

Chapter-3

Auxiliary Initiatives for Cleaning Ganga: Solid Waste Management, Forestry Interventions and Ghats & Crematoria

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Due to insufficient public awareness through Information, Education and Communication activities, the crematoria constructed by State Mission for Clean Ganga (SMCG) in various locations remained largely unutilized. The progress of forestry interventions was minimal, with only 16 *per cent* of the planned expenditure implemented. Solid Waste Management (SWM) in Ganga Towns suffered from inadequate management practices, as garbage was primarily dumped on river slopes or disposed of through burning instead of proper processing which led to it flowing back into the river.

3.1 Auxiliary initiatives for cleaning Ganga

Apart from establishing Sewage Treatment Plants for treating municipal sewage, several auxiliary initiatives have been undertaken to mitigate river pollution. These include facilitating proper SWM in Urban Local Bodies (ULBs), constructing ghats and crematoria, and implementing forestry interventions along the Ganga and its tributaries. These supplementary efforts contribute indirectly to reducing pollution in the Ganga.

3.2 Ghats and Crematoria

Bathing ghats and crematoria act as an interface between humans and river. Since ages, riverbanks have been used for offering prayers and cremation of deceased. Development of ghats and crematoria promotes cleanliness of river edges and better infrastructure for social & cultural activities. It also helps prevent disposal of unburnt bodies into river Ganga and helps promote 'People River connect'.

In Uttarakhand, National Mission for Clean Ganga (NMCG) has sanctioned 31 ghats and 28 crematoria at a cost of ₹ 328.59 crore. Audit examined 11 ghats and 15 crematoria with combined expenditure of ₹ 88.62 crore. Following shortcomings were noticed during Audit:

3.2.1 *Unutilised crematoria due to construction without demand and need analysis*

Demand of local public for a project/service is the foremost criteria for expenditure of public money. Local demand ensures full utilization of assets created as well as maintenance of these assets by local people. NMCG found (August 2017) that in many cases, ghats and crematoria were either not need based or over designed. Hence, it instructed SMCG Uttarakhand that while taking up these works, the following points were necessarily adhered to:

- the ghat and crematoria development activities should be taken up considering the requirements of local people and in consultation with local bodies.
- Before commencement of works, SMCG Uttarakhand to consult local bodies and work out proper arrangement for future operation and maintenance (O&M).

- A resolution from the ULB for undertaking O&M beyond project support period should be obtained before commencement of works apart from obtaining all the necessary no objection certificate and clearance.

Despite clear instructions from NMCG, crematoria were constructed without assessing public demand or considering the cultural preferences of the local population. As a result, during joint inspections of 11 crematoria, it was observed that these facilities were neither utilized by local people nor maintained by the local bodies to whom they were transferred.

Status of constructed crematoria are provided in the **Table-3.1** below:

Table-3.1: Status of crematoria as per joint physical inspection

Sl. No.	Place	Whether demand made by local public	Whether Used or Not	If unused, where pyres are burnt	Whether maintained or not	Date of Completion
1.	Cremation Ghat, Chamoli	No	Not used	Pyres are burnt in riverbed	Not maintained	May 2019
2.	Cremation Ghat, Nandprayag	No	Not used	Pyres are burnt in riverbed	Not maintained	January 2019
3.	Cremation Ghat, Karnaprayag	No	Not used	Pyres are burnt in riverbed	Not maintained	March 2019
4.	Crematoria-2, Pokhari Bridge, Karnaprayag	No	Not used	Pyres are burnt in riverbed	Not maintained	March 2019
5.	Gholtir Crematorium, Rudraprayag	No	Not used	Pyres are burnt in riverbed	Not maintained	March 2019
6.	Koteshwar Crematorium, Tehri	No	Not used	Pyres are burnt in riverbed	Not maintained	November 2018
7.	Gauchar Crematorium	No	Not used	Pyres are burnt in riverbed	Not maintained	March 2019
8.	Kedar Crematorium, Uttarkashi	No	Used very less	Some pyres are burnt in riverbed and some in crematorium	Not maintained	February 2019
9.	Heena Crematorium, Uttarkashi	No	Not used	Pyres are burnt in riverbed	Not maintained	February 2019
10.	Dunda Crematorium, Uttarkashi	No	Not used	Pyres are burnt in riverbed	Not maintained	December 2018
11.	Umarnot Cremation Ghat, Karnaprayag	No	Not used	Pyres are burnt in riverbed	Not maintained	January 2019

Following pictures also confirm above facts:



Photo 3.1: Unmaintained and damaged crematorium no. 2, Karnaprayag (Date: 13 Dec 2023)

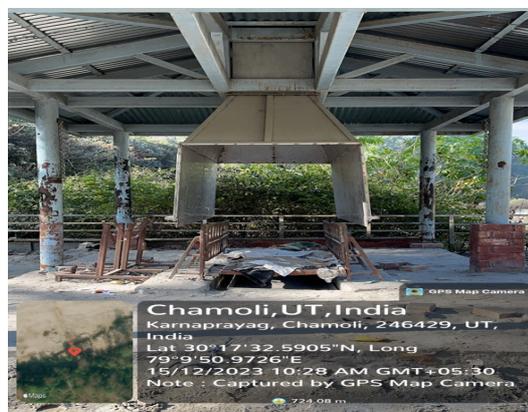


Photo 3.2: Unused and unmaintained crematorium, Gauchar



Photo 3.3: Remnants of a pyre in Riverbed in Gauchar

The State Government acknowledged (May 2024) the above facts and stated that the public was being sensitized by concerned ULBs through Information, Education and Communication activities (May 2024) to use available crematoria and abandon the practice of burning pyres on riverbeds.

3.3 Forestry interventions for River Ganga

Forestry Interventions for Ganga is a sub part of Namami Gange Programme with the objective of sustainable forest management for the benefit of the Ganga River basin. Forest Research Institute, Dehradun has prepared the Detailed Project Report (DPR) for the interventions (mainly plantations) needed to be carried out under entire catchment of river Ganga. The scheme was to be completed during 2016-17 to 2020-21.

During audit of Project Management Unit-Forestry Interventions for GANGA, Forest Department Uttarakhand, Audit noticed following issue in implementation of the scheme:

3.3.1 Meagre progress of forestry interventions

Audit noticed that the approved DPR had planned expenditure of ₹ 885.91 crore for plantation in 54,855.43 hectare¹(Hec) in Uttarakhand during scheme period of 2016-17 to 2020-21. However, Project Management Unit, Forestry Interventions for Ganga Uttarakhand, in consultation with NMCG, proposed very little amounts in Annual Plan of Operations (APOs) each year. This limited expenditure under the scheme to only 16 per cent of originally planned financial targets as detailed in the **Table-3.2** below:

¹ Estimated area as per DPR: Natural Landscape (30,302.50 Hec) +Agriculture Landscape (15,180.00 Hec) + Urban Landscape (1,406.08 Hec) + Conservation Intervention (7,966.85 Hec).

Table-3.2: Details of achievement against target as per approved DPR

(All amounts in crore ₹)

Year	Planned Expenditure as per DPR	APO submitted and approved	Expenditure incurred	Percentage of expenditure vis-à-vis planned expenditure
2016-17	358.91	15.93	15.80	4.40
2017-18	162.57	19.57	19.03	11.71
2018-19	223.97	31.77	30.56	13.64
2019-20	58.70	19.19	16.28	27.73
2020-21	81.76	39.36	36.65	44.83
2021-22	-	26.39	18.38	-
2022-23	-	16.92	7.57	-
Total	885.91	169.13	144.27	16.28

Source: Project Management Unit, Forestry Interventions for Ganga, Forest Department Uttarakhand.

Due to APOs and financial progress being meagre in comparison to the planned expenditure, physical targets were affected very badly. Physical progress under natural landscape (the main component of scheme), agricultural landscape, urban landscape and conservation interventions could be achieved only 34 per cent², 9 per cent³, 6 per cent⁴ and 14 per cent⁵ of planned targets. The scheme could not rise up to expectations of planning done by Forest Research Institute and approved by NMCG.

The State Government accepted (May 2024) that the total funds released by NMCG were far below the targets in the DPR. However, it stated that additional plantation had been planned under CAMPA and other forestry schemes.

The reply is not acceptable as plantations under CAMPA and other forestry schemes have distinct objectives, whereas plantations planned under forestry interventions had specific features tailored for Ganga rejuvenation. Therefore, the shortfall in forestry interventions for Ganga cannot be compensated for by other plantation initiatives.

3.4 Solid Waste Management

Solid waste is swept into water bodies such as the Ganga and her tributaries, either purposely by people or by heavy rains during the monsoon season. In the waters, large amounts of biodegradable waste may take a lot of oxygen from the water to decompose, leading to illness and death of fish and other aquatic creatures, such as the endangered Gangetic dolphin. Non-biodegradable materials float through the rivers, create blocks in the free flow of the water and slowly release their harmful chemicals into the water itself. Aquatic creatures often mistakenly eat these materials and die. Hence, management of solid wastes is very important to tackle the problem of pollution of Ganga. State Ganga Committee monitors status of SWM in its meetings.

SWM Rules, 2016 delineate all arrangements regarding proper management of solid waste in ULBs and census towns. Provisions of Rule 16 of the said Rules makes State

² Natural Landscape: Covered Area:(10,416.70 Hec)/Estimated area as per DPR:(30,302.50 Hec).

³ Agriculture Landscape: Covered Area:(1,412.84 Hec)/Estimated area as per DPR:(15,180.00 Hec).

⁴ Urban Landscape: Covered Area:(90.60 Hec)/Estimated area as per DPR:(1,406.08 Hec).

⁵ Conservation Intervention: Covered Area:(1,128.00 Hec)/Estimated area as per DPR:(7,966.85 Hec).

Pollution Control Board (SPCB) responsible for enforcing these rules through local bodies.

Audit noticed various shortcomings in management of solid waste as highlighted below:

3.4.1 Lack of authorization for processing and disposal of solid waste

Rule 15 of the SWM Rules, 2016 provides that the local authorities and Panchayats shall seek authorisation⁶ from the SPCB for setting up waste processing, treatment or disposal facility, if the volume of waste is exceeding five metric tons per day including sanitary landfills. Rule 16 enjoins the SPCB to grant authorization within a period of 60 days of application stipulating compliance criteria and environmental standards as specified in Schedules I and II of the Rules including other conditions.

During scrutiny of records of Uttarakhand Pollution Control Board (UKPCB), audit noticed that there were 102 ULBs in the State during 2022-23. Out of these, 44 ULBs were producing 5 tons per day or more amount of solid waste. However, none of them were able to get authorization from UKPCB for facilities of processing and disposal of solid waste. Year wise position, since SWM Rules, 2016 coming into effect, is given in **Table-3.3** below:

Table-3.3: Status of authorization from UKPCB for facilities of processing and disposal of solid waste

Year	No. of authorization applications received	No. of authorizations granted
2017-18	06	0
2018-19	24	0
2019-20	18	0
2020-21	08	0
2021-22	20	0
2022-23	02	0

Source: Uttarakhand Pollution Control Board.

UKPCB stated that the proposals were not found fit for granting authorisations. It indicates that management of solid waste was not as per norms established by SWM Rules, 2016. Audit also noticed that State Ganga Committee never enquired about status of authorizations of solid waste disposal facilities despite the fact that they could potentially increase pollution in the river.

The State Government accepted (May 2024) the facts and stated that directions were issued to all ULBs in January 2024 by the Directorate of Urban Development Department regarding the authorization of waste processing and disposal facilities.

The reply is not acceptable because waste processing and disposal facilities continued to operate without proper authorization, even seven years after the rules were implemented, the UKPCB did not fulfill its obligation of ensuring compliance with the SWM Rules.

⁶ Authorisation means the permission given by the SPCB to the operator of a facility or urban local authority, or any other agency responsible for processing and disposal of solid waste.

3.4.2 Ground report of Solid Waste Management

To assess actual position of SWM in Ganga Front Towns, Audit jointly inspected SWM facilities/dumping grounds in 10 hill towns⁷.

Audit observed that solid waste was being indiscriminately dumped on river slopes or disposed of by burning. As a result, all the solid waste either ended up as ashes or was at risk of being washed into the river during rainfall. The following pictures serve as evidence of this issue:

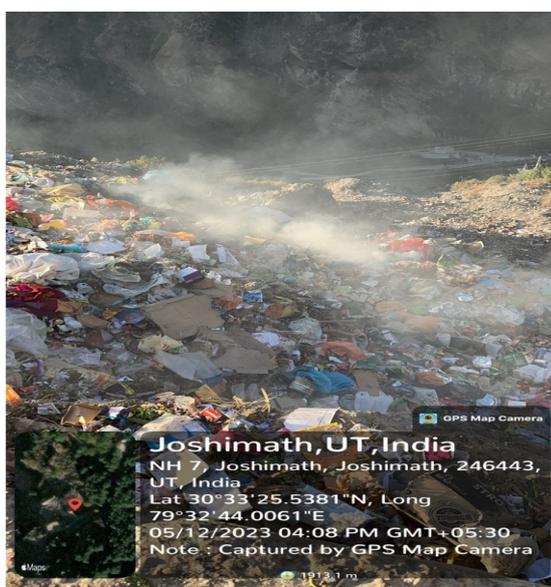


Photo-3.4: Garbage dumped on slope of Alaknanda and being dumped over legacy waste and burnt - Joshimath

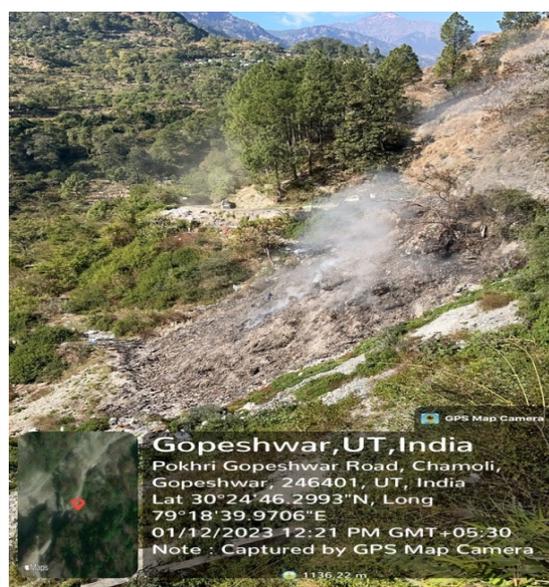


Photo-3.5: Garbage dumped on slope of Balkhila Gadera of Alaknanda and burnt - Chamoli

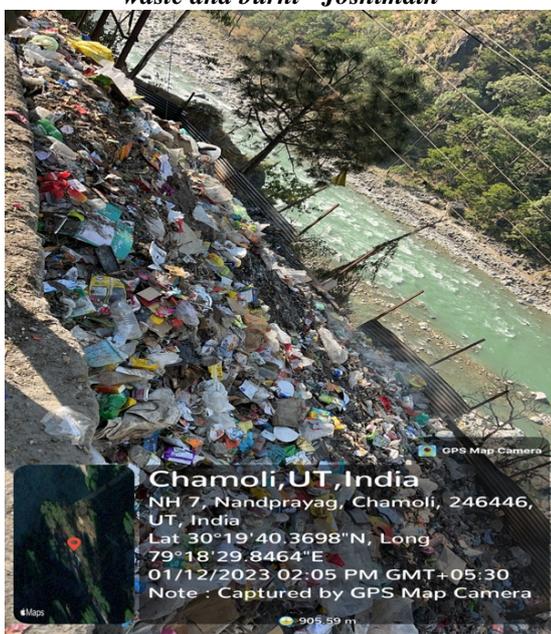


Photo-3.6: Garbage dumped on slope of Alaknanda in Nandprayag

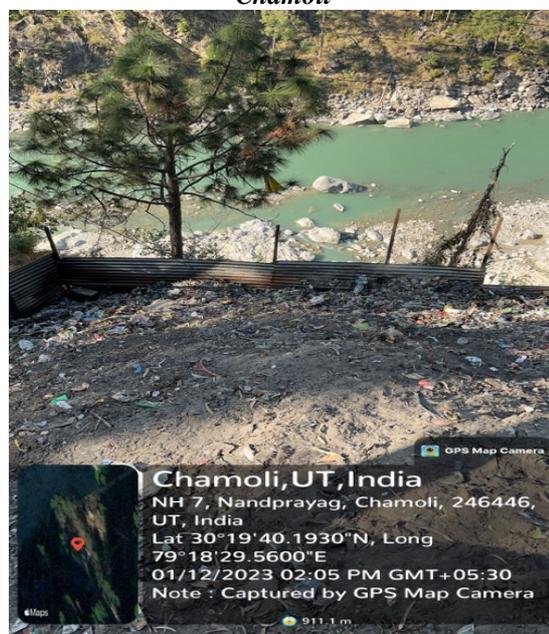


Photo-3.7: Garbage was regularly burnt in Nandprayag dumping ground

⁷ Joshimath, Gopeshwar-Chamoli, Karnaprayag, Nandprayag, Rudraprayag, Srinagar, Tehri, Gauchar, Uttarkashi and Devprayag.

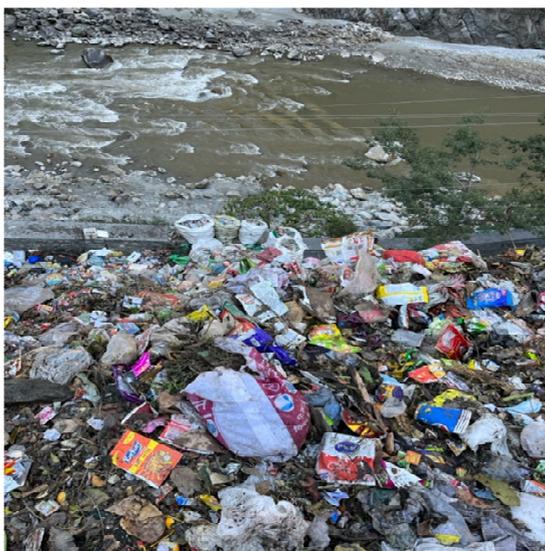


Photo-3.8: Dumping ground in Karnaprayag on bank of Alaknanda (Date:13 Dec 2023)

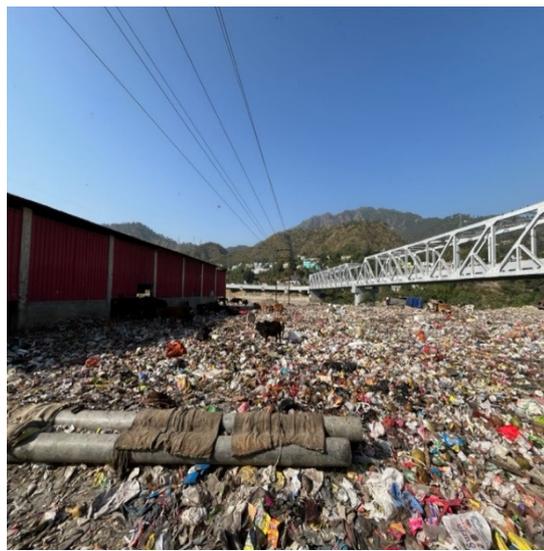


Photo-3.9: Huge dump of garbage on bank of Alaknanda in Srinagar (Date: 5 Nov 2023)



Photo-3.10: Huge dump of garbage on slope of Alaknanda in Rudraprayag

The position, as depicted in above pictures of six towns, was also found in Tehri, Gauchar and Uttarkashi. Devprayag was an exception where solid waste processing facility was located away from river in Kirtinagar.

Therefore, it is evident that most of the solid waste dumping grounds in Ganga towns were situated at inappropriate locations, often near riverbanks. This increased the likelihood of garbage being washed into the river during rainy seasons. Burning of solid waste was also a common practice at these sites. Despite the formulation of SWM Rules seven years ago, the system of SWM remained inadequate. The State Ganga Committee and respective District Ganga Committees did not address the dismal state of solid waste disposal arrangements.

The State Government accepted (May 2024) the facts and confirmed that directives had been issued to all ULBs to prevent fire incidents at legacy waste dumps and manage solid waste effectively. Furthermore, the government has taken action, such as imposing financial penalties, against municipal staff to enforce compliance.

3.5 Recommendations

- 1. Initiatives to enhance public awareness about the use of crematoria may be made more effective through Information, Education and Communication activities.***
- 2. Efficient processing and disposal of solid waste may be ensured by all the Urban Local Bodies and regulatory authorization for the same obtained promptly from Uttarakhand Pollution Control Board.***