Tour Report- Rejuvenation of Karnavati River in Prayagraj, Uttar Pradesh

Date – 30.07.2025 to 01.08.2025

Site Visit/ Trip Title	Proposal for rejuvenation of the Karnavati River in Prayagraj district, UP	**Location**	Prayagraj, UP
Date/Time:	30.07.2025 to 01.08.2025		

#	**Agenda items for the site visit/trip**
	1. To explore the possibility of providing technical support from NMCG to the local administration in their submitted proposal for proposal the rejuvenation of the Karnavati River in Prayagraj district, UP

Site Visit / Trip Attendees		
#	**Organization**	**Name**
1	NMCG	Dr. Kriti Varma, Project Officer
2	PMC	Mr. Harish Kumar Mahavar (Small River Rejuvenation Expert)
3	PMC	Mr. Pankaj Rawat, Support Engineer

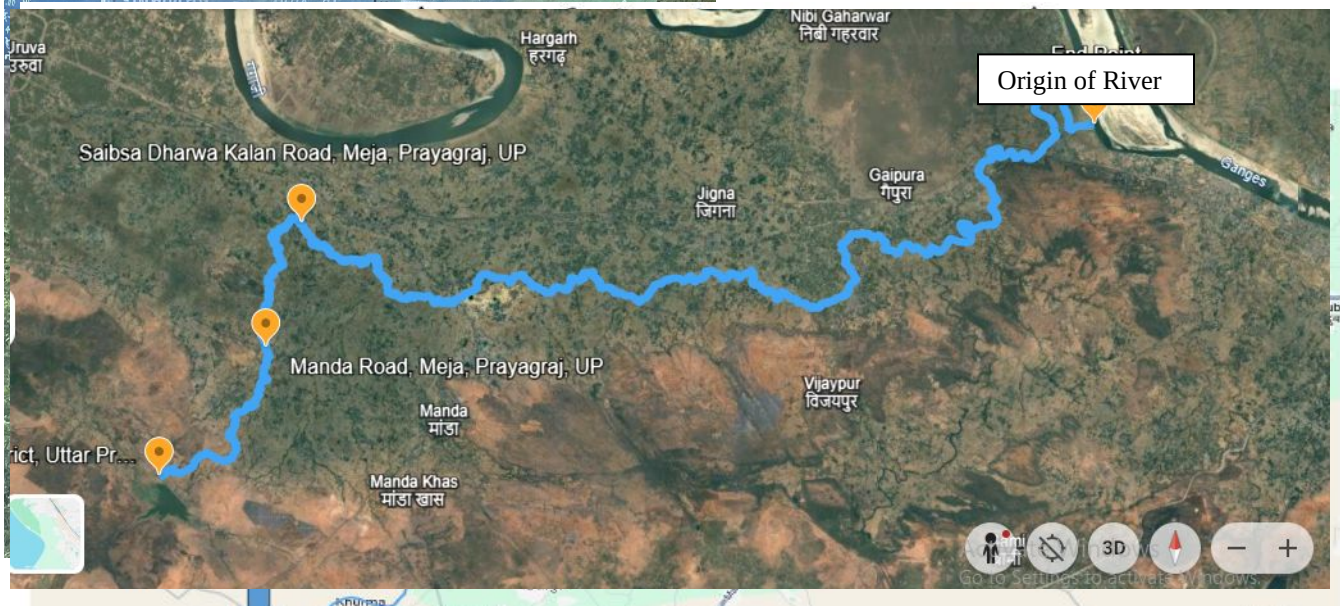
1 Introduction

1.1 Background and purpose of the visit

As per the direction of the Executive Director (Projects), the Small River Rejuvenation team and RFD team visited the Karnavati River at Prayagraj for the rejuvenation of the river and meeting with concerned officials from the State Government.

The Small River Rejuvenation (SRR) & RFD Team of NMCG proceeded for the site visit and with the Local Administration to understand the submitted project proposal & visit the project locations, check feasibility of projects & discuss the project issues and suggest an Action Plan in the above-mentioned matters. SRR & RFD team visited the following sites:

1. The origin of the River (Gularia Dam) in Meja, Prayagraj District, Uttar Pradesh.
2. Manda Road, Meja, Prayagraj, UP
3. Saibsa Dharwa Kalan Road, Meja, Prayagraj, UP



1.2 Key officials met during the site visit

Flood Works Division, Prayagraj, Irrigation & Water Resources Department

1. Digvijay Narain Shukla, Executive Engineer 8299142107
2. Nitish Chitransh, Assistant Engineer 7905211557
3. Hargovind Singh, Junior Engineer 8299224645
4. Madan Chaurasia, Junior Engineer 9454442369
5. Sanjay Chaudhary, Junior Engineer 8299324768

2 Overview of the site visit/trip

2.1 Details of visit- Agenda

ED, Projects, NMCG directed the Small River Rejuvenation (SRR) team to visit the proposed sites to view the current situation of river, feasibility of the project and understand the need of the project.

2.2 Key Observations during the visit & report

1. River Karnavati, a tributary of Ganga, originates from Gularia Dam, Meja Khas in Prayagraj and enters Mirzapur district at village Tiwaripur. Karnwati passes through 19 Gram Panchayats in Mirzapur, covering distance of 24 kilometers before merging into Ganga near Akodhi village.

2. Originating from Manda, the ashram of sage Mandav, and being the basis of life in the vast Vindhya region for centuries, the rain-fed Karnavati river in the Vindhya mountain range, about 62 km from Prayagraj, is in urgent need of revival after being neglected for the past decades. Sage Mandav is believed to have lived in the Vindhya mountain range and performed penance on the banks of Karnavati. This river, a centre of faith across the Yamuna, joins the Ganga near Gaipura in Vindhyachal, 50 km from the Vindhya plateau region. Although it is a seasonal river, it had water throughout the year due to its depth.

3. The river had reduced flow due to dried spring and groundwater extraction.

4. Solid waste in the river was found to be a major issue.

5. Some stretches were observed to be highly silted, and also encroachment on the river bank was evident at multiple sites causing the non-point source pollution.

6. The nearby villages Meja Khas (45184) and Manda Khas (45069), located near the origin of the river, are ODF panchayats. Similarly, Tiwaripur (79721) village in Mirzapur and Akhodi (79338) village, where the river merges with the Ganga, are also ODF panchayats.

2.2.1 Key Issues Identified

1. The Karnavati river, which originates from the Guleria dam in Prayagraj district and meets the Ganga river in Mirzapur district, and whose total length in Prayagraj district is 26.7 km, is currently facing reduced flow.

2. Agriculture is being carried out by filling up the river course at various places, due to which the path of the river has been blocked. As a result, it is necessary to bring back this life-giving river, which provides irrigation facilities through the check dams constructed on it, to its original form from the environmental point of view.

3. The total length of the river is 50.1 km (26.7 km in Prayagraj district and 23.4 km in Mirzapur), which was inspected on the spot by road from head to tail, in our joint site visit from 30.07.2025 to 01.08.2025.

4. In view of availability of sufficient water in the river, conservation of biodiversity, increase in water quality and prevention from encroachment, it is very important to rejuvenate the river by carrying out de-siltation related works as per requirement.

5. There is a lack of proper data availability. Topographic Map with watershed delineation and identification of drainage contributing to the river is required.

6. Hydrogeological study all along the river and its catchment area is required with monitoring station.

7. Village and town effluent and waste water are discharged into the river due to the absence of sewerage network. This needs to be treated before discharging into river system.

8. There is a point and non-point pollution in the river with prominent presence of solid waste that adds to the pollution.

9. Sedimentation during monsoon in the river bed needs to be assessed.

10. Local administration has done some conservation works like excavation & deepening of river land, free encroached river land, plantation and public awareness etc, but without proper river boundary delineation, catchment area treatment, discharge calculations & hydrological studies, achieving long-term results for river rejuvenation is difficult.

KM. 50.100	Head of Guleriya Dam	KM. 33.110	VRB Madoura Chauraha
KM. 44.165	Natural Drain	KM. 31.670	VRB Kunewara Ulda Road
KM. 43.860	Natural Drain	KM. 29.930	Natural Drain
KM. 43.350	Natural Drain	KM. 29.920	VRB Ulda Mahuwan Kala Road
KM. 42.750	DRB Manda Meja Road	KM. 29.450	Natural Drain
KM. 41.500	VRB UTI Jafra Road	KM. 28.250	VRB Rajapur Ratawal Mahuwaw Road
KM. 40.400	Jafra Bundh	KM. 27.240	Natural Drain
KM. 39.430	Bundh	KM. 27.140	Natural Drain
KM. 37.335	Natural Drain	KM. 27.000	DRB Manda Bharatganj Road
KM. 36.950	Uti Bundh	KM. 24.850	Bundh
KM. 36.330	Bundh	KM. 24.310	VRB Pahari Nath Temple
KM. 34.030	VRB	KM. 23.400	Junction Prayagraj Mirzapur

Permanent Structures & Natural Drains Details on the River Karnavati

2.2.2 Way forward

a) The origin of Karnavati River needs to be developed as a historical, religious, spiritual, cultural site with basic public amenities along with IEC activities involving training and awareness campaigns, cultural programs organized.

b) Nature-based Solutions (NbS), particularly constructed wetlands and SBT, may be implemented for treating the wastewater of Meja town with a population of around 10000 & generating sewage of 1.08 MLD from drains.

c) Green buffers along the riparian zone may be planted using native grasses to avoid the inflow of pollutants and silt from the embankments.

d) The source of the river is Gularia Dam. Water overflows from the outlet weir once the dam is filled, but it requires repairs.

e) Hydrogeological and Geophysical investigations and studies may be carried out to establish the aquifer system in the river basin.

f) Geographical survey of the whole river stretch is required so that the capacity or volume of water collected by the catchment area, design pond area, river cross sections and design their CD structures accordingly. Based on the analysis, the design of catchment area treatment to increase clean water inflow in river just like proper channelization, catch drains, silt traps etc.

g) Gated bunds/ gated regulator/check dams are required at regular intervals for maintaining base flow in the river at lean periods of rainfall and for groundwater recharge.

h) The Revenue Department & Local Administration need to identify, demark, and secure the river boundary through fencing or boundary wall to prevent future encroachment. This will also prevent animal & human accidents.

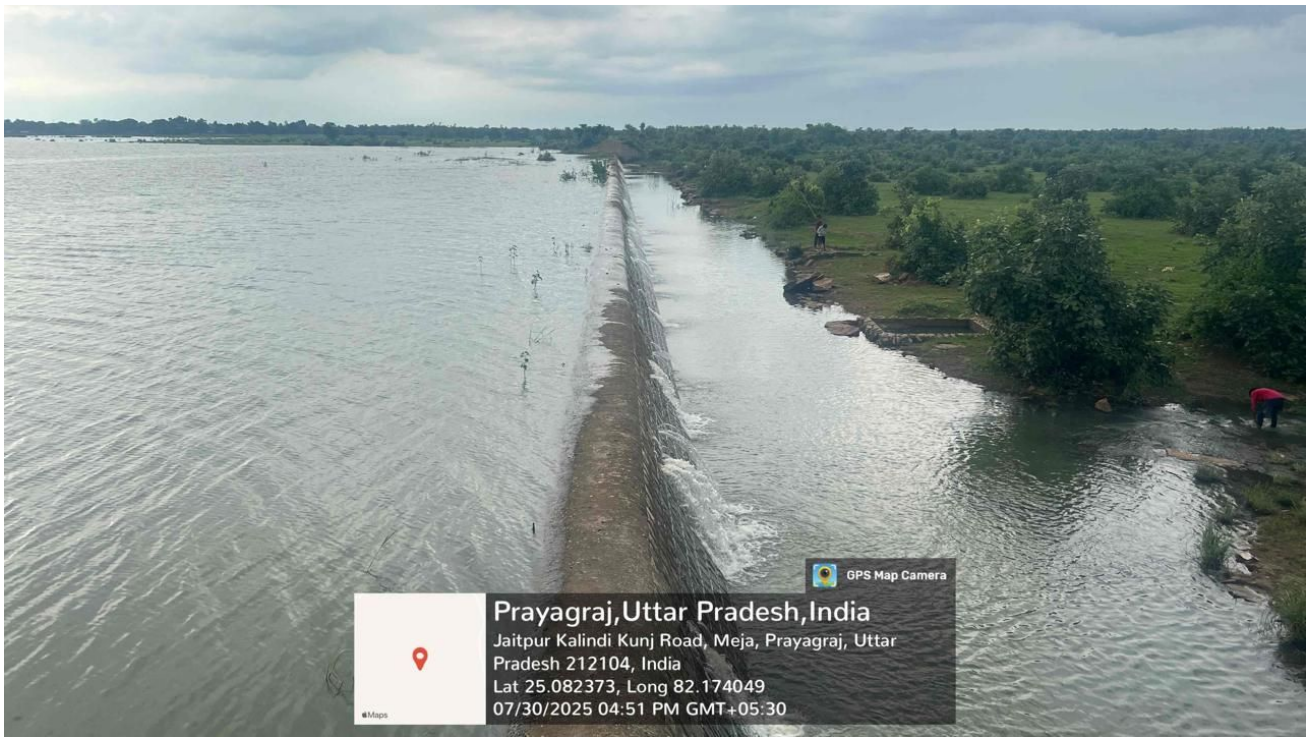
i) Increase the capacity of the river by deepening, excavation, de-weeding and de-silting. Provide embankment protection, strengthening the bank of river in mild slope to reduce scouring and accidents.

j) Village or town-level committees should take proactive and appropriate action along with mass awareness to ensure proper disposal of village sewage & solid waste. People's participation in river conservation has to be designed for long-term effectiveness.

k) Since river is small in nature & primarily seasonal, the lack of data availability requires a detailed scientific study & DPR preparation for further interventions.

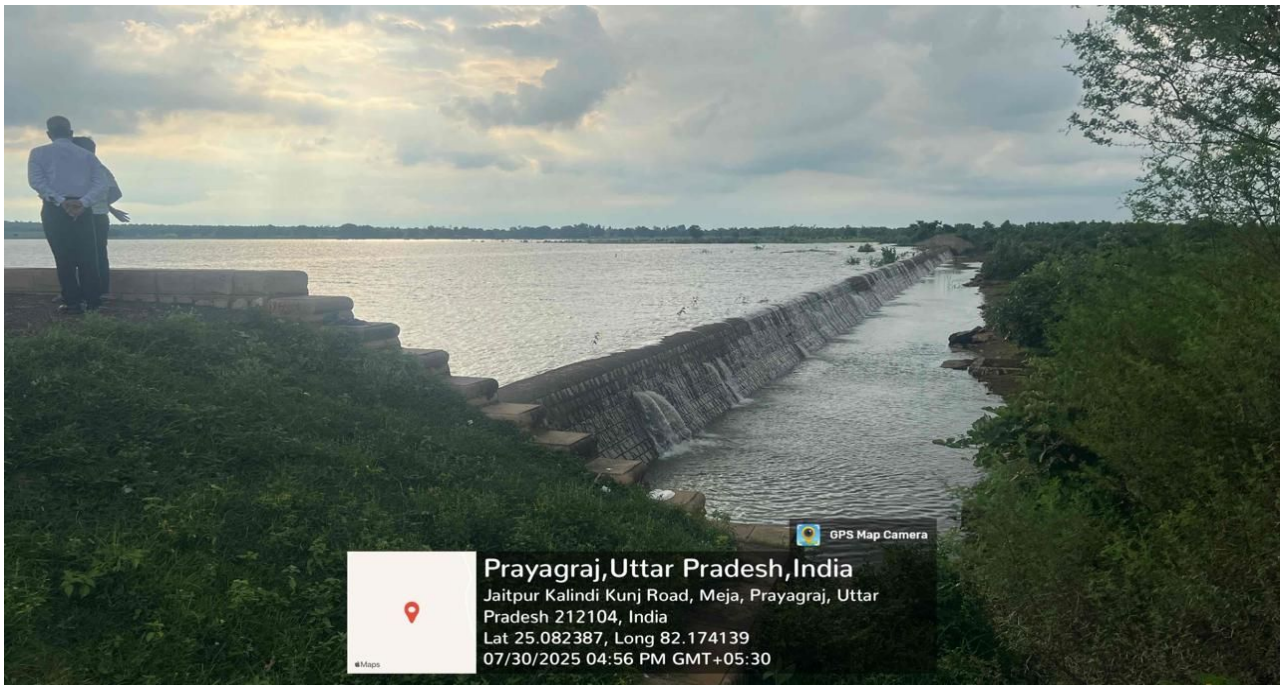
Adaptive Strategies for rejuvenation of Karnavati River in Prayagraj, UP

S. No.	Adaptive Strategy	Expected Outcome	Implementing Agency
A	**Immediate interventions**		
1.	Development of Origin of River Karnavati as a historical, religious, spiritual, cultural site with basic public amenities	• Strengthen people-river connect	• SMCG, UP • Local NGOs
2.	Liquid waste management	• NbS (constructed wetland and SBT) can be adopted for sewage treatment in drain	• SMCG, UP • UP Jal Nigam
3.	Identification and demarcation, and fencing of River boundary	• Reduced encroachment • Reduced floating waste • Stabilization of floodplain	• Revenue Department • Local Administration, UP
4.	Solid waste management	• Improving waste collection, segregation, and disposal systems involving the separation of biodegradable and non-biodegradable waste, and also by encouraging recycling and composting	• Municipality, UP
5.	Riparian Buffers	• Reduced siltation • River bank stabilization • Reduced pollution load • Conserve biodiversity	• Forest Department, UP • Local NGOs
B	**Long-term interventions**		
6.	Hydrogeological studies	• To understand the cause of reduced flow and catchment characteristics	• IIT-Roorkee • IIT-Delhi
7.	Ecological assessment	• To obtain baseline data of existing ecological conditions • Enhance biodiversity • Sustainable Development	• IISER-Bhopal • IIT-BHU



Outlet Weir at Gularia Dam, Deveri Road, Meja, Prayagraj District, Uttar Pradesh

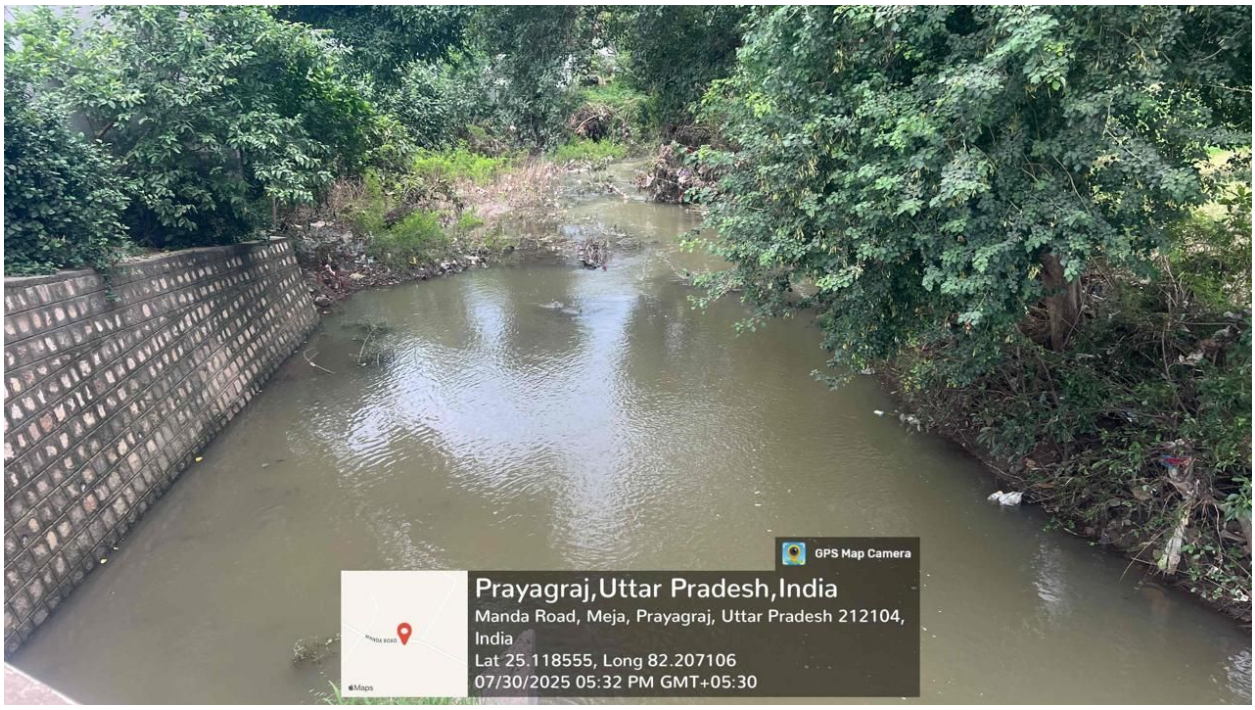
NMCG Team & Local Department Officers at the time of visit



Structure Failure in Outlet Weir at Gularia Dam, Deveri Road, Meja, Prayagraj District, Uttar Pradesh

Origin of Karnavati River at Guleria Dam

Three drains polluting the river stretch at Saibsa Dharwa Kalan Road, Meja, Prayagraj, UP



Polluted river stretch at Manda Road, Meja, Prayagraj, UP

River polluted with floating and suspended solid waste in Prayagraj