareness building & behavior change; 3) Bank protection / Cleaning of Ghats

## Regulatory (2-15)

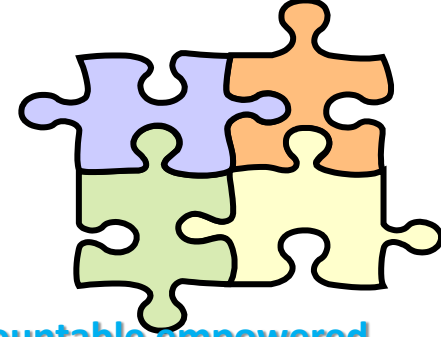
Systemic &  
institutional

1) River monitoring stations; 2) Monitoring STP outfalls; 3) Planning formulation & setting effluent & stream standards

# Objective Results framework



# Key questions and (potential solutions)

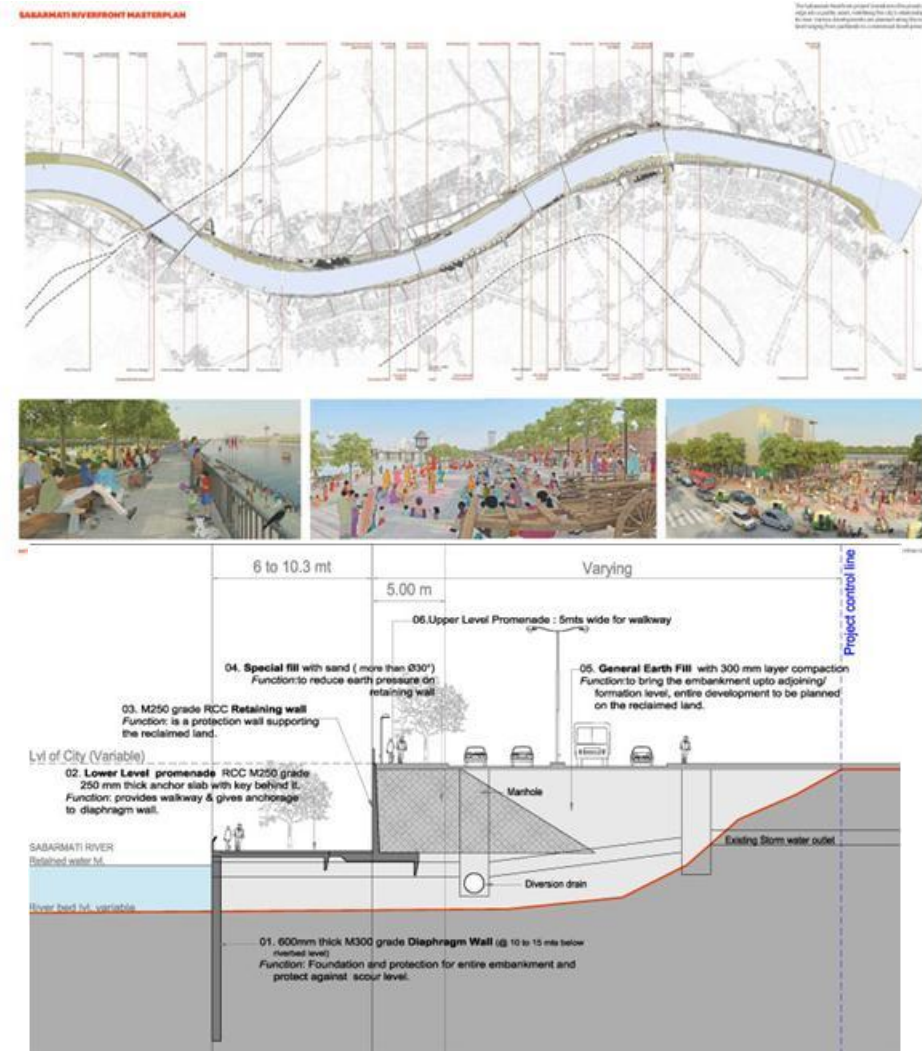


- ? **Dynamic macro-plan / micro plans**
  - ? **Deployment of capacities for**
    - ? envisioning and marketing
    - ? micro planning & detailed designs
    - ? quality implementation
    - ? Operation & Maintenance
  - ? **Limited sewerage infrastructure on river banks**
  - ? **Scope of work of consortium of 7 IITs,**
  - ? **Clear definition and segmentation of work components essential**
  - ? **Financial mechanisms to be linked with clear deliverables**
  - ? **Ensuring due processes for timely deliveries**
- **Designate a full time accountable empowered PMU**
  - **Chairs and assistantships**
    - CEPT NID MICA etc
    - Joint design studios & projects
    - Effective internship and alumni programme
    - Technical selection of agencies
  - **Roads, tourism, pilgrimage, etc; related infrastructure**
  - **Blend with experienced experts from public private**
  - **IIT consortium with PMU may do this work**
  - **With due consultation of all stakeholders PPP models can be developed**
  - **Board of Directors from PMU and Government**

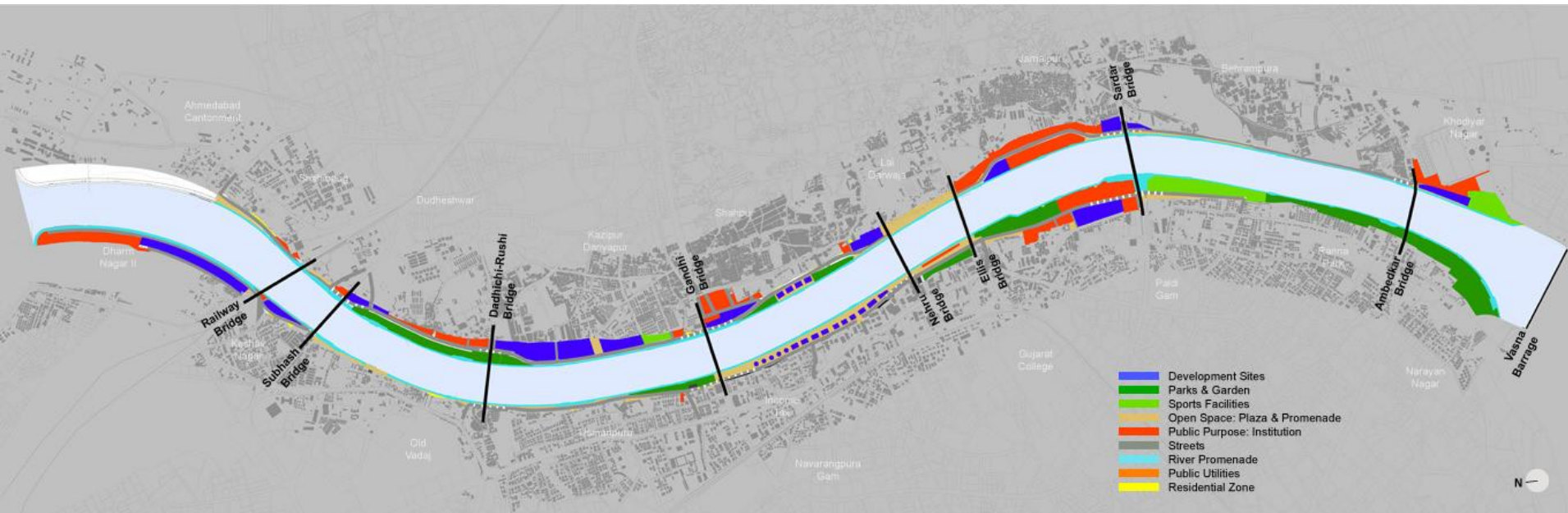


# Marketing Namami Ganga

1. Series of **Dream like alternative visions of Ganga** in pictures
2. **If you can't redevelop old ghats,** to begin with, then **develop new ones**
3. Back it with **engineering concepts**
4. Based on **popular mandate** convert these in to DPRs
5. Encourage **BOOT solutions** for leveraging investments
6. STPs and Conveyance system to **gel with aesthetic Ghats.**
7. Encourage Out-of-Box **high-tech Business solutions**



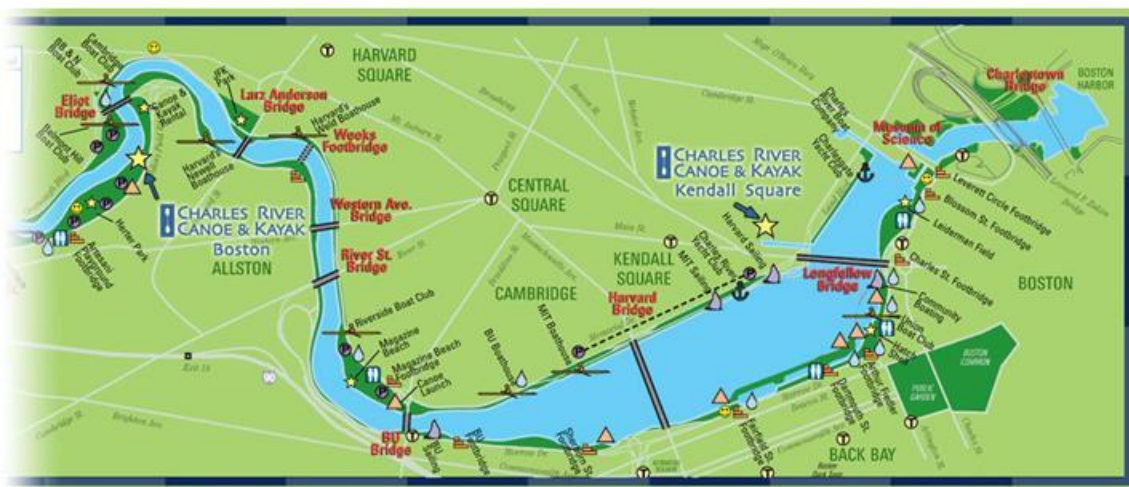
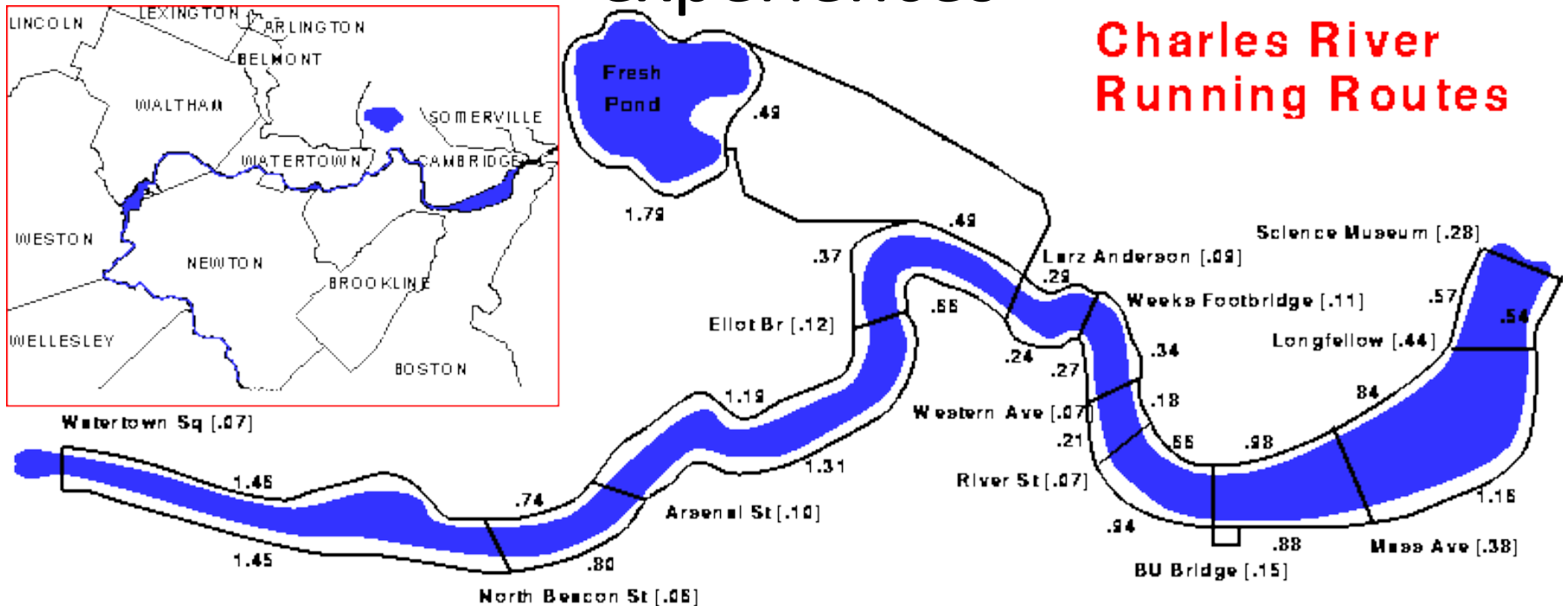
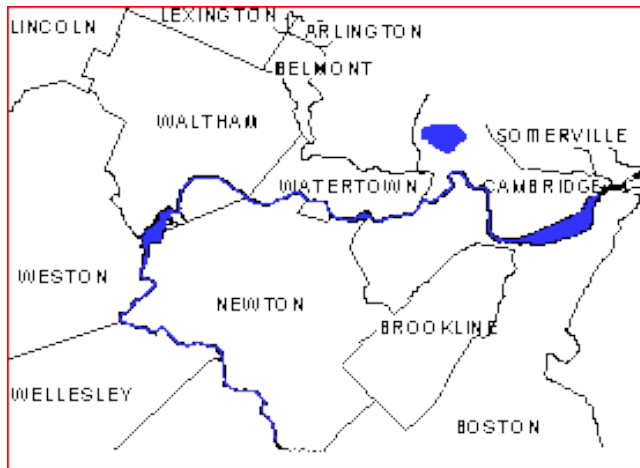
# Lessons to be drawn from local experiences





# Lessons to be drawn from global experiences

## Charles River Running Routes





# From “Nobody’s to my Ganga”

- **Leasing stretches of Ganga for management by private entities ?**
  - **Lessees to include** the local **spiritual and allied organizations**
  - A **standardized code of management** for all lessees regarding the cleanliness and waste management
- **Encourage tourism linked with spirituality and commerce**
  - Local bodies to **impose standards of cleanliness and back it with common services**
  - Temple authorities and **Akhadas should ensure code of cleanliness** by their followers
  - **Private ghats, water parks, river front restaurants and Ganga-pools / bowls**
  - **Systematic rehabilitation plan** for small-service sector and markets in well designed modern spaces
- **Peer evaluation and audit of STPs and compulsory compliance (ORSANCO-like)**
  - **These audits** to be treated as statutory with expectation of **satisfactory compulsory closures**

# River fronts to kick off with concept films like SRDP

Kedarnath, Haridwar, Kanpur, Varanasi, Allahabad, Patna and Delhi

- **Sabarmati riverfront project.**

- Rehabilitation of affected people (<http://www.sabarmatiriverfront.com/images-videos/video-r-r-projects>)
- Channel New coverage by Asia-Singapore (<http://www.sabarmatiriverfront.com/images-videos/channel-news-asia-singapore-coverage>)
- Stages of construction of Sabarmati river front (<http://www.sabarmatiriverfront.com/images-videos/construction-sequence>)

- **Charles river from development**

- EPA's 2013 Smart Growth Award: Charles City Riverfront Park, Charles City, IA (<https://www.youtube.com/watch?v=NBq8rTzNjYY>)
- Charles river front development process and steps ([http://www.powershow.com/view/a3e08-Njg1M/Riverfront\\_Development\\_Public\\_Meeting\\_powerpoint\\_ppt\\_presentation](http://www.powershow.com/view/a3e08-Njg1M/Riverfront_Development_Public_Meeting_powerpoint_ppt_presentation))



**Thanks !**