

Restoring free flowing rivers for humans and biodiversity: synergies with the WFD

Experience from Ganga River Basin

Support to Ganga Rejuvenation(SGR) & India EU Water Partnership
(Implemented by GIZ for BMZ, Germany & EU delegation to India)

22 May 2025 | EU INBO | Parma, Italy

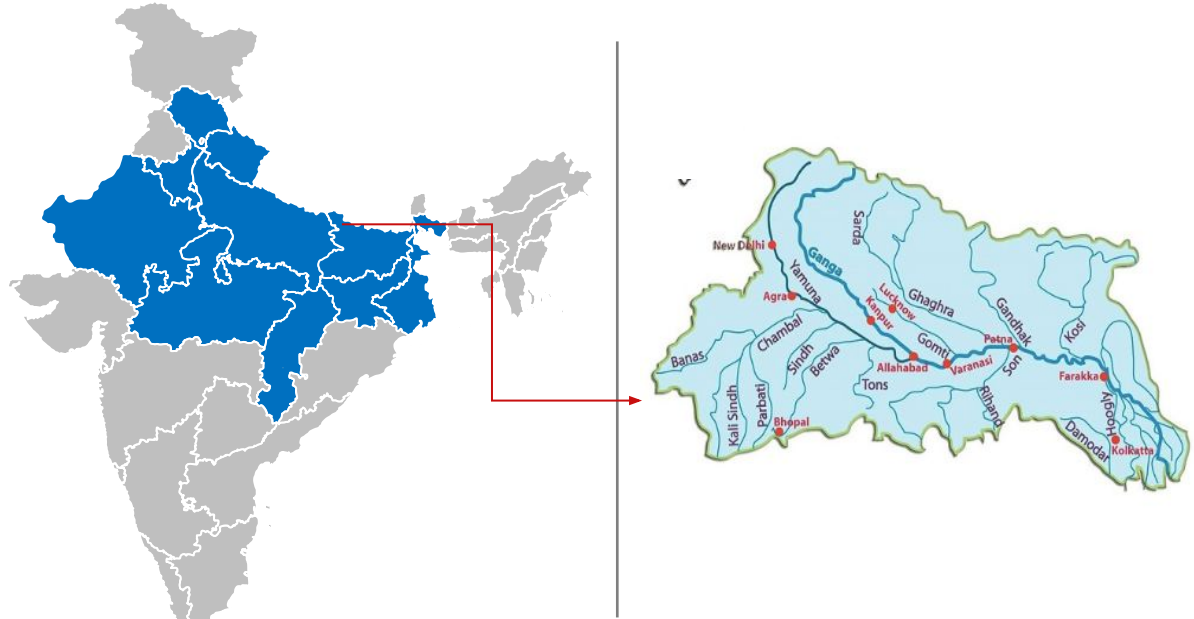


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- 2525 Km, Several major Rivers as Tributaries
- 860,000 Square Kms basin
- 11 Basin States
- More than 500 million people
- 260 Districts
- 1000 plus cities/towns
- 10,000 villages
- 28% of Water Resources
- 43% of the population
- 26% Land Area
- Making fertile 57% of Agricultural land
- Habitat for 143 different freshwater species, Gangetic Dolphin, Rich Forests

Ganga – the lifeline of India



Key Map: Ganga Basin

**More than a River, Lifeline
Food and Water Security**



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National Efforts to Rejuvenate River Ganga

A Shift Towards Integrated Basin Based Approach

1985

GAP-I (Ganga Action Plan)

- Focus on Main stem of River Ganga
- 25 Towns Covered
- 260 schemes

1993

GAP-II (Ganga Action Plan)

- Extended from GAP I in 1993
- Merged with NRCP in 1996
- Included - Yamuna, Gomti, Damodar & Mahananda

1995

NRCP (National River Conservation Plan)

- 41 major Rivers of the country
- 8 Ganga basin rivers viz Ganga, Yamuna, Gomti, Damodar Mahananda, Betwa, Mandakini, Ramganga

2009

NGRBA

(National Ganga River Basin Authority)

- Separate Authority for Ganga in 2009
- Chaired by Prime Minister of India
- 2011 World Bank assisted Ganga Basin Project, NMCG, State missions
- NMCG (National Mission for Clean Ganga) implementing body at center

2008

2015

Namami Gange Mission

- Integrated conservation mission
- Basin approach
- All tributaries included

2011

2016

Authority

Notification

2018

E flow

notification

2021

Namami Gange
II

RBM Planning
Cycle Approach
SGR

NMCG:
Implementing
Agency, Dedicated
institution,
Financial and
Political support
Regulatory Role
Empowered

Source: NGP at Glance, 2021



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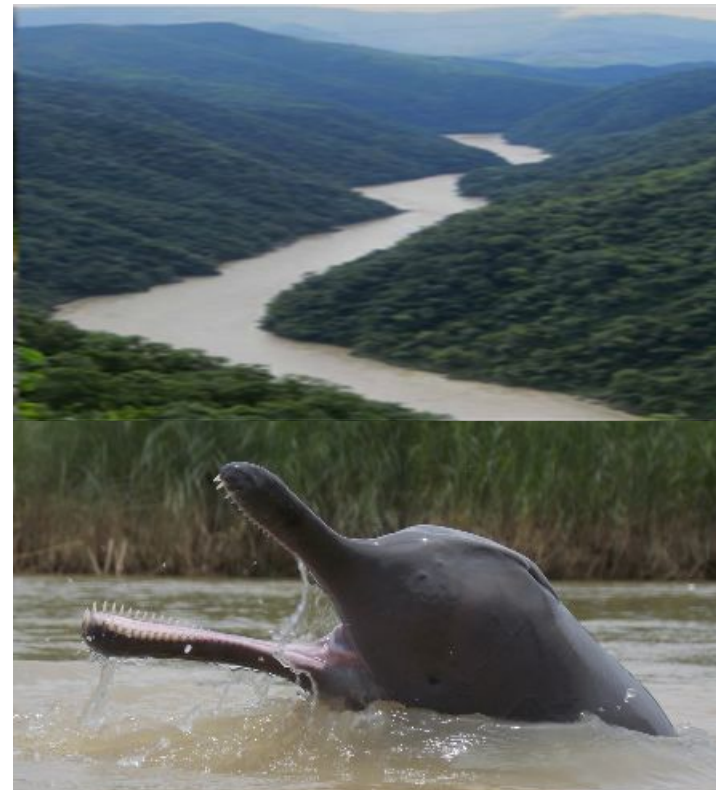
Namami Gange Mission



- **A mission to restore wholesomeness of River Ganga**
- **Strategic Areas of Interventions :**
 - ***Pollution Abatement (Nirmal Ganga)***
 - ***Improving Ecology & Flow (Aviral Ganga)***
 - ***Strengthening People River connect (Jan Ganga)***
 - ***Research, Knowledge Co-creation (Gyan Ganga)***
 - ***Livelihood and Conservation (Arth Ganga)***

Aviral Ganga : Improving Flow and Ecological Restoration

- **Environmental Flow: determination and Implementation**
- **Lateral, Longitudinal and Vertical connectivity**
- **Conservation of Wetlands & Springs**
- **Floodplain protection , Aquifer recharge**
- **Scientific Afforestation**
- **Biodiversity Conservation**
- **Sustainable Agriculture, Water Use Efficiency**



Gangetic Dolphin- National Aquatic Animal
Project Dolphin



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Global Recognitions



**Namami
Gange**
India

Recognised as one of top 10
world restoration Flagships
during 2022 UN Conference on
Biological diversity (COP 15)

Reviving a river for
520 million people



UNITED NATIONS DECADE ON
**ECOSYSTEM
RESTORATION**
2021-2030



Asian Academy
Creative Awards in 3
categories in 2022-

- Best Documentary
- Best Current Affairs
- Best Natural History or Wildlife Programme

In 2020, Namami Gange Programme was included as a category under “The Prime Minister’s Awards for Excellence in Public Administration”. One award was to be given to one of the 57 District Ganga Committees (DGCs) under the Mission.



NMCG awarded as **Public Water
Agency of the Year** in 2019 in
GWS, London

Authority Orders/Gazette (AO) 2016 (Notified under Environment Protection Act)

- **High level Policy Framework** laying down Principles for River Rejuvenation, Basin based Management & Institutional Strengthening making **NMCG** an empowered institution
- An important Principle is maintaining Longitudinal, lateral and vertical connectivity
- NMCG given Developmental and Regulatory roles and to develop into an RBO
- Mandated to make or **cause to make the River Ganga Basin Management Plan** (cost, timelines, responsibilities) and also determine the magnitude of **Ecological Flows** .
- NMCG empowered to **issue directions, and give prior approvals for engineering diversions, jetties etc**
- **Constitute** one or more **River Ganga Management Committees** and oversee execution of plans and programmes of **District Ganga Committees** (DGCs)
- **Preparation & Monitoring District Ganga Plans (DGPs) – Leverage Administrative Boundaries.**

SGR analysis for NMCG's Organisation Structure :

- **Establishment of a River Basin Management Unit (RBM-U)**
- **Establishment of Thematic Expert Groups**
- **Ensure synergies** in different level of **River Centric Planning**

RIVER BASIN PLANNING AND MANAGEMENT

The cycle repeats
periodically – plan is
reviewed and updated
every cycle

RBM Cycle
approach
(built on **EU Water
Framework
Directive**)

Adapted to Indian context



**Tapi RBM Plan
Ramganga RBM Plan
Barak RBM pLAN**

RBM Cycle trainings

District Ganga Plans

RBM Toolbox

**URBAN RIVER
MANAGEMENT PLANS
(URMPs)**



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Ramganga River Basin Management Plan



Data collection
Field Visits- Ground Truthing
Basin Characterisation
Setting Vision & Management
Objectives for each KWMLs
Co-development & Documentation
Defining Methodologies & criteria for
Risk Assessment

Key Water Management Issues (KWMLs)

- **Water quality** deterioration at point source & due to non-point sources including agriculture activity
- Alteration in river **hydrology and water quantity**
- Alteration in **groundwater** regime impacting on sub-surface flow
- **Flood risk** due to sand mining and encroachment



Ramganga River Basin Management (RBM) Plan

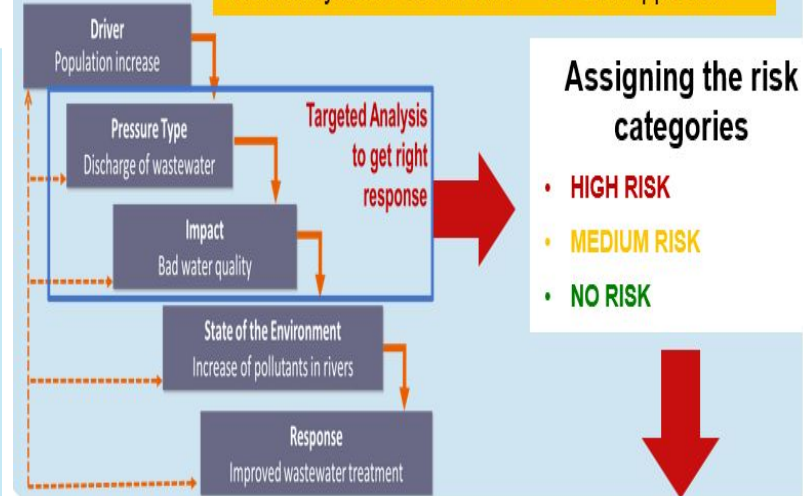
October, 2023



Additionally a report on Ramganga SWAT modelling

The Plan adopted by National Committee on 13th Oct 2023 and is being implemented

Risk Analysis for each KWML – DPSIR Approach



Programme of Measures (PoM)

- Implementable actions to achieve vision and management objectives
- Covers legal, technical, financial, capacity building, research related interventions
- Possible mechanism for convergence with existing schemes/missions

Approach for E-Flows

Biodiversity centric
E-flows
Assessment
methodology

Field Visits and
Hands-on trainings

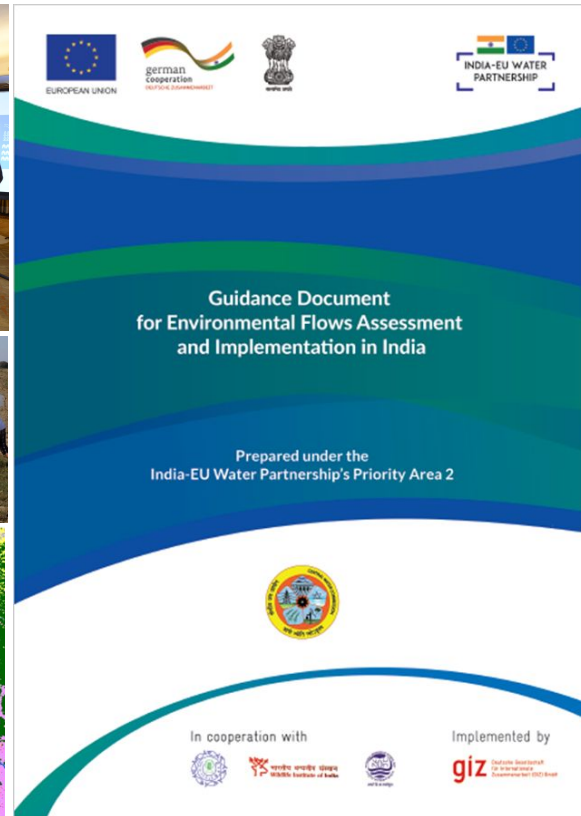
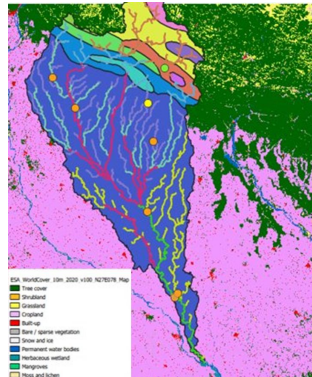
GIS-based
zonation of basin

Habitat Modelling

Aerial Mapping of
river sites

Multidisciplinary
Expert Group

Stakeholder
Consultation
process to agree
on measures to
maintain adequate
E-flows in the
Ramganga Basin



Synergies between different levels of river centric planning

River Basin Management Plans

District Ganga Plans- 4 Plans, Model Plan, Phased wise Scaling (42 in progress presently, more in pipeline)

Urban River Management Plans



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Design/layout: Adapted template of the GIZ

Thank you

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