

Ganga

Reimagining Rejuvenating Reconnecting

Rajiv Ranjan Mishra
Puskal Upadhyay

rajiv_ranjanmishra@yahoo.com

pupadhyay@yahoo.com



Why Ganga Matters?

Lifeline of People, More than a River

Largest Basin 26% of landmass, 43% of population

Rich Biodiversity

Food and Water Security

Gangatva: Special qualities

Science and Faith

‘River from the Sky’

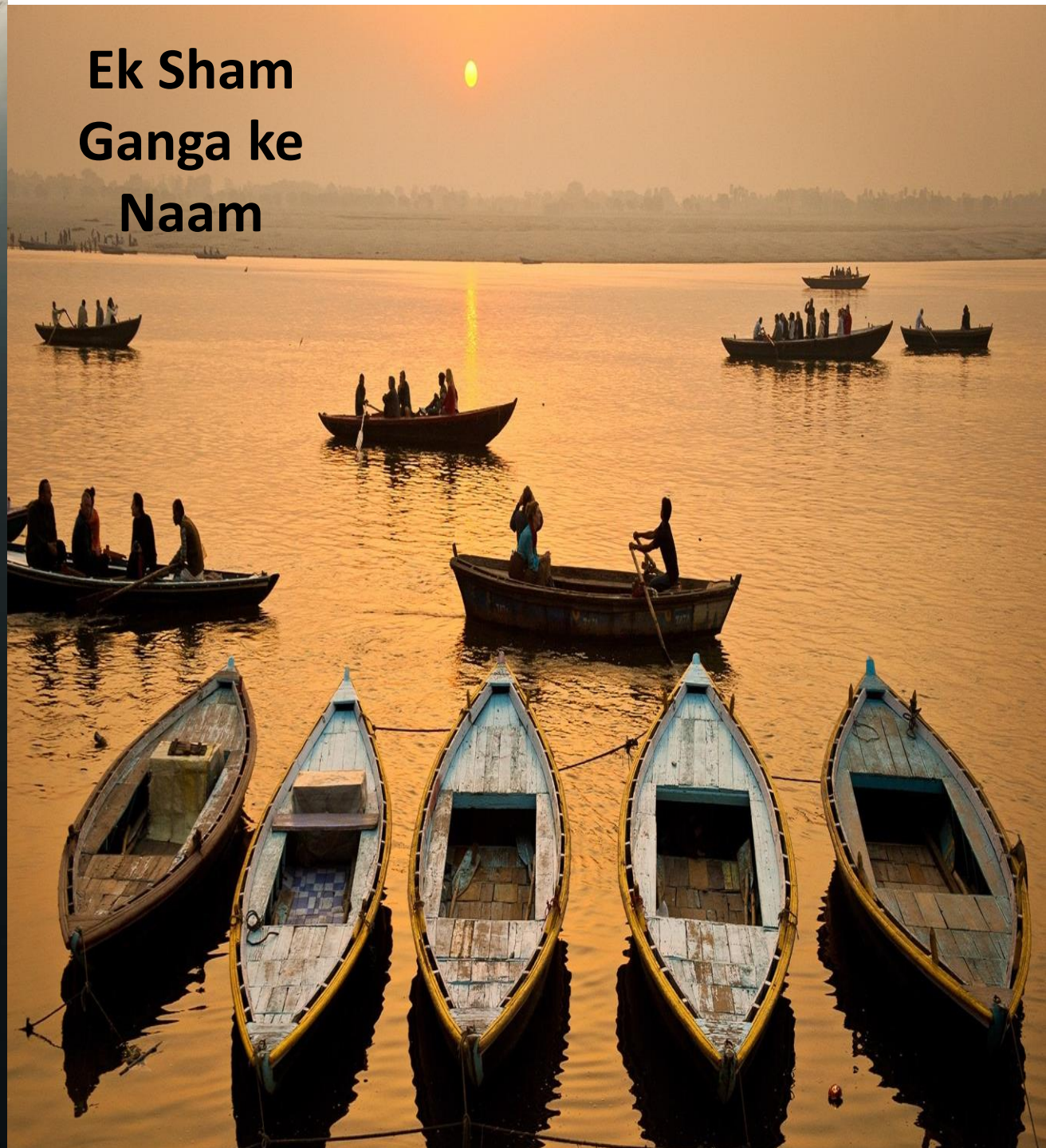
**Birth of Ma Ganga on the snow
capped Gaumukh Mountains**

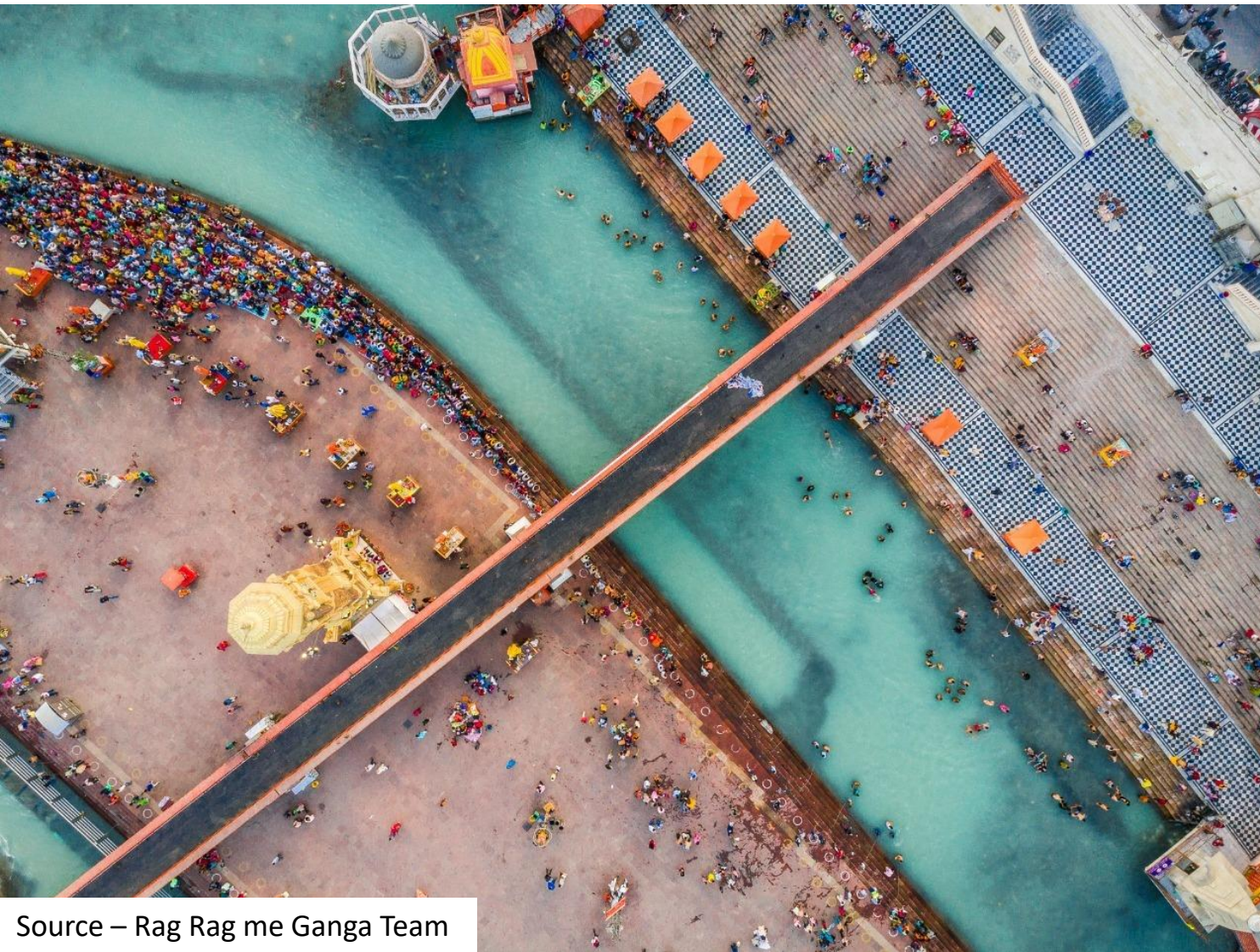


**The curls and colors of
the divine: Ganga
landscape**



**Ek Sham
Ganga ke
Naam**





God's view of Ganga : Aerial landscape at Haridwar

Source – Rag Rag me Ganga Team

Enormity of Challenge: 'Wicked Problem'

- Size and Scope
- Ever-widening Gap of Clean Ganga Challenge
- Maintaining flow, Protecting Ecology
- Multiplicity of Stakeholders –Whose River?
- Governance challenges
- Capacity Constraints
- Looking Back for Lessons ---GRBMP
- Unpredictability of problem

Institutional Aspects : Start Up Journey

- Building the Institution
- Putting a strategy in place
- Crisis leading to bold decisions
- Evolving Institution, Evolving Mission Contours
- Authority Notification, 2016
- Mandate to Function holistically, NMCG empowered
- 5 Tier Structure- National Ganga Council (PM) to District Ganga Council (DGC)

**Pollution
Abatement
Nirmal
Ganga**

**Ecology
and
Flow
Aviral
Ganga**

**People
River
Connect
Jan
Ganga**

**Research,
Policy and
Knowledge
Managemen
t
Gyan Ganga**

Evidence Based Planning

Policy Formation

Implementation of Policy

More than 330 projects sanctioned at the cost of more than 29,000 crore (\$4 Billion)

Making Nirmal Ganga Possible

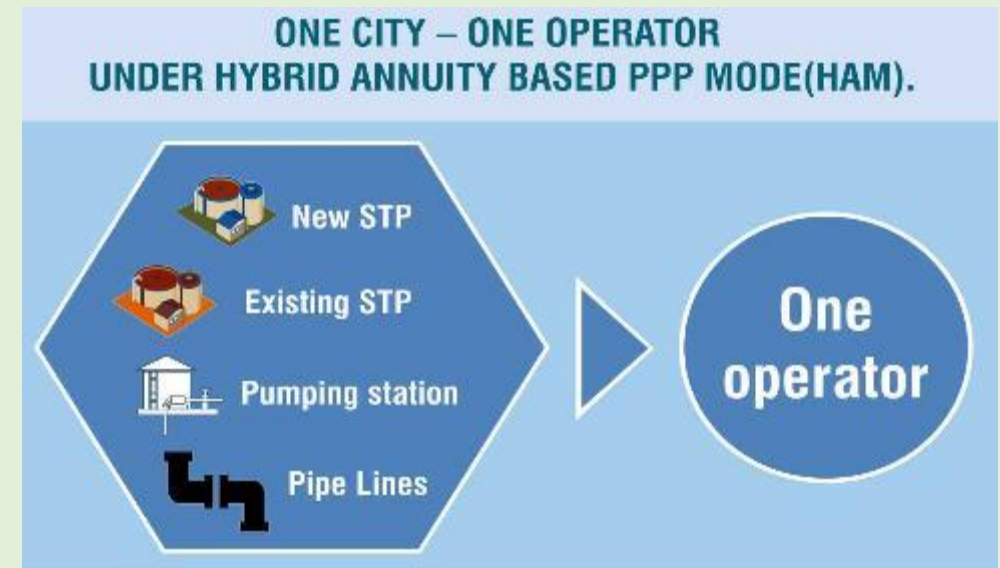
- Comprehensive Plan –Ganga Towns Condition Assessment
- Rural Areas too- Ganga Grams
- Industrial Pollution Abatement
- Non Point Source Pollution-ODF, Organic Farming etc.
- Construction to Performance –Long Term O&M, HAM PPP
- Improve Governance – One City One Operator Model
- Reuse of Treated Waste Water....Market for Water?
- River Centric Approach to Urban Planning

Hybrid Annuity Based Public Private Partnership (PPP) Model for Creation of Sewage Treatment Infrastructure

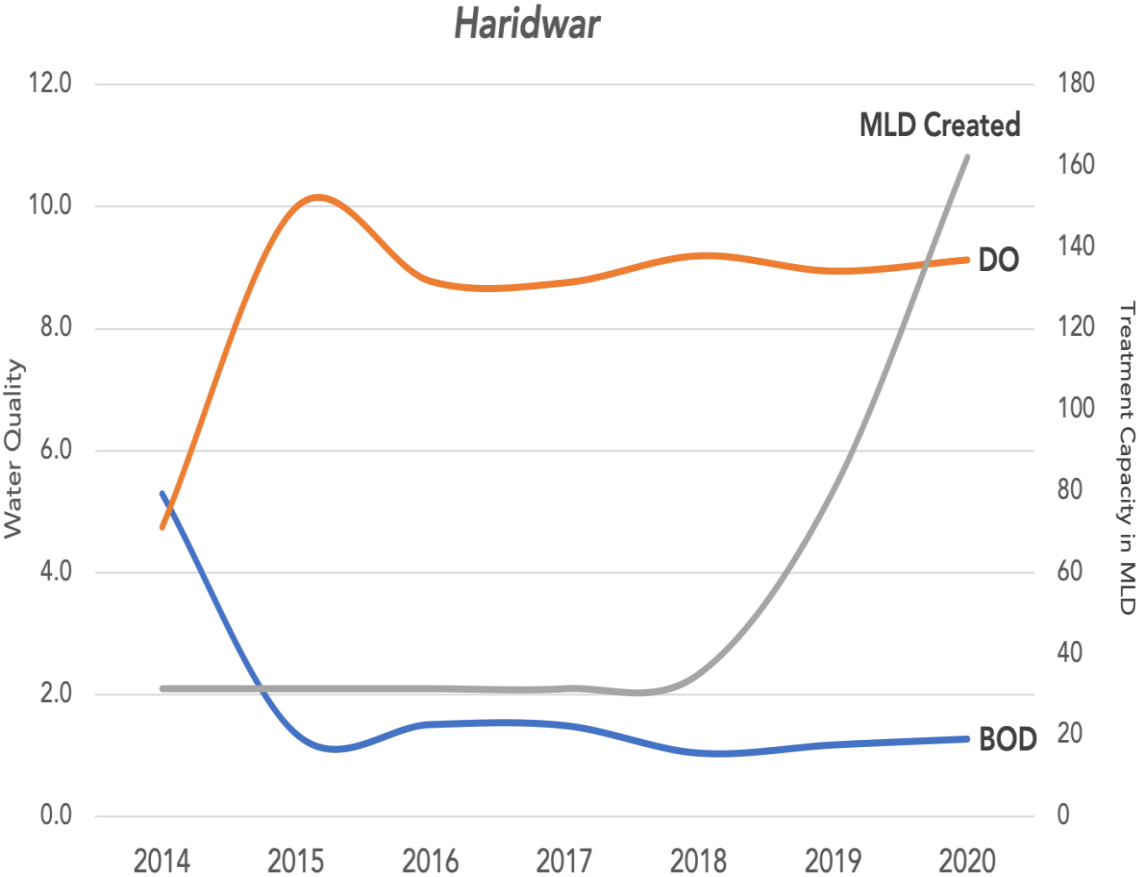
- Learning from past – Hybrid Annuity Model (HAM) introduced for long term satisfactory performance
- Construction linked payments – 40% of capital cost
- Performance linked payments – 15 Years (60% quarterly Capex Annuity with Interest with additional O&M payments)

One City One Operator

- Paradigm shift in the sector – one stop solution for sewage treatment in the entire city
- Integration of new and existing sewage treatment infrastructure under HAM



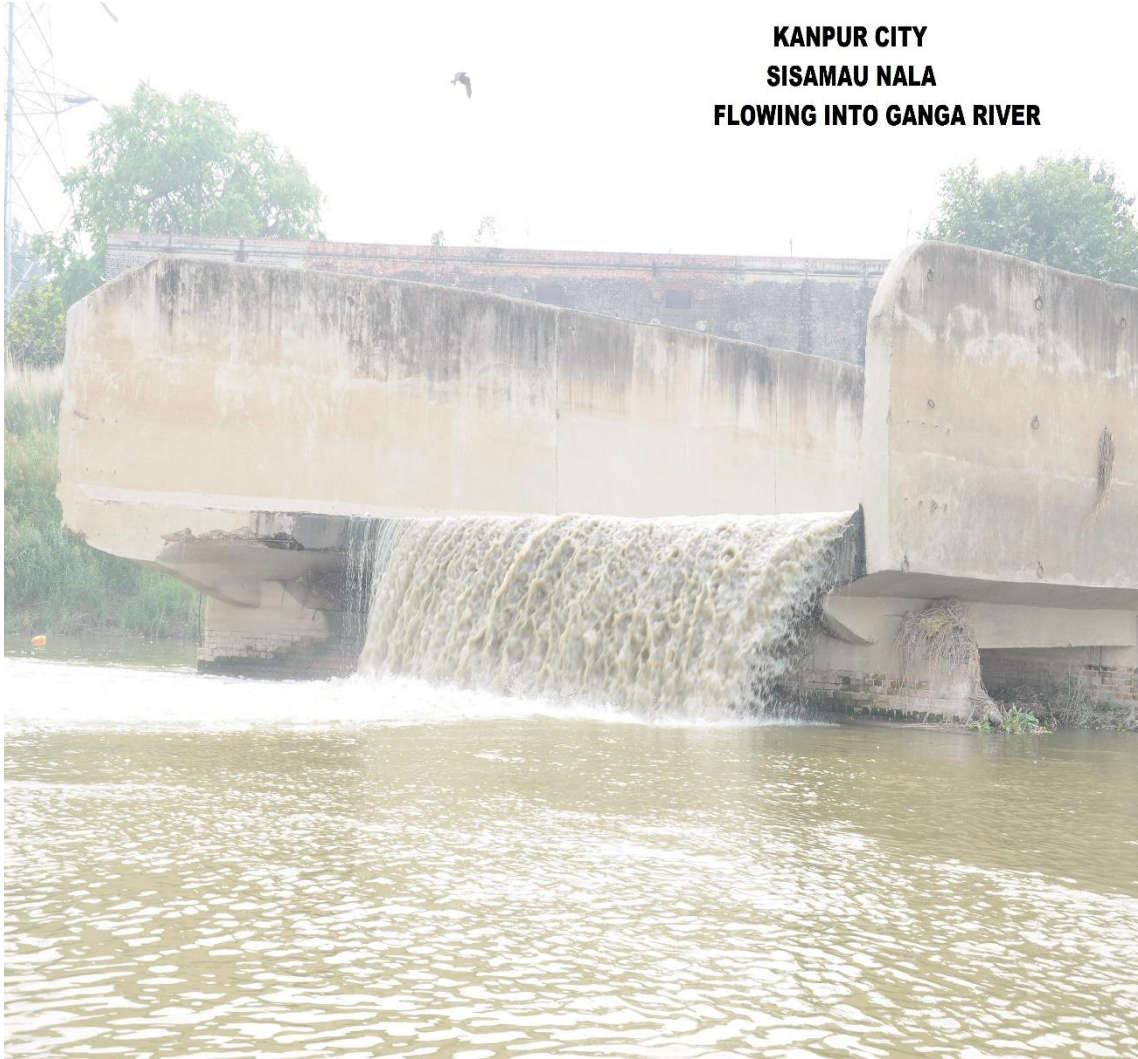
Making Nirmal Ganga Possible: 68 MLD STP at Jagjeetpur, Haridwar; 1st project under HAM PPP



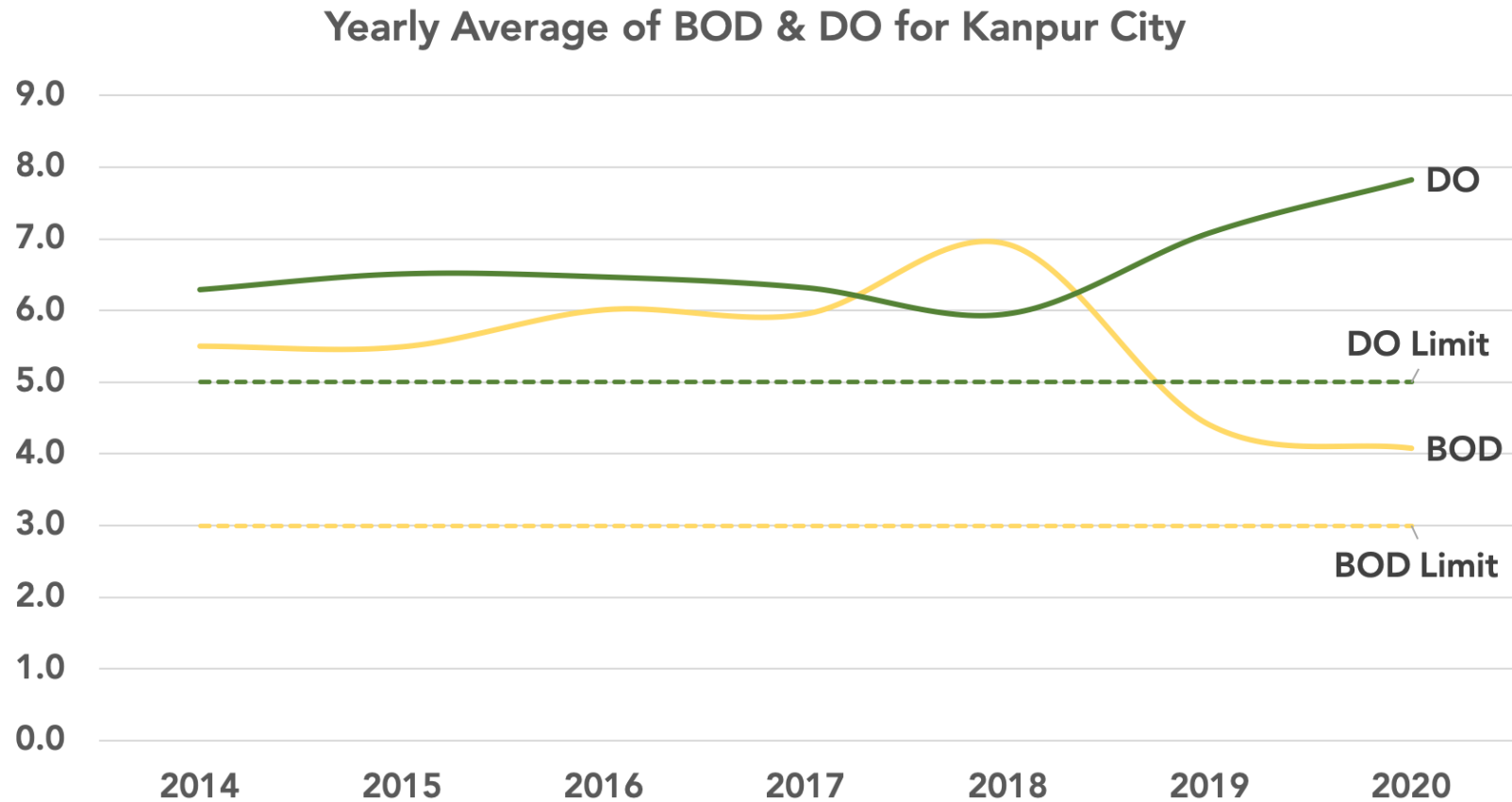
Making Nirmal Ganga Possible: Innovative Design, Technology and Resolve to Solve Problem 7.5 MLD STP at Muni ki Reti, Rishikesh; First 4 story STP



Making Nirmal Ganga Possible: Rebuilding Kanpur for Ma Ganga- HAM, One City-One Operator, URMP, CETP, River Front.....



Making Nirmal Ganga Possible: Kanpur

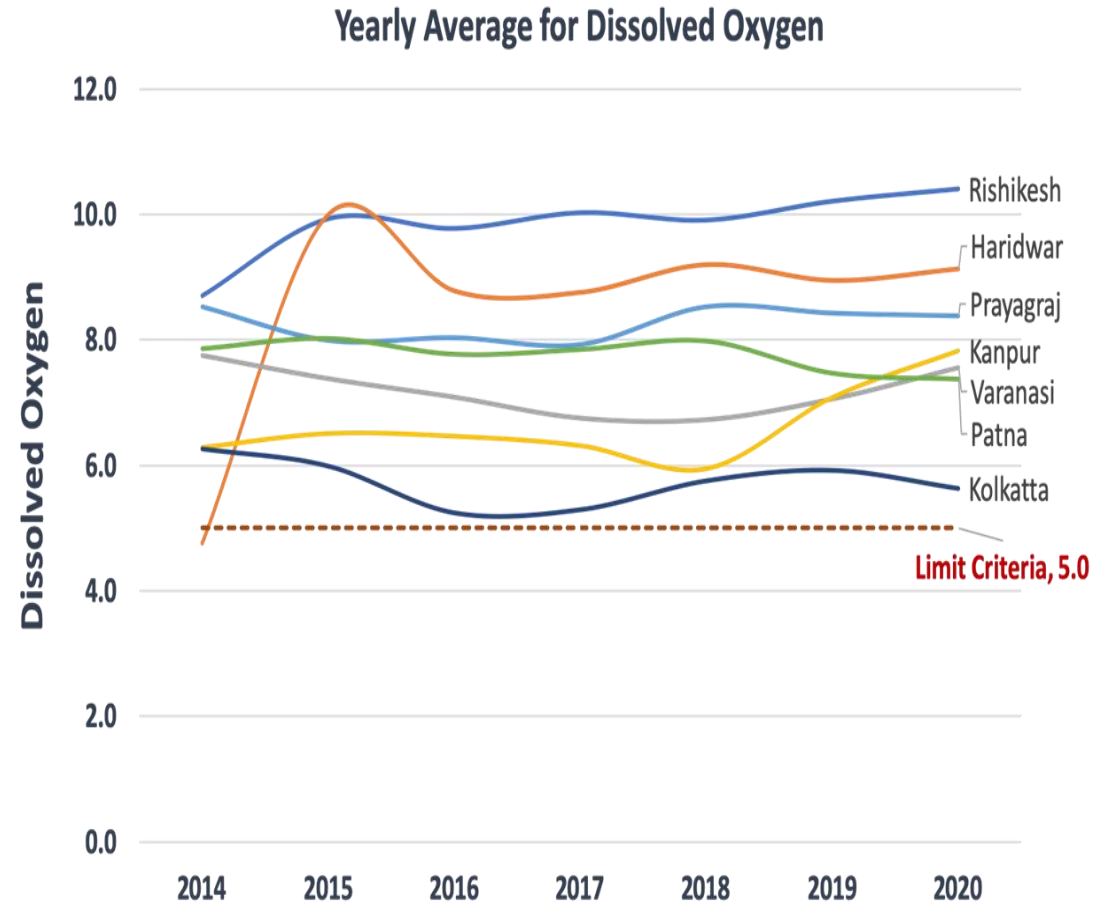
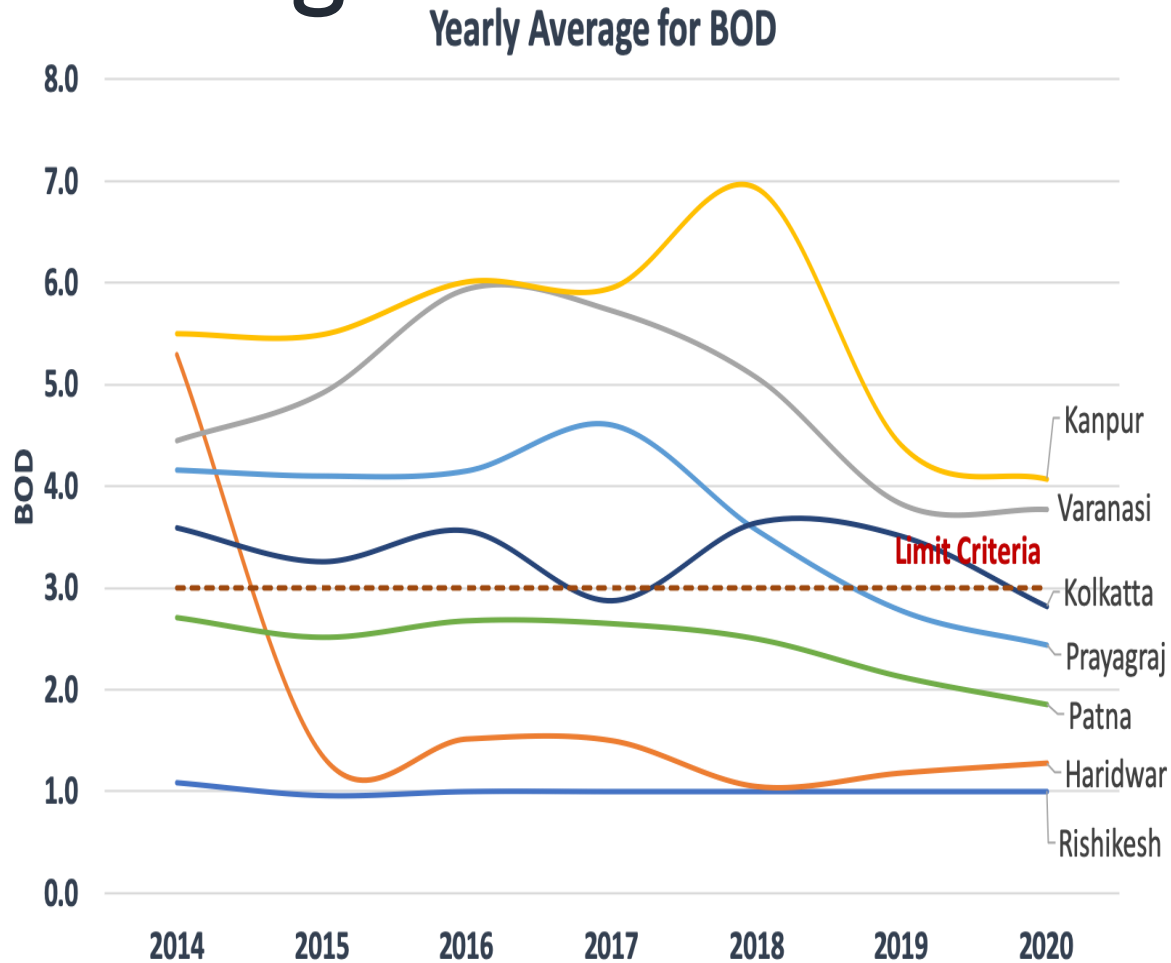


Prayagraj : Largest Ephemeral City; Citywide Sewerage Network, One City One Operator; HAM Kumbh 2019 a defining moment



Varanasi : The eternal existence with Ganga
140 MLD STP at Dinapur, Varanasi; Modern, Self-generating power for its
operation; Goitha 120 MLD, **Ramana 50 MLD (HAM)**

Making Nirmal Ganga Possible: Status Along Ganga



Sewage Treatment Capacity on Ganga Main Stem

Year 2014



Estimated Sewage Generation – 2953 MLD

(Capacity created during 1985-2014 under different program)

- Existing Functional Capacity
- Existing Non-functional Capacity
- Gap

Year 2021

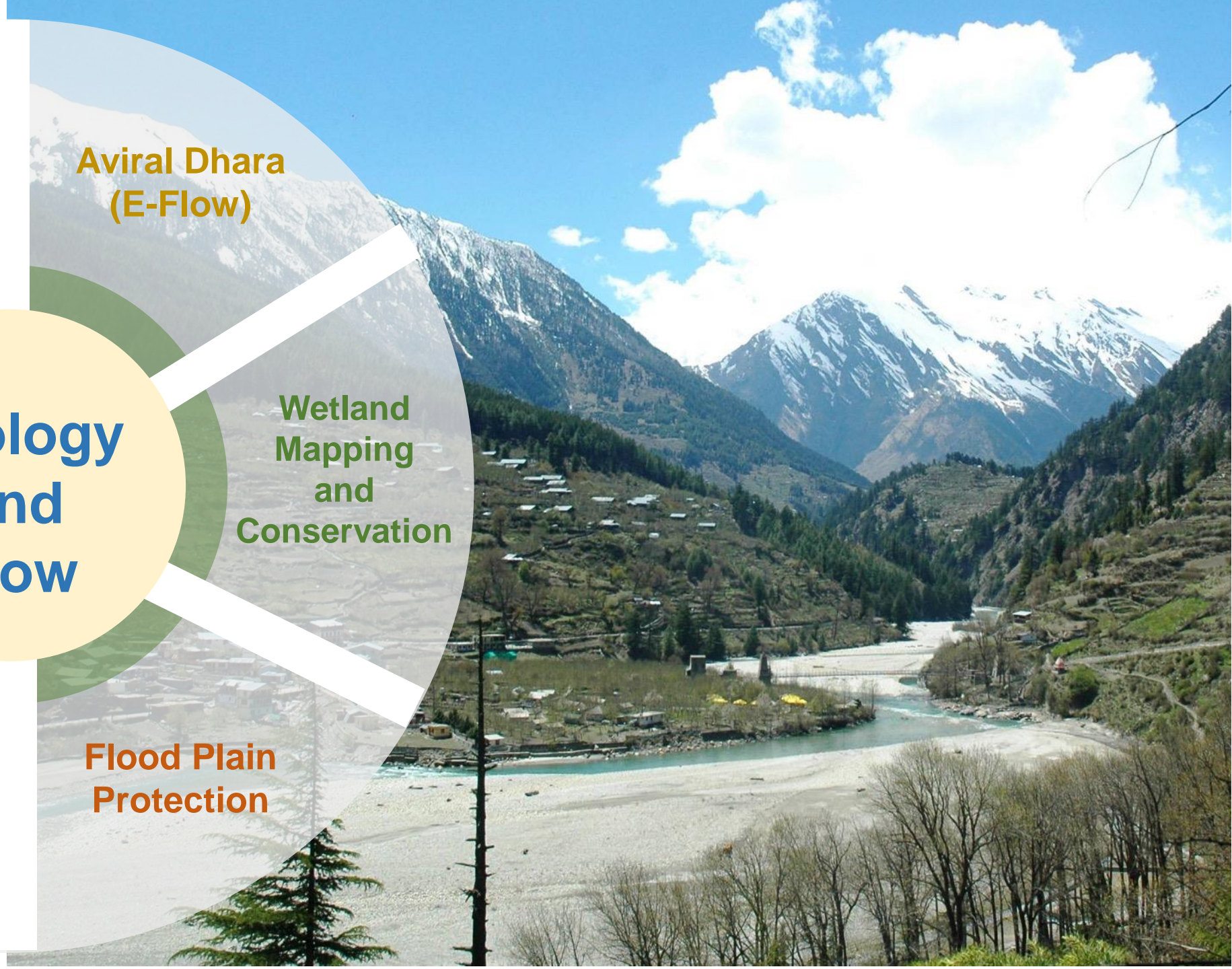
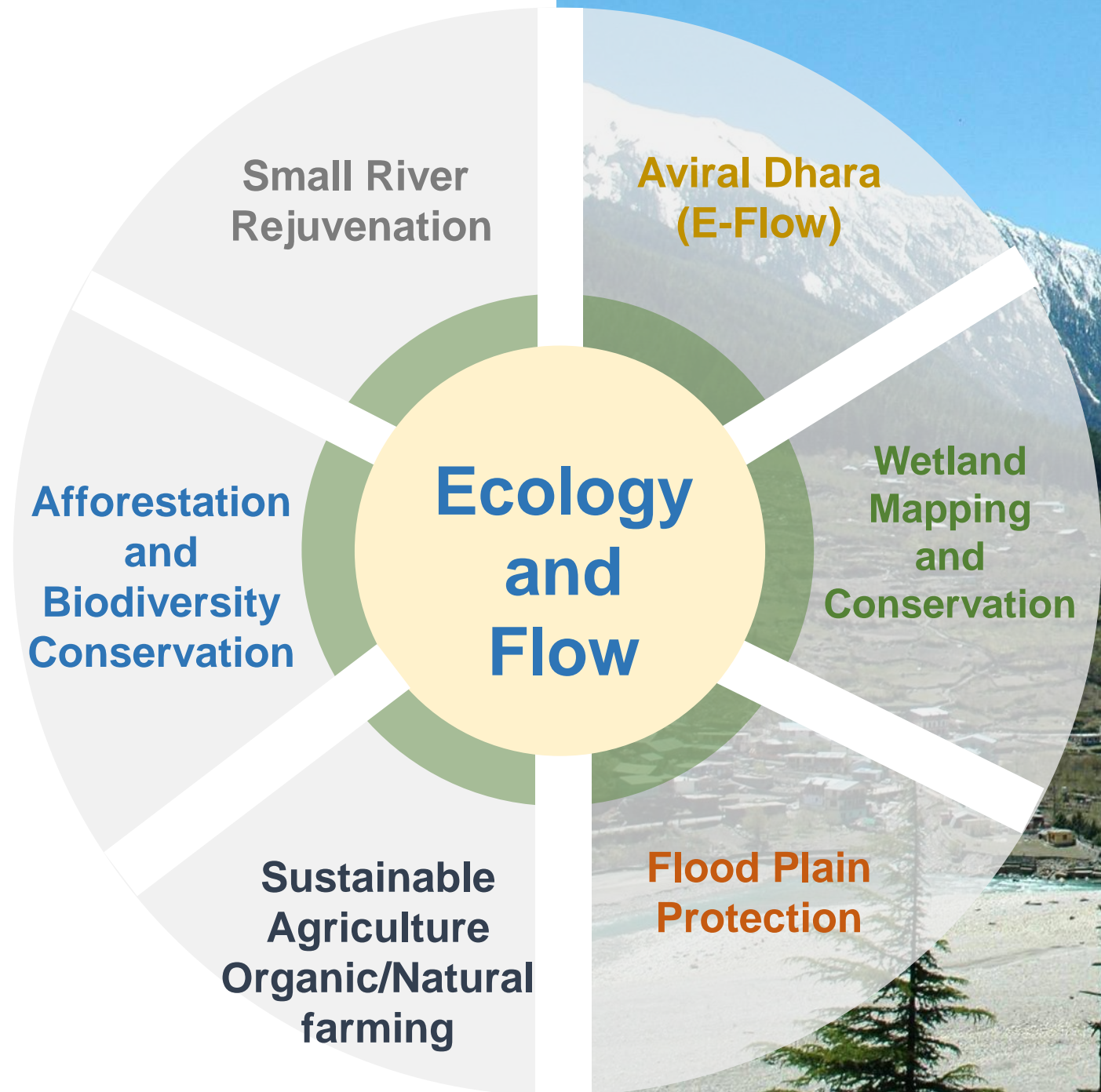


Estimated Sewage Generation – 3148 MLD

Total Capacity Creation - 3363 MLD
(Including additional capacity to take care of future need)

- Capacity Created
- Capacity Under Creation

45 projects for 13 Major Tributaries under progress to create treatment capacity of more than 2800 MLD



River for Everyone: We too love Ganga!



Special Challenges and Opportunities

Bihar : Urban Renewal through Namami Gange,

- Makeover at the River's Edge, Trigger for 'Project Dolphin' and Biodiversity hotspots



Jharkhand: 'Small is Beautiful' – Ganga Towns and Villages comprehensive cover, Biodiversity and public Connect

Unique Threats and Hope

West Bengal:

- Unique history, Rivers, tributaries & waterbodies—challenges and future proofing-unique East Kolkata Wetlands, cluster of cities along Ganga, development of Port and Farakka Barrage, Hilsa Migration...
- **Sundarbans:** In the Crosshairs of an Impending Calamity – Unique ecosystem of mangroves, Special traditions and delicate balance between humans and wildlife.

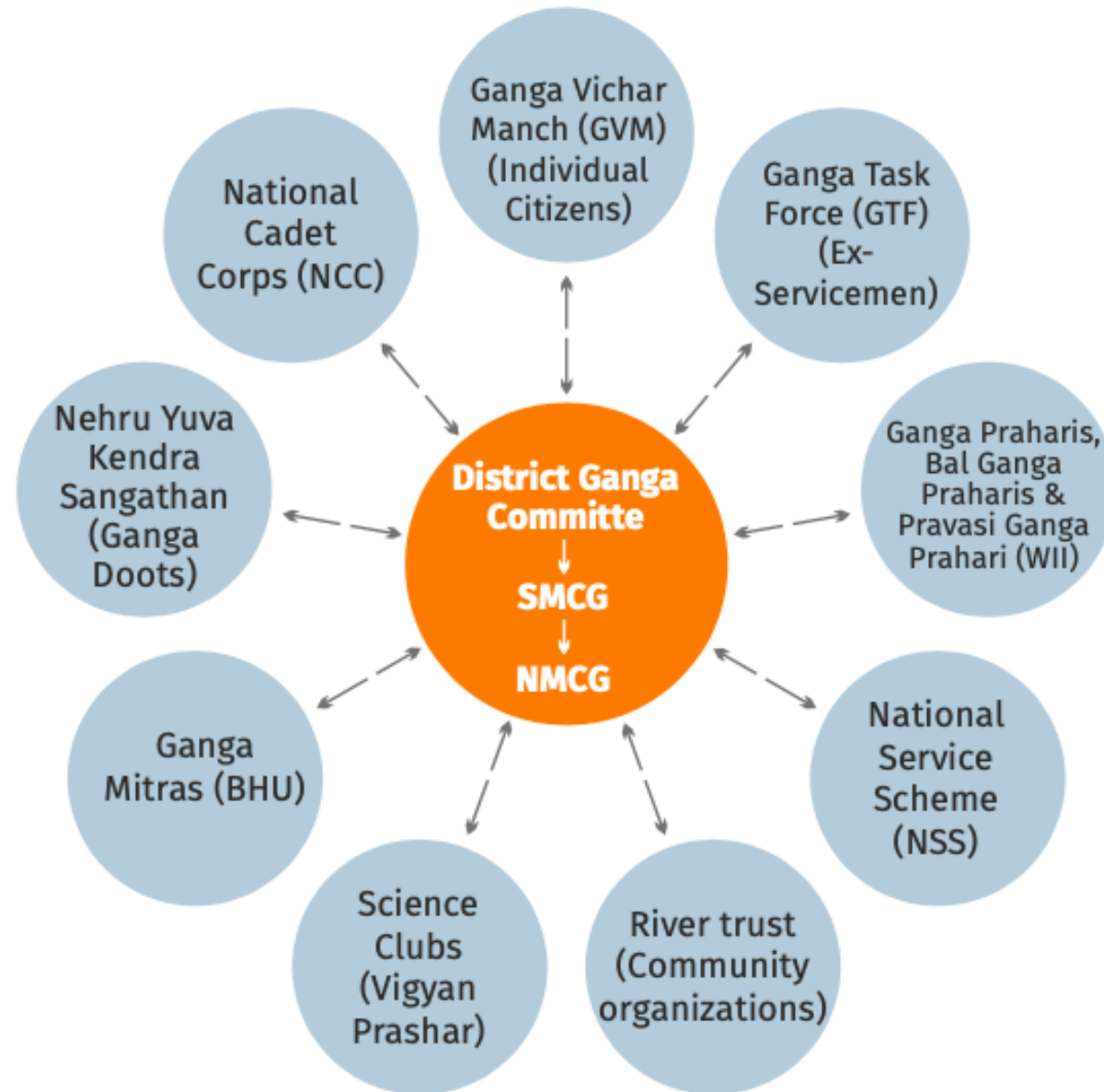
Rejuvenating Tributaries: Healing Ganga's Intricate Water Web

- Rejuvenation of tributaries has been an integral component of the Namami Gange programme
- Shift from 'flood control' to 'flood management'.
- Comparing Intrinsic water web of country with the anatomy of a human body - Managing the health of these smaller arteries and veins, the tributaries, are as important as that of the main Ganga.

People-River Connect

Who is the owner of Ganga

Continuous Learning
& Activity Portal
www.clap4ganga.com



Yearly Activities

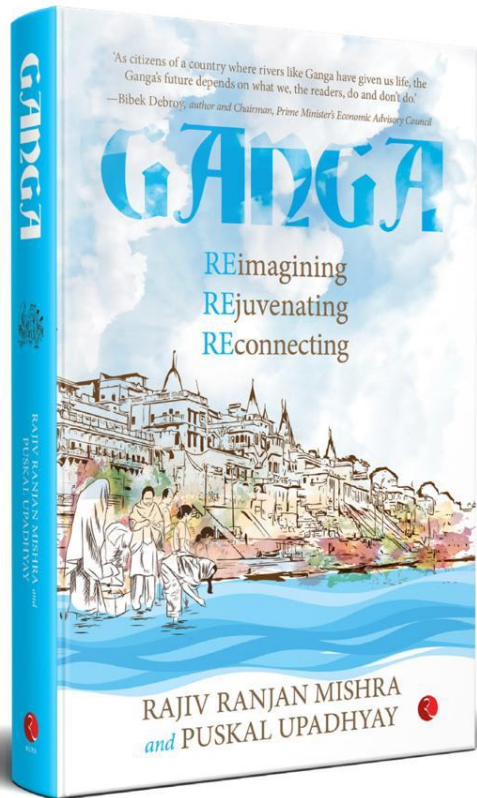
- *Ganga Quest*
- *Ganga Utsav*
- *Ganga Amantran (Rafting Expedition)*
- *Great Ganga Run*
- *Cleanathon*
- *Tree Plantation*

Saving the River for Eternity

- Understanding River holistically
- Paying for its own Upkeep
- Use, Reuse and Further Reuse: The endless cycle to save every drop
- Turning Waste into Wealth , Pricing of Water
- River Basin Organization
- River Sensitive Thinking , Riverine Culture and Respect for water
- Continuous Work, Learn from Traditions and modern Science

Ganga

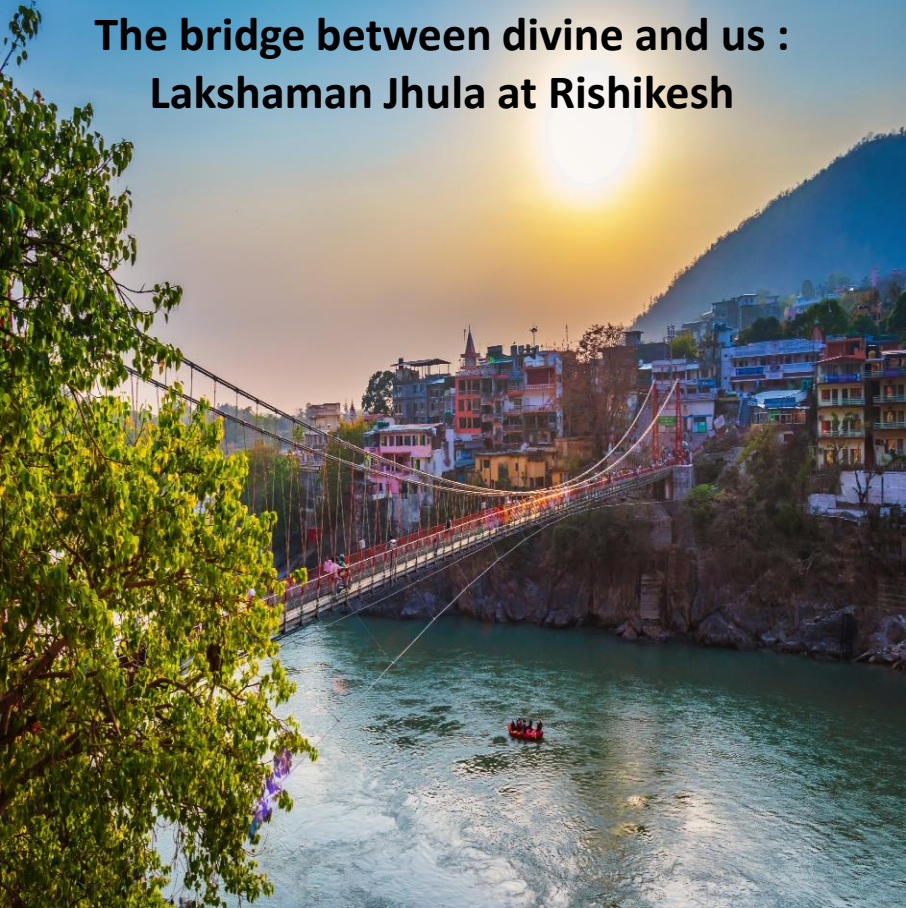
REimagining, REjuvenating, REconnecting



- “But the most important lesson that the river teaches you is that if you don't disturb, pollute, defile or obstruct its path, it will always remain pure, it will then bring all the goodness of nature and help you live a happy, healthy and prosperous life. This cannot be too much to ask for.”
- “We need to come together and unify to save the greatest gift of nature to India and to entire humanity for posterity. In fact, We have no choice but to do so.”



The bridge between divine and us :
Lakshaman Jhula at Rishikesh



Thank You



Circle of life: meeting point of Ganga and the Ocean
at Gangasagar