

Executive Summary

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The National Green Tribunal (NGT) passed an order in 2018 directing states to revise, prepare and implement Action Plans to restore polluted river stretches and to ensure 100 *per cent* treatment of sewage by 31 March 2020. The timeline for completing all steps of the Action Plans including completion of setting up of Sewage Treatment Plants (STPs) and their commissioning was 31 March 2021.

NGT passed another order in 2019 to check compliance with several statutory requirements related to waste and environment management and advisories issued to the States. CPCB had identified (2017) 17 polluted river stretches where River rejuvenation programme was to be implemented.

Goal 6 of the Sustainable Development Goals (SDGs) calls for access to safe and affordable drinking water, sanitation facilities, and hygiene for all by 2030. According to the SDG index-2020 of NITI Aayog, as regards the performance of West Bengal against SDG-6 (Clean water and sanitation), it was observed that the score of the State declined to 81 from 83 in 2019.

Further, research studies showed impact of water pollution on agriculture produce and aquatic animals in the State as well as risks to human health from water contamination *such as Diarrhoea, Enteric Fever, Vibrio cholera etc. and prevalence of Arsenicosis and Fluorosis.*

Thus, Audit decided to study the issue of water pollution through a Performance Audit.

(Paragraph 1.7)

Significant Audit Findings:

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

- 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, 2012. 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.

(Paragraph 3.2)

- The State Environment Plan-2020 aimed at preparation of inventory of water bodies as a Short term Action Plan. 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).

(Paragraph 3.3.1)

- 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 discharge, encroachments *etc.* was also not possible.

(Paragraph 3.3.2)

- Out of total 128 Urban Local Bodies (ULBs) in the State, only six ULBs were covered under Faecal Sludge and Septage Management, as of November 2023.

(Paragraph 3.3.3)

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

(Paragraph 3.3.4)

- Out of 34 selected STPs and 65 industries, 09 STPs and 23 industries did not have provision for re-use of treated wastewater and the treated water was discharged directly into drains. The stipulated GIS enabled MIS for mapping sources of generation of wastewater and quality of wastewater production in urban West Bengal was not created till November 2023.

(Paragraph 3.3.5)

- 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.

(Paragraph 3.4.1)

- 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.

(Paragraph 3.4.1.1)

- According to the Action Plan for rejuvenation of river Ganga, 33 out of total 55 identified drains of the river Ganga were either connected or proposed to be connected to different STPs. For the remaining 22 drains, feasibility of work was to be completed by February 2021, but the same had not been completed, till December 2023. The implementing agency, Kolkata Metropolitan Development Authority (KMDA) was yet to prepare project proposals for connecting the drains, falling into the river Ganga, with STPs. As a result, untreated sewage was draining into the river Ganga directly causing pollution of the river. 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.

(Paragraph 3.4.1.2)

- WBPCB was yet to implement a plan for the Environmental Management of Dairy Farms and *Gaushalas* and bring these farms under consent management as stipulated in Guidelines for 'Environmental Management of Dairy Farms and *Gaushalas*' issued by CPCB in July 2020. 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.

(Paragraph 3.4.1.3 (v))

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

(Paragraph 3.4.3)

- Water Quality Review Committee was not constituted in the State even after a lapse of 23 years from the establishment of Water Quality Assessment Authority.

(Paragraph 3.4.4)

Municipal Sewage treatment for restoration of Polluted River stretches and Lakes

- NGT set a deadline of March 2021 to take all steps for rejuvenation of polluted river stretches including setting up of STPs and their commissioning. As of March 2021, the estimated sewage generation for the State was 5,457 MLD and the total capacity for sewage treatment of the 29 existing and 36 proposed STPs was 1,202 MLD. However, installed capacity of STPs was only 897 MLD (16.44 *per cent*) causing a gap of 4,560 MLD. There was a huge gap between sewage generation and the capacity available for its treatment, leading to deterioration of water quality of rivers.

(Paragraph 4.2)

- The sewage treatment capacities were impaired in the absence of an adequate sewerage conveyance system including connecting to the household sewer line, non-installation of disinfection system, deficient co-ordination among different agencies and deficient functioning of established infrastructure *etc.*

(Paragraph 4.3)

- Out of 41 commissioned STPs, 26 STPs were in operation with an installed capacity of 383.8 MLD. Only 232.5 MLD was being utilized *i.e.* 60.60 *per cent* of 383.80 MLD. There was a gap of 1,339 MLD in treatment capacity and almost 85 *per cent* of total sewage generated was released into the river Ganga without treatment.

(Paragraph 4.3.1)

- Due to inadequate/inefficient sewage treatment facilities for drains discharging into the river Ganga, the pollutant load in the river water continuously exceeded the prescribed limits during the period 2018-23.

While the number of times BOD breached the prescribed limit ranged between 15-46 *per cent* of total tests conducted, FC was above norms in 74-97 *per cent* of test cases, and DO did not meet the prescribed standards in one to 18 *per cent* tests.

(Paragraph 4.3.4)

- In consideration of the ecological importance of the East Kolkata Wetland (EKW), WBPCB was supposed to carry out water analysis tests of EKW. Quality analysis of water of EKW at two outlets (*Bamanghata Jalpath* and *Uttar hatgachha*) had been carried out by WBPCB during June 2018 to May 2019, but thereafter, no such tests were carried out. Surveillance of physicochemical and biological properties of the wastewater that entered into EKW was not undertaken by WBPCB. In the absence of a continued monitoring mechanism, the qualitative nature of the sewage entering EKW and the efficiency of sewage treatment through aquaculture could not be assessed.

(Paragraph 4.4.1)

- Due to the delay in finalisation of project report of STPs for about 42 months, sewage treatment infrastructure for river *Mahananda* was non-operational. As a result, water quality of the river *Mahananda* got deteriorated. As per the water quality tests conducted by WBPCB during the period 2018–23, the BOD and FC exceeded the prescribed limits by CPCB.

(Paragraphs 4.5.1 & 4.5.3)

- Inability of the Public Health & Engineering Department (PHED) in timely taking up the integration of household sewage collection system with the STP coupled with inaction of WBPCB in restricting the hotels from unauthorisedly discharging directly into the river led to deterioration in the water quality of the river *Dwarka*.

(Paragraph 4.7)

- *Gorkhaland Territorial Administration* (GTA) had prepared DPR for improvement of drainage and sewerage system in *Mirik Lake*. The DPR envisaged construction of three STPs having sewage treatment capacity of 1,200 Kilo Litre Per Day. The STPs were completed in June 2019 after incurring an expenditure of ₹ 36.30 crore by the GTA. However, the STPs were not operationalized and pollution in the lake continued unabated.

(Paragraph 4.9)

Industrial Wastewater Management

- Five out of 51 sampled Seriously Polluting Industries (SPIs) were operating without valid Consent to Operate (CTO) which had already expired for periods ranging between 05 to 48 months.

(Paragraph 5.2)

- Mandatory 08 and 20 number of inspections in case of SPI and GPI respectively were not carried out by WBPCB during 2018-23 in case of nine industries.

(Paragraph 5.2.3)

Ground Water Quality Management

- The steady decline in water level and gradual transformation of safe and semi critical blocks into critical blocks during the period 2020-22 indicated that there was a sharp decline in ground water level.

(Paragraph 6.2)

- In the two-arsenic affected selected districts (*Nadia* and *North 24 Paraganas*), out of a population of 63.15 lakhs covered under ground water based Functional Household Tap Connection (FHTC), 46 lakh *i.e.* 73 *per cent* were not provided with Arsenic Iron Removal Plants (AIRP) under Piped Water Supply Schemes (PWSS), although the areas were arsenic affected.

(Paragraph 6.3.1.2)

- As of December 2023 under the PWSS, only 1.48 lakh, out of 4.61 lakh fluoride affected households of *Birbhum* district were provided with FHTC *i.e.* only 32 *per cent* of households are getting treated piped water.

(Paragraph 6.3.2.2)

- Out of 128 ULBs in the State, 79 did not have solid waste processing facilities and the waste got disposed at dumping grounds. As per the Annual Report of WBPCB for the year 2022-23 only 23 *per cent* of waste generated was processed as of March 2023. The unprocessed fresh waste was gradually getting converted into legacy waste and adding to dumpsites. As of August 2023, there were 123 dumpsites in the State having a legacy waste of 111.44 lakh MT, of which only 49.68 lakh MT of legacy waste was processed leaving a balance of 61.76 lakh MT.

(Paragraph 6.3.4)

Monitoring of Water Quality

- According to CPCB's guidelines, monitoring stations at both upstream and downstream of a river needed to be established by the State PCBs. There was only one monitoring station each against the stipulated two (upstream and downstream) for nine Polluted River Stretches. Thus, the monitoring of ground water quality was not satisfactory as the data generated was based on a limited number of testing locations.

(Paragraph 7.2.2)

- According to Solid Waste Management Rules, 2016, the ground water quality within 50 meters of the periphery of a landfill site shall be periodically monitored by State PCB covering different seasons in a year to ensure that the ground water is not contaminated. Out of 123 landfill/dumpsites, WBPCB had only one ground water monitoring station at one dumpsite (at *Dhapa*, Kolkata). In the absence of adequate number of ground water quality monitoring stations, around the periphery of dumpsites, the extent of ground water contamination due to leaching could not be assessed by Audit.

(Paragraph 7.2.3)

- According to CPCB’s status report for West Bengal STPs as of March 2023, there were 11 non-operational STPs out of a total of 41 on the river Ganga. Due to non-operation of STPs, the management of municipal sewage, as conceived in related action plans, could not be effectively undertaken, and the river Ganga continued to receive untreated sewage.

(Paragraph 7.4.1)

- Only 16 industrial units had the Online Continuous Emission Monitoring System (OCEMS), developed by CPCB, out of 65 sampled industries. Thus, real time tracking of discharge of pollutants could not be effectively implemented even after more than four years of CPCB’s instruction.

(Paragraph 7.5)

Recommendations:

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.*
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. *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.*
4. *The Environment Department should consider risk to human health and environment while preparing action plans for mitigation of pollution of water.*
5. *Urban Development & Municipal Affairs (UD&MA) Department should complete the ongoing STPs as well as operationalize the non-functional STPs at the earliest and ensure strict compliance with environmental norms in their operations.*
6. *WBPCB should bring East Kolkata Wetlands into its regular monitoring schedule and plan for effective remedial measures.*
7. *Urban Development & Municipal Affairs (UD&MA) Department should complete the projects related to connections of household sewage with STPs and tapping of drains not connected with STPs on priority basis.*
8. *WBPCB should ensure that Industrial units are in possession of valid CTOs and impose penalties in case of lapses.*
9. *WBPCB should strengthen its monitoring mechanism to adhere to the required number of inspections and ensure compliance by polluting industries.*
10. *WBPCB needs to enforce, through consent management, treatment of all industrial effluents, with special emphasis on installation of CETPs in clusters for the unorganized small industries.*

- 11. Authorisation for groundwater abstraction should be strictly regulated and monitored through the consent administration of WBPCB.*
- 12. PHED should implement schemes in a time bound manner to reduce cases of arsenic and fluoride contamination and provide safe and clean drinking water to the entire affected population.*
- 13. UD&MA should take measures for effective implementation of Solid Waste Management Rules, 2016 and set up adequate waste processing facilities to prevent water contamination due to leaching.*
- 14. WBPCB should establish a representative number of stations/locations for water quality monitoring, particularly in the identified hot spots.*
- 15. Government should implement the proposal of the State Board on engagement of manpower and strengthen the water quality monitoring mechanism for effectively carrying out its mandate.*
- 16. WBPCB should develop and upgrade its laboratories and obtain National Accreditation Board for Testing and Calibration Laboratories (NABL) Accreditation, Occupational Health and Safety Management System (OH&SMS) certification and EPA recognition by Ministry of Environment Forest and Climate Change (MoEF&CC) to enhance assurance level.*
- 17. WBPCB should monitor all the STPs regularly and take action to ensure that the STPs were working and were complying with the discharge standards. It should also ensure installation of Online Continuous Emission Monitoring System (OCEMS) for STPs/ETPs and use the data for effective surveillance and monitoring.*

