

Chapter-1
Introduction

1.1 Ganga: The Holy River

River Ganga has a very special place in collective consciousness of the people of India. It has provided material, spiritual, religious and cultural sustenance to millions of people since time immemorial.

River Ganga originates as Bhagirathi from the Gangotri glacier at Gomukh in Uttarakhand and joins its tributary Alaknanda in Devprayag to become Ganga. Most of the religious and tourist destinations in Garhwal region of Uttarakhand are alongside Ganga or its tributaries (Figure 1.1). Sixteen main towns of Garhwal region of Uttarakhand *i.e.* Ganga Front Towns¹ are located on the banks of Ganga or its tributaries. Although it covers only 294 kms from Gomukh to Haridwar in Uttarakhand of its course of over 2,525 kms. Municipal sewage and solid waste generated from these towns pose a grave threat to the sanctity of Ganga at the place of its origin itself. This has necessitated Government intervention for conserving the sanctity of river Ganga in Uttarakhand.

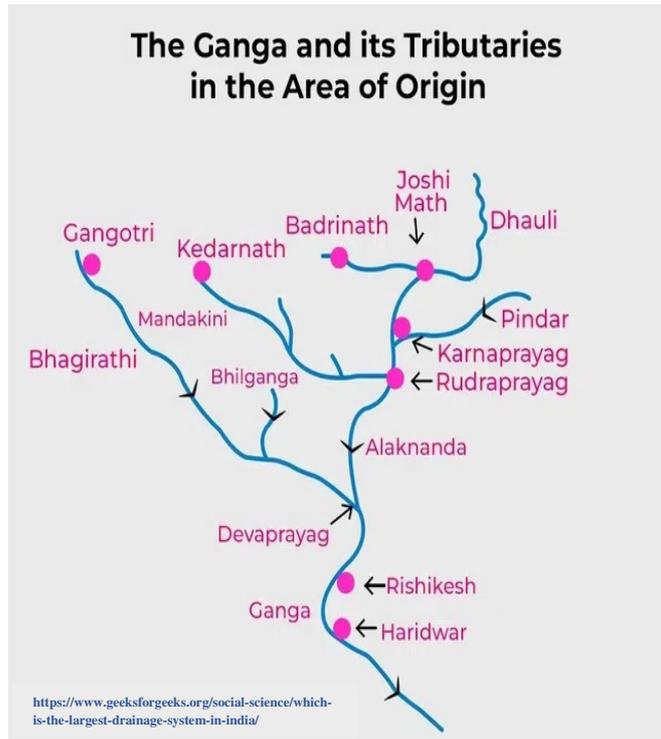


Figure-1.1: The Ganga and its tributaries

1.2 Threats to sanctity of Ganga

Rapidly increasing population, rising standards of living and exponential growth of industrialisation and urbanisation have exposed water resources, in general, and rivers, in particular, to various forms of degradation. The mighty Ganga is no exception. National Mission for Clean Ganga (NMCG), a society constituted under the provisions of the Environment (Protection) Act, 1986 and responsible for implementation of the Namami Gange programme, has classified major polluters of Ganga water into two categories, namely: i) **Point sources**—These are organized sources of pollution where

¹ Gangotri and Uttarkashi-located on the banks of Bhagirathi; Kirtinagar, Srinagar, Rudraprayag, Gaucher, Karnprayag, Nandprayag, Chamoli-Gopeshwar, Joshimath and Badrinath-located on the banks of Alaknanda; and Haridwar, Rishikesh, Muni ki Reti, Tapovan and Devprayag-located on the banks of Ganga.

the pollution load can be measured, *e.g.* surface drains carrying municipal sewage or industrial effluents, sewage pumping stations and sewerage systems, trade effluents from industries, *etc.* ii) **Non-point sources**—These are non-measurable sources of pollution such as run-off from agricultural fields carrying chemicals and fertilizers, run-off from solid waste dumps and areas used for open defecation, dumping of un-burnt/ half-burnt dead bodies and animal carcasses, dhobi ghats, cattle wallowing, *etc.*

1.3 Conservation of River Ganga: Early Initiatives

Government intervention for conserving sanctity of Ganga is four decades old. With the objective of controlling the pollution in the river Ganga, the Government of India (GoI) launched Ganga Action Plan (GAP) Phase-I in 1985 to intercept, divert and treat wastewater generated in 25 class-I towns² (cities with population over 1,00,000) in three states: Uttar Pradesh (including Uttarakhand then), Bihar and West Bengal. GAP Phase-II was initiated in 1993 and was later expanded to include some of its tributaries (Yamuna, Damodar and Gomati *etc.*) also. Core schemes of GAP were related to Interception & Diversion and Sewage Treatment Plants (STPs) which were designed to tackle pollution from point³ sources. Non-core schemes comprised low-cost sanitation schemes, river front development, crematoria *etc.* and tackled non-measurable pollution from non-point⁴ sources, such as dumping of solid waste and open defecation, dumping of unburnt/ half-burnt dead bodies *etc.* Milestones achieved in GAP-I (as on 31 March 2000) and GAP-II (as on 31 March 2014) are as follows in **Table-1.1** below:

Table-1.1: Details of milestones achieved in GAP-I and GAP-II

Programme	No. of Projects Sanctioned	No. of Projects Completed	Funds Released by GoI (₹ in crore)	Expenditure Incurred by States (₹ in crore)
GAP-I	261	260	451.70	433.30
GAP-II	314	264	522.10	505.31

The primary focus of GAP was on urban wastewater, and it suffered from various shortcomings of planning and implementation as highlighted in past audit reports of the Comptroller and Auditor General of India (C&AG) as detailed in **Table-1.2** below:

Table-1.2: Details of past audit reports of C&AG

Name of Audit Report	Audit Period	Main Findings
Review of the Ganga Action Plan (Report No. 5A of 2000, Union Government, Scientific Departments)	1993-2000	Short achievement (39 <i>per cent</i>) of primary target of sewage treatment, shortfall/delays in creation of sewage treatment assets, non-uniformity in determination of sewage characteristics, cost escalations in sanctioned works, faulty designs in Detailed Project Reports (DPRs), lack of necessary spade work, bad contract management, idling of expensive equipment and in general poor maintenance.

² Six in Uttar Pradesh, four in Bihar and 15 in West Bengal.

³ Organized sources of pollution where the pollution load can be measured, *e.g.* surface drains carrying municipal sewage or industrial effluents, sewage pumping stations and sewerage systems, trade effluents from industries, *etc.*

⁴ Non-measurable sources of pollution such as run-off from agricultural fields carrying chemicals and fertilizers, run-off from solid waste dumps and areas used for open defecation, dumping of un-burnt/ half-burnt dead bodies and animal carcasses, dhobi ghats, cattle wallowing, *etc.*

Name of Audit Report	Audit Period	Main Findings
All India Performance Audit of 'Rejuvenation of River Ganga' (Report No. 39 of 2017, Union Government- Ministry of Water Resources, River Development and Ganga Rejuvenation)	2014-17	Lack of river basin management plan, delays in approval of DPRs, non-identification of river conservation zones, delayed execution of projects, poor utilization of rural sanitation funds, shortfall in manpower and poor monitoring of the projects.
Performance Audit of 'Rejuvenation of River Ganga' (Report No. 1 of 2018, Government of Uttarakhand- Department of Drinking Water)	2013-17	Non-approval of full plan size by NMCG (Annual Plan of Operation for Forestry Interventions for Ganga was a meagre 4.66 per cent of the area planned for the year 2016-17 in the Detailed Project Report), funds remaining unspent, municipal garbage remaining dumped on the slopes, underutilization of STPs, nallas remaining untapped, lack of adequate capacity to treat sewage and non-establishment of sufficient number of water quality monitoring stations.

In June 2014, the Government of India launched Namami Gange program with a budget outlay of ₹ 20,000 crore for a period up to 31 March 2021.

1.4 Current efforts for conservation of Ganga: Namami Gange

Namami Gange is an umbrella program aimed at integrating previous and currently ongoing initiatives. The major activities carried out under Namami Gange are rehabilitation of existing STPs, creation of new STPs, development of ghats and crematoria, solid waste management, afforestation and biodiversity conservation *etc.* During 2014-23, a total of ₹ 14,260 crore has been released by NMCG to State Governments (out of which ₹ 1,149 crore was released to Uttarakhand), State Mission for Clean Ganga (SMCG) and other agencies for implementation of projects related to Ganga rejuvenation.

Considering the need and spread of the Programme, Government of India has further approved Namami Gange Mission-II with a budgetary outlay of ₹ 22,500 crore till 2026 *inter alia* including projects for existing liabilities (₹ 11,225 crore) and new projects/interventions (₹ 11,275 crore).

1.5 State level administrative set-up of Namami Gange

Current structures for Governance of Ganga cleaning activities are established by the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 and The Water (Prevention and Control of Pollution) Act, 1974. State level implementation framework for preventing, controlling and abatement of environmental pollution in River Ganga involves seven stakeholders shown in **Table-1.3** below:

Table-1.3: Planning and Implementation Framework of Namami Gange Programme

Stakeholder	Main Responsibilities	Reports to
State Ganga Committee through SMCG	Coordination and implementation of the conservation activities relating to River Ganga including augmentation of sewerage infrastructure, catchment area treatment, creating public awareness at the State level, regulation of activities aimed at the prevention, control and abatement of pollution in the River Ganga to maintain its water quality	NMCG

Stakeholder	Main Responsibilities	Reports to
	and implementation of the river basin management plan. State Ganga Committee acts through its executive wing SMCG.	
District Ganga Committees	Identifying activities which may be threats in the area of specified District abutting the River Ganga and making a plan for remedial action and take remedial action in respect thereof.	State Ganga Committee
Uttarakhand Pollution Control Board (UKPCB)	UKPCB is an independent body functioning under provisions of Section 4 of the Water (Prevention and Control of Pollution) Act, 1974. It monitors water quality of River Ganga and quality of effluents being discharged from STPs constructed under Namami Gange.	Central Pollution Control Board
Urban Local Bodies	Responsible for preventing pollution from Solid Waste Management and safe disposal of corpses in their jurisdiction.	State Government
Village Panchayats	Responsible for preventing pollution into river Ganga and/or its tributaries in their jurisdiction.	
Implementing Agencies	Uttarakhand Peyjal Sansadhan Vikas Evam Nirman Nigam (popularly known as Uttarakhand Peyjal Nigam) is the sole implementing agency for construction of sewerage infrastructure in Ganga Front Towns through its five dedicated field divisions functioning under one Superintending Engineer designated as General Manager-Ganga. The Irrigation Department is an implementing agency for the construction of bathing ghats and crematorium. The Forest Department is responsible for implementing forestry-related interventions.	SMCG and State Government
Maintenance Agencies	Uttarakhand Jal Sansthan is the sole maintenance agency for sewerage infrastructure and Forest Department for forestry related interventions. Bathing ghats and crematoria are maintained by concerned local bodies.	SMCG and State Government

1.6 Why Audit chose the topic again?

Since last four decades, successive governments have made efforts to clean Ganga, sometimes, under judicial intervention. However, the problem of pollution still persists. Since our last performance audit in 2017-18, Audit has noticed deficiencies in planning, implementation and operation & maintenance (O&M) of program activities. As a result, the State Government missed the main milestone of preventing untreated sewage from falling into Ganga. Besides, main audit recommendations like scientific disposal of municipal garbage, capacity upgradation of STPs and tapping of all identified nallas in Ganga Front Towns *etc.* were not implemented by the Government. Still, there were STPs which were not connected to any households. There were various O&M related problems in STPs. New STPs were proposed soon after commissioning of planned STPs. Eighteen out of 44 completed STPs could not be handed over to maintenance agency due to various deficiencies. Single project relating to forestry intervention (plantation) for River Ganga has achieved little physical target (16 *per cent*). The water quality monitoring laboratory of UKPCB still does not have National Accreditation Board for Testing and Calibration Laboratories accreditation. In view of the above problems, Audit selected the issue for Performance Audit.

1.7 Audit Objectives

Performance Audit seeks to examine:

- Whether Namami Gange infrastructure was adequately planned and performing efficiently to prevent, control and abate pollution in river Ganga;
- Whether projects were implemented in an economic, efficient and effective manner;
- Whether estimation, availability and utilization of funds was adequate and reliable; and
- Whether monitoring and evaluation mechanism was working effectively for realization of the outcomes of projects under Namami Gange.

1.8 Audit Scope, Methodology and Sample

A Performance Audit covering the period from 2018-2019 to 2022-23 was carried out during July-December 2023. Audit Universe contained a total of 42 projects related to river Ganga in Uttarakhand (25 of sewage management, 15 of river front development and ghats cleaning, one of afforestation and one of tackling industrial pollution) which were completed, ongoing or under tendering stage during the audit period in Ganga Front Towns. Audit examined 23 out of 42 projects in detail (50 *per cent* of projects from each category subject to the condition that at least one project was selected from each category). Audit selected projects, taking expenditure incurred during 2018-23 as size measure, by Probability Proportional to Size with Replacement method using random number table of National Sample Survey Organization. Besides, O&M of earlier completed assets in selected implementing agencies was also evaluated. During evaluation of 23 selected projects, Audit examined records of SMCG, implementing agencies (Uttarakhand Peyjal Nigam, Irrigation Department, Forest Department and Urban Local Bodies *etc.*) and maintenance agencies (Uttarakhand Jal Sansthan and Forest Department *etc.*).

The audit methodology was mainly consisted of document analysis, responses to questionnaires, examination of reports and records at various levels and field visits to the project sites in selected cases. Audit Scope and Methodology were discussed with Secretary, Drinking Water and Sanitation in an entry conference (04 August 2023). The State Government had furnished its detailed replies on 18 May 2024 to the Draft Report before exit conference, which was conducted with Secretary, Drinking Water & Sanitation along with officers from SMCG and Drinking Water Department on 21 May 2024 wherein the audit findings and recommendations were discussed. Replies of the Government/Department have been suitably included in the Report.

1.9 Audit Criteria

The audit criteria adopted for achieving the audit objectives were derived from the following sources:

- River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016;
- The Water (Prevention and Control of Pollution) Act, 1974;

- Environment Protection Act, 1986;
- Manual on Sewerage and Sewage Treatment Systems, 2013;
- Relevant orders of NGT/High Courts and Supreme Court; and
- General Financial Rules and Uttarakhand Procurement Rules 2017.

1.10 Acknowledgement

Audit acknowledges the cooperation extended by SMCG, District Ganga Committees, Urban Local Bodies, implementing and maintenance agencies (Uttarakhand Jal Nigam, Irrigation Department and Uttarakhand Jal Sansthan) during the audit.