

CHAPTER - III

***Planning for prevention
and control of water
pollution in Rivers, Lakes
and Ground water***

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3.1 Introduction

According to the Water (Prevention and Control of Pollution) Act, 1974, WBPCB is required to plan comprehensive programmes for prevention and control of water pollution and secure execution thereof. For this purpose, identification of the water polluting sources, type and the quantity of pollutants discharged into the environment was to be done. Further, as per Section 16 (h) of the Act, CPCB must plan and cause to execute a nationwide programme for the prevention, control or abatement of water pollution.

CPCB's Report on 'River Stretches for Restoration of Water Quality (September 2018)' under National Water Quality Monitoring Programme for the year 2016-17, listed 17 stretches¹⁰ of different rivers in the State as '*polluted*'.

In September 2018, the National Green Tribunal (NGT)¹¹ directed all States to prepare Action Plans within two months to bring all the polluted river stretches under the category, "fit for at least bathing purpose" (*i.e.* BOD < 3 mg/l and FC < 500 MPN/100 ml).

In response to the order¹² of NGT, the CPCB summarised seven themes¹³, and directed the State Governments to compile information which *inter alia* included three¹⁴ of these specific thematic areas relating to abatement of water pollution *viz.* (i) **Water Quality Management Plan**, (ii) **Domestic Sewage Management Plan** and (iii) **Industrial Wastewater Management Plan**.

This Chapter deals with the planning mechanism envisaged under the State Environment Plan (SEP) and the Action Plans of the Polluted River Stretches (PRS) for implementation of the Rejuvenation programmes prepared in compliance with NGT's OA 360/2018 and 673/2018 respectively. Audit findings are discussed in succeeding paragraphs.

3.2 State Water Policy

To assess surface water and ground water resources, governments require adequate and comparable information. Thus, it is necessary to establish databases of the availability of all types of hydrologic data and to identify surface and ground water resources and potential sources of water supply and prepare national profiles.

¹⁰ Barakar, Churni, Damodar, Darakeswar, Dwaraka, Ganga, Jalangi, Kaljani, Kansai, Karala, Mathabhanga, Mahananda, Mayurakshi, Rupnarayan, Silabati, Teesta and Vidyadhari.

¹¹ Order against the Original Application No. 673/2018.

¹² In the matter of the Original Application (OA) Number 360/2018.

¹³ (i) Solid Waste Management Plan, (ii) Water Quality Management Plan, (iii) Domestic Sewage Management Plan, (iv) Industrial Wastewater Management Plan, (v) Air Quality Management Plan, (vi) Mining Activity Management Plan and (vii) Noise Pollution Management Plan.

¹⁴ The remaining themes are related to noise pollution, air pollution, mining and solid wastes.

National Water Policy, 2012 was framed to assess the existing situation of water resources of the country and to propose a plan of action with a unified national perspective. The policy envisaged that States would frame and adopt a State Water Policy.

Audit observed that the State Water Policy for West Bengal had not been framed even after a lapse of 12 years of the finalisation of the National Water Policy. Further, a standardised State level water related information database system had not been established. In the absence of a State Water Policy, issues related to water governance such as water pollution, encroachments on water bodies, adequacy of infrastructure, conservation, management of water and water pricing could not be effectively addressed, as discussed in this Report.

The Department accepted (March 2024) the audit observation and stated that the rural area water supply issues were being looked after by the PHED while the urban area water supply issues were addressed by KMDA and KMC. However, the fact remains that the Government has been in continuous default by not framing a State Water Policy in consonance with the National Water Policy 2012.

3.3 Short term Action Plan under State Environment Plan

In compliance with NGT’s OA No. 360/2018, the Environment Department, GoWB prepared (2020) the State Environment Plan (SEP) by collating information from 23 districts and 125 urban local bodies (ULBs) on seven thematic areas, as defined by the CPCB.

Further, as per the NGT order, OA No. 360/2018, the SEP was to include various short-term action plans related to abatement of water pollution. These short-term plans were to be finalised by various stakeholders¹⁵ and had to be completed within 6 to 12 months from the date of the preparation of the SEP. It was noted in Audit that during the period of 2018-19 to 2022-23, a number of Action Plans have been initiated by different implementing agencies, but none of them were completed as detailed in **Paragraphs 3.3.1 to 3.3.5.**

3.3.1 Inventory of Wetlands

Wetlands are a vital part of the hydrological cycle and are highly productive eco-systems which support rich biodiversity and provide a wide range of eco-system services such as water storage, water purification, flood mitigation, erosion control, aquifer recharge *etc.*

- A. MoEF&CC’s guidelines for implementing Wetlands (Conservation and Management), 2017 Rules required developing a list of activities, to be regulated and permitted within the notified wetlands and their zone of influence, and defining the strategies for conservation and wise use of notified wetlands.
- B. Wetlands (Conservation and Management) Rules, 2017, *inter alia*, require¹⁶ that the State Wetlands Authority (SWA) would prepare a comprehensive

¹⁵ UD&MA Department, WBPCB, ULBs *etc.*

¹⁶ Vide Rule 5(4)(d).

- digital inventory¹⁷ of all wetlands within a period of one year from the date of publication of these Rules, and upload the same on a dedicated web portal, to be developed by the Central Government for the said purpose. The inventory was to be updated every ten years.
- C. The State Environment Plan 2020, also aimed at preparation of an inventory of water bodies, as a short-term action plan.
- D. NGT¹⁸ required (22 July 2021), National Wetlands Committee to identify and inventorise wetlands with the assistance of State Governments and obtain brief documents¹⁹ of each of the identified wetlands.

Audit, however, observed that the inventory of identified water bodies could not be completed within the stipulated time period of one year and was still in progress (March 2024) as detailed below:

- Water Resources Investigation and Development Department (WRIDD), Government of West Bengal was designated as the State's Nodal agency for restoration of water bodies including wetlands *vide* Chief Secretary's notification dated 31 May 2021.
- According to the National Wetland Inventory Assessment Atlas prepared by the Space Application Centre of Indian Space Research Organization (ISRO), a total of 9,119 wetlands with an area of above 2.25 Ha each were identified in the State.
- In the first phase, the Department of Environment, GoWB entrusted the work of preparation of brief documents for 23 wetlands to the Institute of Environmental Studies and Wetland Management (IESWM²⁰) in September 2021. Subsequently, WRIDD prepared (March 2022) fact sheets of 94 wetlands.

The Department also stated (March 2024) that the work of preparation of brief documents for 23 wetlands had been completed and preparation of brief documents for 221 wetlands were at their final stages.

Even three years after the NGT order, the Department did not notify wetlands and their zone of influence and define the strategies for their conservation, in compliance with the MoEF&CC's guidelines. This leaves the wetlands with highly productive eco-system and rich biodiversity at the risk of potential damage.

3.3.2 Inventory of Ponds/ Lakes

The MoEF&CC's guidelines for implementing Wetlands (Conservation and Management) Rules 2017 requires State Wetlands Authorities to prepare brief documents for each wetland (such as lagoon, lake, marsh, urban lake *etc.*) to be notified for regulation under the Rules 2017, delineating demarcation of

¹⁷ Details of wetlands with digital maps and coordinates.

¹⁸ Vide its order in OA 351/2019.

¹⁹ The brief document would record the physical as well as socio-economic importance and Bio diversity of the wetlands, which would enable the district administration to use and manage the wetlands.

²⁰ IESWM was established in March 1986 with the primary objective of carrying out studies related to wetland functions and its ecology. The Institute is an Autonomous Body under the administrative control of the Department of Environment, Government of West Bengal.

wetlands boundary, demarcation of its zone of influence, ecological character, pre-existing rights and privileges *etc.* Audit observed that brief documents for the identified water bodies were not prepared.

Action plans, timelines, and fund requirements for conservation/protection of the identified ponds/lakes were also not prepared.

NGT also, *vide* its order dated 25 February 2020 directed States to identify ponds and lakes for assessment of water quality, to prepare action plans for restoration of prioritized ponds or lakes and execute the approved action plans. Accordingly, the Environment Department, GoWB, identified (October 2020) 15,000 water-bodies (ponds, lakes, tanks *etc.*) in the State for protection and restoration works.

Further, as per directions issued by NGT *vide* order dated 25 February 2020 these identified water bodies were to be prioritized and restored by March 2021. However, Audit observed that the State Government had only taken up the work of preparation of brief documents. Strategies for conservation of identified water bodies had not been defined till March 2024.

Due to non-inventorisation of water bodies and subsequent non-preparation of action plans for restoration, concerted efforts could not be made for conservation and effective management of water bodies. Estimation of financial intervention needed for addressing issues related to restoration of those water bodies like weed infestation, sewage discharges, encroachments *etc.* was also not possible.

Recommendation 1:

The Environment Department should complete the inventory of all wetlands and water bodies in a time bound manner and prepare Action Plans for their effective management.

3.3.3 Faecal Sludge and Septage Management

Department of UD&MA, GoWB notified (May 2022) a Faecal Sludge and Septage Management (FSSM) Policy. The Policy points out that in the absence of adequate infrastructure for treatment and disposal, faecal sludge/septage was disposed of in open nullahs/outfall channels, causing pollution of rivers, canals and other water bodies. It further states that one of the reasons of high faecal coliform concentration in rivers was due to the direct disposal of faecal sludge/septage in outfall channels leading to rivers.

The FSSM Policy cited the following three-pronged approach towards adopting State-wide FSSM system:

(a) Co-treatment of faecal sludge and septage generating in the ULBs at own or nearby STPs;

(b) Setting up of independent Faecal Sludge and Septage Treatment Plants (FSTP) at ULB level or at cluster of ULB level;

(c) In case of small town (Population < one lakh) co-treatment of Faecal Sludge and Septage in new STPs (connected with intercepting sewer with diversion)

The FSSM Policy had also drawn a time frame for setting up of FSSM systems in municipal towns. As per the time frame, all the 128 ULBs of West Bengal were to be covered under FSSM systems by the year 2024-25.

Audit observed that though FSSM systems for 50 ULBs were to be set up by the end of March 2023, only six ULBs were covered till November 2023. Further, ULB-wise data for the quantity of septage generation and the quantity treated was not maintained by UD&MA and therefore the adequacy and effectiveness of the septage treatment facility could not be ascertained.

In reply, the Department stated (March 2024) that co-treatment of septage was being considered wherever Sewage Treatment Plants were available and in other cases, the work of setting up of Faecal Sludge Treatment Plants had been initiated.

3.3.4 Zero Industrial Wastewater Plan

According to SEP-2020 issued by CPCB, WBPCB had to prepare a zero industrial wastewater plan within a period of six months to one year, to reduce discharge of untreated or partially treated industrial wastewater into water bodies.

However, WBPCB was yet to prepare a zero industrial wastewater plan (March 2024). Joint inspection of the test checked industries showed that only five²¹ out of the 27 inspected industries had the facility to store and re-use treated wastewater.

In reply, the Department stated (March 2024) that it had issued direction to paper and distillery units to comply with the Zero Liquid Discharge guidelines of CPCB.

3.3.5 Utilisation of Treated Wastewater/Effluent

According to the Benchmark devised by the Ministry of Housing and Urban Affairs, Government of India, in the context of basic municipal services related to water supply, sewerage, solid waste management and storm water drainage, at least 20 *per cent* of the treated water should be reused/recycled. SDG-6 commits Governments to halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse by 2030.

The State Government constituted a committee in April 2019 for preparation of a comprehensive Policy on ‘Treated Wastewater Re-use Policy of Urban West Bengal’. The Policy for re-use of treated wastewater was adopted in June 2020 and focused on strategies for recycling of water through appropriate centralised or decentralised technology and execution thereof in a time bound manner across urban areas. The policy set a targeted timeline of 2022 to re-use 25 *per cent* of treated wastewater.

The Policy further elucidated immediate objectives (*i.e.* those to be achieved in two years span), medium term objectives (to be achieved in next four years) and long-term objectives (in further four years).

²¹ (i) Himadri Chemicals and Industries Ltd, (ii) Jay Shree Chemical and Fertilisers, (iii) CESC coal washers, (iv) Shyam Tar Products and (v) Burdwan Kraft Board LLP.

The immediate objectives laid down in the Policy were to:

- Assess sources of generation of wastewater and quantity of wastewater production in urban West Bengal and create a Geographic Information System (GIS) enabled Management Information System (MIS)
- Identify bulk users of water like industrial clusters, Railways, Infrastructure projects *etc.* and quantify their potential water demand as bulk user of water
- Assess the existing centralised and decentralised plants of wastewater treatment especially the STPs, ETPs and CETPs and take appropriate measures for up-gradation or expansion.

The Policy also aimed at setting up of a State Level High Powered Committee under the chairmanship of Chief Secretary of the State, a State Level Steering Committee under the chairmanship of Principal Secretary of UD&MA for overall supervision, monitoring and policy advice, and a State Level Wastewater Management Cell at State Urban Development Agency (SUDA) for supervising the regular implementation and monitoring of waste water treatment and its use.

Audit scrutiny of the 34 selected STPs and 65 Industries (14 GPIs²² + 51 SPIs²³), revealed that 09 STPs and 23 industries did not have provision for re-use of treated wastewater and the treated water was discharged directly into drains. In four sampled industries, though re-use of treated water was stated to be done, the actual quantity of treated re-used wastewater could not be ascertained in the absence of a recording system.

Moreover, the stipulated GIS enabled MIS for mapping sources of generation of wastewater and quantity of wastewater production in urban West Bengal was not created till November 2023.

In reply, the Department stated (March 2024) that necessary instructions had been issued to water polluting industries and STP operators to maximise re-use of treated wastewater.

However, in absence of records regarding re-use of treated wastewater, the extent of actual re-use of wastewater could not be ascertained in Audit.

Recommendations 2:

WBPCB should ensure implementation of the State’s ‘Re-use of treated wastewater Policy’ and work towards achieving Zero industrial wastewater, as envisaged in SEP 2020.

3.4 Action Plan for abatement of pollution, rejuvenation, protection and management of identified Polluted River Stretches

In consequence to NGT’s²⁴ direction (September 2018), GoWB constituted (January 2019) a River Rejuvenation Committee (RRC) for the preparation of Action Plans for effective abatement of pollution, rejuvenation, protection and management of each of the identified polluted River stretches. ***As per the NGT***

²² GPI: Industries discharging effluents into water course and the untreated effluent which have BOD load of 100 kg per day or more, and/or handle hazardous substances.

²³ SPI: Industries discharging effluents into water course and under CPCB’s 33 SPI classified sectors.

²⁴ Order against the OA No. 673/2018.

order, Action Plans were required to be prepared within two months from the date of the said order. It was observed that though the Action Plans for all the 17 identified PRS were prepared by RRC, these Plans were approved by CPCB for implementation only between July 2019 and October 2020, *i.e.* after a delay of eight months to 23 months.

Audit observed the following deficiencies in rejuvenation of the identified polluted river stretches:

3.4.1 Identification of Polluting Sources of River Ganga

As per the Action Plan for Rejuvenation of River Ganga, the main causes of river water quality deterioration are i) discharge of industrial wastewater, ii) discharge of municipal wastewater and iii) pollution from non-point sources. To improve its water quality these three issues were required to be addressed.

It was, however, noted that the State did not have a database for non-point sources of pollution for assessment of pollution load and, therefore it was not included in the Action Plan for Rejuvenation of River Ganga. With respect to assessment of pollution from point sources viz. municipal sewage and Industrial effluents, audit comments are detailed below:

3.4.1.1 Assessment of pollution sources from municipal sewage from the Ganga front towns

Continuous assessment of water quality of important fresh water sources is a mandated responsibility of WBPCB. The river Ganga is one of the most important water sources in the State of West Bengal, covering 29 main towns in the State. The approved Action Plan (July 2020) for river Ganga identified 55 drains in the catchment of the polluted stretch of the River with approximately 1,084 MLD of total sewage generation requiring integration to existing as well as proposed STPs.

Audit observed that in 2022 CPCB monitored 104 drains, discharging untreated sewage into the river Ganga, twice a year, while WBPCB monitored 56 drains discharging into River Ganga fortnightly, leaving the rest 48 drains out of monitoring mechanism of WBPCB. Thus, designing of strategies for reducing pollution load of river Ganga, as envisaged in the Action Plan, based on continuous assessment, could not be achieved as all the identified polluting drains were not monitored by WBPCB. This was evident from the monitoring reports of CPCB (pre-monsoon 2022) that the BOD load of the 104 drains falling into river Ganga remained as high as 194.85 Ton per day (TPD).

Audit further observed that UD&MA submitted in the context of an NGT case (600/2018 in February 2022) that 402 drains had been identified by the UD&MA in 42 Ganga front towns discharging wastewater into the river Ganga.

However, Action Plan for the Ganga was not revised in consideration of the updated estimated sewage from the 402 drains, and the execution of the Action Plan continued with the initial estimation of 1,084 MLD from 29 towns consisting of 55 drains. Thus, remedial action for abatement of pollution of river Ganga was not commensurate with the actual extent of sewage discharged.

In reply, the Department stated (March 2024) that even small drains with flow less than one MLD had been included in the 402 drains list, and WBPCB presently monitors 105 major drains (with flow of one MLD and above).

However, WBPCB generates water quality monitoring reports for only 56 drains and the continuous quality assessment of remaining identified drains was yet to commence. Further, the Department did not provide any supportive documents regarding monitoring of 105 major drains by WBPCB.

3.4.1.2 Action Plan for connecting the drains falling into Ganga with STPs

According to the Action Plan for rejuvenation of river Ganga, 33 out of total 55 identified drains (29 towns) of the river Ganga were either connected or proposed to be connected to different STPs. For remaining 22 drains, as per the CPCB guidelines, the feasibility of the work in these channels was to be completed by February 2021, but the same was not completed, till December 2023.

The implementing agency, Kolkata Metropolitan Development Authority (KMDA) engaged two institutes²⁵ to assess the water quality and flow of 70 drains into river Ganga including previously identified 55 drains. The report was prepared by the institutes during 2022-23.

However, KMDA was yet to prepare project proposals for connecting the drains, falling into river Ganga, with STPs. Further, as per the CPCB’s latest report on Water Quality Monitoring of drains (pre-monsoon 2022), only one drain was tapped²⁶. As a result, untreated sewage drains into river Ganga directly causing pollution of the river.

Thus, it is evident that the Action Plan approved in July 2020 was deficient as it did not adequately address the pollution load encompassing the actual number of drains falling into Ganga. The implementation of the Action Plan was also deficient as only one drain was connected to an STP.

3.4.1.3 Assessment of Industrial effluents in the Action Plan of River Ganga

According to Section 25 and 26 of the Water (Prevention and Control of Pollution) Act 1974, no industry can discharge sewage or trade effluent into a stream or well or sewer or land beyond the permissible standards prescribed by CPCB.

Audit, however, observed that many drains²⁷ were carrying industrial effluents and coloured effluents from various industrial clusters²⁸. WBPCB had neither taken the initiative to find out the possible cause of the water pollution nor did it initiate an updating exercise of its database regarding water polluting industries during the Audit period as detailed below:

²⁵ Jadavpur University (JU) and the Indian Institute of Engineering, Science and Technology (IIEST), Shibpur.

²⁶ Construction of interception structures on the drains and diverting the drains water to STPs.

²⁷ Sarenga and Ramkrishna Ghat in Howrah, Green Channel in Haldia Churial in South 24 Parganas *etc.*

²⁸ Jalan Industrial Complex, Sankrail Industrial Complex, Food Park and Poly Park, Haldia *etc.*

(i) Source of industrial pollution through Sarenga Khal into Ganga not completely ascertained

NGT²⁹ on the issue of discharge of industrial effluents into the river Hooghly through *Sarenga Canal*³⁰, observed (July 2023) that WBPCB had not updated the numbers of water polluting industries of all the clusters³¹ in Howrah.

According to the advice of NGT, WBPCB visited (September 2023) the area in order to ascertain the status of various industrial units in the area and identify the possible sources of discharge to the said canal. Water quality analysis in August 2023 showed that the canal water had high BOD with Zero Dissolved Oxygen (DO). However, the final report on identifying the possible sources of discharge to the said canal was still to be prepared (November 2023).

A joint inspection of the *Sarenga Khal*³² in November 2023 with officials of WBPCB revealed that the canal water was brown in colour and presence of oil was palpable. Colour traces were seen in the canal water even near the confluence point.



Figure 3.1: Coloured canal water with traces of oil and grease

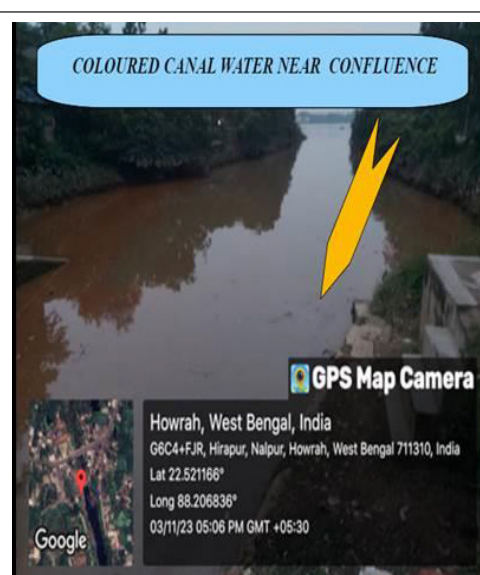


Figure 3.2: Coloured canal water near confluence

In reply, the Department stated (March 2024) that inspections were being carried out to identify industries polluting the canal. This indicated that source of industrial pollution through *Sarenga Khal* into river Ganga was yet to be ascertained by WBPCB.

(ii) Source of industrial pollution through Green Belt Canal yet to be ascertained.

Environment Pollution Abatement Action Plans for Haldia, *inter alia*, included monthly water quality monitoring of the **Green Belt Canal (GBC)**. The

²⁹ OA No. 75/2023/EZ.

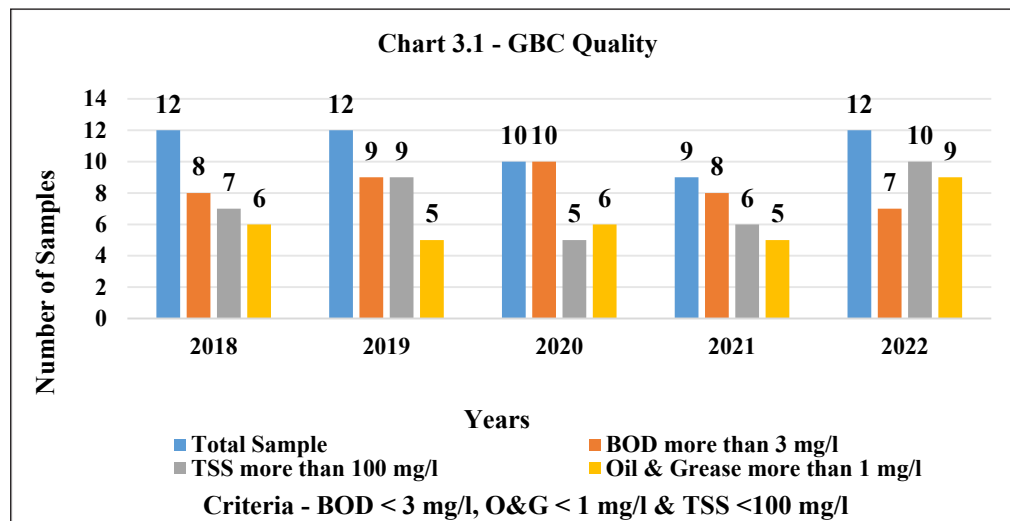
³⁰ Drainage channel of about 10.35 KM maintained by Irrigation and Waterways Department (I&WD) of GoWB, drains industrial effluent from these clusters.

³¹ Bamungachi Industrial Cluster, Food Park, Poly Park, Jalan Industrial complex and Sankrail Industrial Complex.

³² Means drain/canal carrying industrial sewage.

industries of the major industrial town-*Haldia*, discharge their treated effluents in the GBC, which drains into the *HalDI* River, a tributary of river Hooghly. The water quality of GBC is monitored monthly by WBPCB at 11 sampling stations. The rationale was that the water quality of GBC at different locations can be used as an indicator of the quality of discharges from individual industries, as most of the industries are having typical characteristic discharges to the GBC.

Analysis of the monitoring data for the period from 2018 to 2022 of the 11 sampling points of the canal revealed that the parameters like Biological Oxygen Demand (BOD), Oil and Grease (O&G) and Total Suspended Solids (TSS) regularly exceeded the norms as shown in the **Chart 3.1**.



Further, at the discharge point (*Patikhali* gate) into the river Hooghly, the above parameters were seen to be high during the period 2018-23 as in **Table 3.1**.

Table 3.1: Test result of GBC at Near *Patikhali* gate (Max in a Year)

Year	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	Oil and Grease (mg/l)	Sulphide (mg/l)
2018	1,436	206.00	12.50	1.50	3.456
2019	1,488	421.81	160.00	3.04	0.390
2020	576	338.78	150.00	1.70	BDL*
2021	790	351.02	180.00	2.20	BDL
2022	576	56.84	29.06	3.40	BDL
Criteria	100	50	3	1	1

*Below Detection Level

Audit conducted a joint inspection of the GBC along with officials of the WBPCB in October 2023 and observed that at the first sampling point of GBC, Oil and Grease was distinctly visible on the water surface. It was also observed that the canal became narrow from the sampling point 6 onwards due to siltation.



Figure 3.3 :1st sampling point of GBC, Oil and Grease was distinctly visible on the water surface

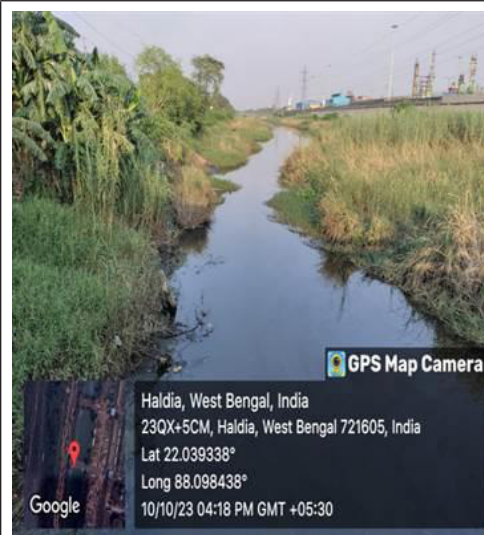


Figure 3.4: Narrow stretch of green belt canal from the sampling point 6 onwards due to siltation

However, records regarding analysis of the possible sources of water pollution were not available. In reply, the Department stated (March 2024) that inspections were being carried out to identify the polluting industries to the said canal.

(iii) Source of pollution discharging into Ramakrishna Ghat drain yet to be identified.



Figure 3.5: Ramakrishna Ghat drain

Ramakrishna Ghat drain (Howrah) is one of the drains carrying mixed effluent and discharges directly into the river Ganga. A detailed study was carried out by CPCB in April 2022 to identify the source of pollution at the catchment area of the drain. CPCB observed that untreated industrial effluent, laced with heavy metal concentrations of minerals (*i.e.* Cd, Cu, Fe, Pb, Mn, Ni and Zn), was discharged into the canal.

Based on the study report, CPCB issued (November 2022) directions to WBPCB to identify the source of discharge of high metal bearing acidic

effluent into the drain and take necessary action to stop the discharge of untreated effluent. WBPCB was also directed to prepare an action plan for interception and diversion, and treatment of the above drain.

Audit observed that WBPCB had neither updated its inventory for polluting units on the lines of CPCB's direction in November 2022, nor had it prepared an action plan for interception and diversion of the above drains. In the absence of an action plan, concerted effort could not be initiated for abating pollution to the drain.

In reply, the Department stated (March 2024) that it had conducted inspections of several units which were discharging untreated effluent to *Ramkrishna Ghat* drain, and it had ordered for closure of five units in April 2023.

However, the updated inventory for polluting units was not on record, and interception and diversion work was not initiated in respect of the *Ramkrishna Ghat* drain.

(iv) Inventory of the dyeing units discharging untreated colour effluents directly into the municipal drains

An STP with a capacity of 9.5 MLD was commissioned with effect from July 2022 at *Nabadwip*, Nadia district. Joint field inspection of the STP with the KMDA officials in November 2023 showed that the treated effluent was brown in colour with foam. Observing the treated effluent, some dyeing units were inspected on the same day, and it was noticed that the units were operating without effluent treatment facilities and the coloured discharge was directly falling into the municipal drains of *Nabadwip* town which is connected to the STP designed for treating municipal sewage only.



Figure 3.6 : Final treated discharge with colour and foam

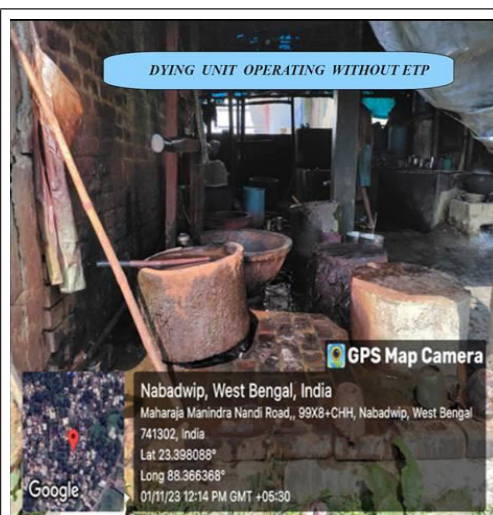


Figure 3.7 : Dyeing unit operating without ETP

Audit observed that the concerned Executive Engineer of KMDA, informed (July 2023) Barrackpore Regional office, WBPCB regarding the mixing of industrial colour/dye with drain water thereby, affecting the performance of the STP as it was equipped to treat municipal waste only.

However, remedial action taken by the WBPCB was not found on record. Moreover, an inventory of the dyeing industries in this area was also not available with WBPCB.

In reply, the Department stated (March 2024) that regulatory actions against two dyeing units at *Nabadwip* for discharging untreated effluent had since been initiated.

(v) Inventory of the dairies discharging untreated effluents

“Guidelines for Environmental Management of Dairy Farms and Gaushalas” were issued by the CPCB in July 2020. The major environmental issues, as per

the guidelines, are discharge of cow dung and urinal wastewater into drains and rivers without any treatment. To address the environmental issues, the guidelines prescribed measures for management of both solid and liquid wastes from dairy farms and gaushalas in addition to the Siting Policy³³ and Regulatory/Monitoring Mechanism of WBPCB. The guidelines, *inter-alia*, stipulated the following:

- Preparation of inventory of the dairy farms and gaushalas,
- The SPCB shall publish a public notice for dairy farms to obtain Consent To Establish (CTE) and Consent To Operate (CTO) under Water Act, 1974 as well as Air Act, 1981 as per the categorisation of industries.
- Dairies and gaushalas should ensure that the wastewater, being discharged is adequately treated so as to meet the standards as prescribed by SPCBs.

Audit further observed that WBPCB was yet to implement a plan for the Environmental Management of Dairy Farms and Gaushalas and bring these farms under consent management³⁴. Inventory of the dairy farms and Gaushalas was not prepared (November 2023).

Audit observed from the records of WBPCB that cow dung is being regularly discharged into the Damodar Valley Corporation (DVC) canal, linked to river Ganga, by more than 200 cattle sheds which exist in this stretch of the canal. Direct discharge of cow dung into the canal causes severe water pollution in the canal and a considerable part of organic load was reaching the river.

From the monitoring report (2018-22) of CPCB for the canal, it was observed that at the outfall point on River Ganga, the BOD load varied from 6.36 to 54.64 Tonnes Per Day (TPD) with an average of 24.33 TPD. The coliforms (Total and Faecal) counts were significantly high indicating the discharge of domestic wastewater into the canal. *Nazirgunj Khal* which carries the wastewater of DVC canal also indicated that the average BOD, COD concentrations (Average 49.20 mg/l and 227.60 mg/l respectively) did not comply with the general standards for discharge of environmental pollutants into inland surface waters.

NGT (March 2023) passed orders for setting up of a Bio-gas plant, dredging of DVC canal, removal of illegal khatahs/cow sheds/cattle sheds and putting in place appropriate sewerage management plan.

Audit conducted a joint inspection of the DVC canal with representatives of WBPCB, *Dankuni* Municipality and Irrigation and Waterways Department (I&WD) in November 2023, and observed the following:

- Discharge of cow dung into the canal was continuing. The Irrigation and Waterways Department (I &WD) incurred an expenditure of ₹ 6.76 crore during 2022-23 to 2023-24 to clean the canal.
- The proposed bio-gas plant was yet to come up. There were no records available in support of bringing the dairies under consent management of WBPCB.

³³ Siting policy clearly bring out the areas to be avoided for establishment of polluting industries.

³⁴ Soliciting consent from WBPCB for establishing and operating units having impact on environment.



Figure 3.8 : Dankuni Canal filled with cow dung

In reply, the Department stated (March 2024) that setting up of a bio-gas plant is under process.

Thus, inability in bringing the Dairy Farms and putting Gaushalas under consent management coupled with laxity in charting out an appropriate sewerage management plan caused considerable organic load in the DVC canal. It also led to polluted discharge into the river Ganga, with BOD concentration at an average of 28 mg/l against the norms of 3 mg/l.

Recommendation 3:

WBPCB should periodically update its database of pollution sources, including non-point sources for assessment of actual pollution load so that the pollution can be addressed before discharge into canals, rivers and other water bodies.

3.4.2 Finalisation of Action Plan for the river Vidyadhari without proper survey

Action Plan for rejuvenation of the 20 kms stretch of river *Vidyadhari*³⁵ (July 2019) stated that the river runs through rural areas and had no major towns on its banks. The major villages on its banks were *Haroa*, *Minakhan* and *Malancha*. The total sewage generation in the catchment area was estimated to be 1,539.24 MLD.

Public Health Engineering Department (PHED), Government of West Bengal entrusted (March 2021) the project “*Preparation of Concept Plan and Detailed Project Report for rejuvenation of the polluting stretch of River Vidyadhari*” to IIT Kharagpur. The Action Plan, prepared in July 2019, assumed that no municipal town contributes to the sewage flowing into the river Vidyadhari. Draft Report on ‘Preparation for Concept Plan and Detailed Project Report for Rejuvenation of the River’, submitted by IIT indicated that STPs for

³⁵ From Haroa Bridge to Malancha Burning Ghat.

six Municipalities³⁶ contributing an estimated sewage of 186 MLDs as of 2021 needed to be considered for setting up instead of PHED's original estimation of one STP for 170 MLD at *Ghusighata*.

Audit observed that detailed design work for setting up of STPs in the six municipalities could not be started due to non-availability of land, which was to be provided by the concerned ULBs. In the 15th RRC meeting (September 2022), it was decided that as river *Vidyadhari* was receiving wastewater through different canals of Kolkata Metropolitan Area, KMDA would prepare project proposals for setting up of Faecal Sludge Treatment Plants (FSTPs)/STPs wherever feasible. However, as of March 2024, such proposals for setting up of FSTPs/STPs had not been finalised.

Audit further observed that five STPs³⁷ with an aggregate sewage treatment capacity of 117.20 MLD were planned for *Bagjola-Keshopur Khal*, falling into river *Vidyadhari*, with target date of completion being May 2024. However, construction work for the five STPs had not commenced till August 2023 due to non-availability of land.

In reply, the Department stated (March 2024) that the work of setting up STPs in municipal towns had been initiated.

Thus, delay in construction of proposed STPs allowed *continued flow of untreated sewage into the river Vidyadhari*.

3.4.3 Assessment of risks of polluted water to environment and health

Polluted water in rivers, lakes and ground water poses risks to environment as well as health of people exposed to the polluted water.

Risks to human health from water borne diseases and water-based diseases because of pollution of rivers and lakes were not assessed while preparing the Action Plans for rejuvenation of polluted water stretches.

Further, Environment Department was yet to inventorise (as discussed in **Paragraphs 3.3.1 and 3.3.2**) water bodies including wetlands for their regulation to protect biodiversity and ecosystems.

In reply, the Department stated (March 2024) that in the 17th Meeting (December 2023) of the RRC, it was decided that the Department of Health, GoWB would initiate regular health check-ups at bathing ghats to gauge the health impact due to change in the water quality of the river.

³⁶ Barasat, Dumdum, Madhyamgram, New Barrackpore, North Dumdum and Rajarhat-Gopalpur.

³⁷

Sl No.	Location	Proposed capacity (MLD)
1	For Kestopur Khal- Adjacent to the premises of existing Bagjola STP at Prafullakanan, Kestopur	41
2	At Bonhooghly in Baranagar Municipality	8.7
3	At Prafullakanan in North Dum Dum Municipality	33
4	At Prafullakanan STP-1 in South Dum Dum Municipality	27
5	At Jatragachi in Bidhannagar Municipal Corporation	7.5

Recommendation 4:

The Environment Department should consider risk to human health and environment while preparing action plans for mitigation of pollution of water.

3.4.4 Non-establishment of Water Quality Review Committee

Assessment of water quality is essential for pollution control, to prevent health hazards and from an environmental angle. Government of India (GOI) vide its order (May 2001) established the Water Quality Assessment Authority (WQAA) for exercising powers under the Environment Protection Act, 1986. The role of the Authority, *inter alia*, involves issuing directions to the State Government and Local Bodies for prevention and control of water pollution. The order also directed the State Governments to constitute a State Level Water Quality Review Committee (WQRC) to improve co-ordination between Central and State agencies for effective monitoring of quality of both surface and ground water resources including identification of Hot Spots for taking necessary action for improvement of water quality.

Audit further observed that the 6th meeting of WQAA in March 2008, decided to reconstitute the State level WQRCs to make them more result oriented and have relevant linkages with water resource management at the State level. Ministry of Water Resources (MoWR) had requested (July 2008) the States to reconstitute the state level WQRC.

Audit however, noticed that WQRC was not constituted in the State even after a lapse of 23 years from the establishment of Water Quality Assessment Authority.

WBPCB stated (March 2024) that drinking water quality is guided by the Ministry of Water Resources standards, and the wastewater quality by the Ministry of Environment and Forest standards.

However, in the absence of WQRC, effective review of the quality of both surface and ground water resources and identification of Hot Spots for taking necessary action for improvement of water quality was not done.