

Item No. 01

Court No. 1

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

Original Application No. 200/2014

M.C. Mehta

Applicant(s)

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 12.12.2019

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CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE S.P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER

ORDER

S. No.	CONTENT	PARA No.
I	The issue: Review of progress of compliance of directions of this Tribunal to prevent and remedy pollution of river Ganga in the light of orders of the Hon'ble Supreme Court dated 29.10.2014 and 24.01.2017 in W.P.(C) 3727/1985	1-4
II	Constitution of Monitoring Committees headed by former Judges in the States of Uttarakhand and Uttar Pradesh vide orders dated 29.11.2018 and 06.08.2018 to oversee execution of Action Plans in the light of stipulated timelines	5
III	Further monitoring, in the light of reports of the Monitoring Committees, vide orders dated 11.03.2019, 14.05.2019 and 29.05.2019. Issue of waste management in 97 'Ganga Towns' and directions for zero discharge of pollutants in Ganga, making concerned officers accountable to be monitored by the Chief Secretaries' of the concerned States	6-9
IV	Monitoring by the Tribunal on last date of hearing i.e. 22.08.2019, fixing strict timelines with consequence of requiring payment of compensation by the defaulting States and NMCG and action against the erring officers	10-12
V	Issue of shifting of Chromium dump in existence since 1976 affecting ground water at Rania, Kanpur Dehat/Rakhi Mandi, UP.	13
VI	Final reports of Justice Tandon Committee for UP and Justice Dhyani Committee for Uttarakhand and progress reports filed by States/NMCG in the light of order dated 22.08.2019 and report of CPCB in terms of order dated 14.05.2019 on the subject of biodiversity parks	14-22
VII	Consideration	23-26
VIII	Future Monitoring Mechanism after submission of final reports by the Committees constituted by the Tribunal earlier	27

IX	Directions	28
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I. The issue: Review of progress of compliance of directions of this Tribunal to prevent and remedy pollution of river Ganga in the light of orders of the Hon'ble Supreme Court dated 29.10.2014 and 24.01.2017 in W.P.(C) 3727/1985:

1. This order may be read in continuation of order dated 22.08.2019 with regard to reviewing the progress of compliance of directions of this Tribunal dated 10.12.2015 and 13.07.2017 on the subject of preventing and remedying the pollution of river Ganga. The matter was earlier being considered by the Hon'ble Supreme Court since the year 1985, before being transferred to this Tribunal, in the year 2014 and 2017¹.
2. The Tribunal dealt with the pollution caused on account of illegal discharge of untreated sewage and industrial effluents either directly into the River Ganga or its tributaries and connected drains besides issues of dumping of solid waste, bio-medical waste, hazardous waste, plastic waste, muck and other waste, illegal sand mining, illegal encroachment of the floodplains, absence of steps for conservation of ground water, reuse of treated water, restoration of water bodies and maintenance of e-flow.
3. The matter was dealt with by orders dividing the area covered by the River Ganga into different phases and segments. Order dated 10.12.2015 dealt with **Phase-I – Segment-A**: Gaumukh to Haridwar. Order dated 13.07.2017 dealt with **Phase-I – Segment B**: Haridwar to Kanpur. Further order dated 06.08.2018 deals with **Phase-II**: Kanpur to Uttar Pradesh Border, **Phase-III**: UP Border to Jharkhand

¹ M.C. Mehta vs. Union of India & Ors. Writ Petition (Civil) No. 3727/1985 order dated 29.10.2014 (2015) 12 SCC 764 and 24.01.2017

Border (via Bihar), and **Phase-IV**: Jharkhand Border to Bay of Bengal (West Bengal).

4. As already noted, the proceedings have been pending since 1985. Various orders have been passed by the Hon'ble Supreme Court on the subject before transfer of proceedings to this Tribunal and thereafter by this Tribunal. The result of monitoring for 34 years has not been encouraging. Government of India took initiatives by way of Ganga Action Plans I & II and thereafter by way of *Namami Gange*. The progress so far has been far from satisfactory, as noted in earlier orders.

II. Constitution of Monitoring Committees headed by former Judges in the States of Uttarakhand and Uttar Pradesh vide orders dated 29.11.2018 and 06.08.2018 to oversee execution of Action Plans in the light of stipulated timelines:

5. While considering the progress of compliance of orders of this Tribunal, vide order dated 19.07.2018 with regard to **Phase-I - Segment-A** and order dated 27.07.2018 with regard to **Phase-I - Segment-B**, the CPCB/SPCBs were required to display the result of water samples at various locations and atleast at one place within 100 kms showing whether water was fit or not fit for consumption or for bathing. A Monitoring Committee was constituted headed by a former Judge of the Uttarakhand High Court for **Phase-I Segment-A** and Allahabad High Court for **Phase-I Segment-B** vide orders dated 29.11.2018 and 06.08.2018 respectively to take stock of the actions taken with clear measurable indicators of progress and success and to oversee the action plans. The actions were required to cover interception and diversion of drains carrying sewage to STPs, laying

of sewerage network, utilization of treated sewage, compliance of norms by industries in the catchment areas, ground water regulation, flood plain regulation, rain water harvesting systems, good irrigation practices and filing list of industries which have the potential for pollution and creation of bio-diversity parks. Vide order dated 29.11.2018, the Tribunal reviewed the progress in **Segments A and B of Phase-I** on STPs, CETPs and tapping of drains with reference to the laid down timelines and also compliance of MSW Rules, setting up of bio-digesters, sewerage network, improvement in water quality, unregulated ground water extraction, e-flow, public involvement, decentralized waste processing facility close to the source of generation of waste, protection of floodplains and illegal mining. The Tribunal also observed that there was need to prepare a model DPR and standard terms and conditions for tenders to save time and cost. Further directions for public awareness programmes in the light of observations of the Hon'ble Supreme Court were also issued.

III. Further monitoring, in the light of reports of the Monitoring Committees, vide orders dated 11.03.2019, 14.05.2019 and 29.05.2019. Issue of waste management in 97 'Ganga Towns' and directions for zero discharge of pollutants in Ganga, making concerned officers accountable to be monitored by the Chief Secretaries' of the concerned States:

6. Again, on 11.03.2019, deficient working of CETPs at Jajmau, Banthar and Unnao was considered and directions were issued to consider closure of non-compliant units to improve the water quality.
7. Vide order dated 14.05.2019, this Tribunal considered the report from Justice U.C. Dhyani with regard to **Segment-A of Phase-I** dated 09.05.2019 *inter-alia* pointing out non-compliance in respect of the

STPs. The Tribunal directed remedial action including recovery of environmental compensation in view of repeated failures to comply with the directions by the Hon'ble Supreme Court and this Tribunal for the last 34 years. NMCG was to ensure compliance with regard to prevention and removal of encroachments, maintenance of e-flow, afforestation and setting up of bio-diversity parks, ground water regulation, sand mining regulation, stopping any camping on the banks of river Ganga or its tributaries. With regard to **Segment-B of Phase-I**, after noting that the industries were discharging untreated effluents in river Ganga, the Tribunal directed closure of all activities of the members of the dysfunctional CETPs, until the CETPs are compliant. It was further directed that only treated effluents may be discharged into the River Ganga and its tributaries. Further direction was that coercive measures be taken against officers of UPPCB and NMCG colluding in permitting continued operations of polluting activities. Direction was also given for remediation of chromium dumps at Kanpur Dehat, Khanpur and Rakhi Mandi in Uttar Pradesh and ensuring of proper e-flow from the Narora Barrage.

8. With regard to **Phase-II to IV**, NMCG, in co-ordination with State Governments of Uttarakhand, Bihar, Jharkhand, West Bengal and Uttar Pradesh, was to file Action Plans with firm timelines on the subjects of interception and diversion of drains, utilization of treated sewage, compliances by industries in the catchment area, ground water regulation, flood plain regulation, rain water harvesting and good irrigation practices for water conservation in the light of order of this Tribunal dated 13.07.2017. NMCG was to give information about

status of projects planned and executed between Kanpur to Ganga Sagar. Status of water quality in Uttarakhand, Bihar, Jharkhand, West Bengal and Uttar Pradesh was to be displayed on their respective websites. CPCB was also to indicate such status on its website. Flood plains were to be demarcated, encroachments removed, bio-diversity parks set up, afforestation works undertaken, guidelines for bio-diversity parks prepared by the CPCB and the MoEF&CC, flood plains were to be handed over to the State Forest Departments.

9. Vide order dated 29.05.2019, it was directed that Ganga pollution be monitored directly by the Chief Secretaries in view of such monitoring having already been directed in respect of 351 polluted river stretches in different States by the Chief Secretaries vide order dated 16.01.2019 in O.A. No. 606/2018² dealing with solid waste management and orders in O.A. No. 673/2018 dealing with polluted river stretches. No construction zone distance on flood plains was to be measured from the Highest Flood Line (HFL) in the last 25 years and flood plains were to be identified on longitude and latitude. Responsibility for plantations and administrative control of areas beyond HFL were to be handed over to the Forest Departments. UPSPCB was directed to prohibit industrial polluting activities and to revise compensation regime so as to recover the actual cost of restoration. State of UP was to provide funds for remediation of Chromium dumps. E-flow was to be maintained as earlier directed in order dated 29.11.2018. Encroachments were to be removed. Tapping

² Compliance of Municipal Solid Waste Management Rules, 2016

of remaining drains and prevention of pollution was to be expeditiously ensured. After noting the status of progress on sewage infrastructure projects in the Ganga Basin, the Chief Secretaries of Bihar, Jharkhand and West Bengal were directed to effectively monitor the progress. Timelines were directed to be reviewed and prepared. NMCG was to undertake progress on reduction of pollution load and improvement of water quality. Further road map, including identification of accountable persons and taking actions for the lapses was to be prepared.

IV. Monitoring by the Tribunal on last date of hearing i.e. 22.08.2019, fixing strict timelines with consequence of requiring payment of compensation by the defaulting States and NMCG and action against the erring officers:

10. Status of compliance was further considered vide order dated 22.08.2019 with reference to following specific issues:

- i) Prevention of discharge of untreated industrial waste and sewage in the River Ganga and its tributaries, including tapping of drains and bio-remediation, as applicable;
- ii) Installation of STPs, CETPs, and making existing CETPs functional (including at Jajmau, Banthar and Unnao) and enhance the capacities, so assessed and monitoring of the standards before discharge of water into Ganga River;
- iii) Installation of Continuous Emission Monitoring System (CEMS) at appropriate locations and Online Monitoring System (OMS);
- iv) Usage of treated waste water, of sludge manure and setting up of bio-digesters and septage management;
- v) Preventing dumping of waste and scientific waste management including bio-medical wastes, plastic wastes and decentralizing waste processing, including waste generated from hotels, ashrams, etc.;

- vi) Floodplains identification and zone demarcation with restrictions against any development/ construction /encroachment;
- vii) Maintenance of E-flow as notified by Ministry of water Resources including releasing water by Hydel projects and barrages; and
- viii) Other directions including displaying water quality data in public domain and at prominent places, development of bio-diversity parks, prohibition of river bed mining, remediation of chromium dumpsites in Uttar Pradesh, collection of compensation from violators and involvement of society including religious, charitable, social and educational institutions for preventing and remedying pollution of River Ganga.

11. The Tribunal considered the progress State-wise as follows:

“State of Uttarakhand (Phase-I, Segment-A)

15. *Learned ASG appearing for the State of Uttarakhand has indicated progress on the subjects of STPs, use of treated water, action against polluting industries, compliance of norms by hydropower projects, water quality monitoring, e-flow, plantation in bio-diversity parks, action against violators and erring officers and contractors and bio-remediation of sewage. In short, the information furnished shows that out of 18 projects for setting up of STPs, 9 have been completed and the remaining will be completed upto February 2020. Water quality upto Rishikesh was ‘A’ class and downstream Rishikesh was ‘B’ class, which is fit for outdoor bathing as per the ‘Designated Best Uses Criteria’³. Hydropower projects have to maintain e-flow of 15% of the average lean season flow. Closure order was passed against 32 non-compliant industries. Show cause notice was issued to 166 units from April to July 2019. Four hotels were found discharging sewage out of which two hotels were closed and the remaining two hotels were found to be complying later. Action was also taken for non-compliance of the Bio-Medical Waste Management Rules, 2016. Compensation was collected from the plastic users/violators and for illegal mining. Rafting camps have been removed, Bio-remediation started wherever required. The State Government along with NHAI will consider preparation or revision of Master Plan for Haridwar – Rishikesh designating ‘no motor’ zones in some areas, ‘only electric vehicles’ in some areas, widening of roads, green belts and beautification, Information Education Communication (IEC) activities by including religious, charitable, social and educational institutions, plantation in bio-diversity parks*

³ <https://cpcb.nic.in/water-quality-criteria-2/>

along river Ganga and its tributaries, including on the encroached land (after removing such encroachments).

16. During the interaction, we have considered the remedial measures for expediting execution of the orders of this Tribunal having regard to long delay caused and importance of preventing and remedying the pollution of River Ganga. Since it has been stated that many industries were found operating without consent to operate under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, action in accordance with the provision of law may be undertaken within three months after identifying such units. As already observed by this Tribunal including in the order dated 14.05.2019 that River Ganga being National River with distinct significance for the country, even a drop of pollution therein is a matter of concern. All the authorities have to be stringent and depict zero tolerance to the pollution of River Ganga. Wherever STPs are not operating, immediate bioremediation and/or phyto-remediation may be undertaken if feasible. To avoid procedural delay of tender processes, etc. specifications and norms for undertaking such activities may be specified in consultation with the CPCB as was earlier directed in our order dated 29.11.2018. Performance guarantees may be required to be furnished for ensuring timely performance. It needs to be ensured that setting up of STPs and sewerage network to be completed and carried out so as to avoid any idle capacities being created. Performance guarantees may be taken for preventing such defaults.

17. Wherever the work has not commenced, it is necessary that no untreated sewage is discharged into the River Ganga. Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.11.2019, failing which the State may be liable to pay compensation of Rs. 5 Lakhs per month per drain to be deposited with the CPCB. This however, is not to be taken as an excuse to delay the installation of STPs. For delay of the work, the Chief Secretary must identify the officers responsible and assign specific responsibilities. Wherever there are violations, adverse entries in the ACRs must be made in respect of such identified officers. For delay in setting up of STPs and sewerage network beyond prescribed timelines, State may be liable to pay Rs. 10 Lakhs per month per STP and its network. It will be open to the State to recover the said amount from the erring officers/contractors.

18. With regard to works under construction, after 01.07.2020, direction for payment of environmental compensation of Rs. 10 lakhs per month to CPCB for discharging untreated sewage in any drain connected to river Ganga or its

tributaries and Rs. 10 lakhs per month to CPCB per incomplete STP and its sewerage network will apply. Further with regard to the sectors where STP and sewerage network works have not yet started, the State has to pay an Environmental Compensation of Rs. 10 lakhs per month after 31.12.2020. The NMCG will also be equally liable for its failure to the extent of 50% of the amount to be paid. Till such compliance, bioremediation or any other appropriate interim measure may start from 01.11.2019.

19. There is need to evolve a tourism policy for permitting hotels, vehicles or other such activities consistent with the carrying capacity to avoid pollution of River Ganga. There is also need for proper planning in all the areas adjacent to the River Ganga to regulate traffic and orderly movement, avoiding vehicular pollution and having 'vehicle free' or only non-polluting vehicles, scientific disposal of solid waste dumps consistent with the orders of this Tribunal dated 17.07.2019 in O.A. No. 519/2019⁴.

20. Learned Amicus pointed out that at Gaumukh, there was pollution of sewers and resultantly bacteriophage activity of River Ganges which gives it inherent ability to kill harmful bacteria is decreasing which is not good in terms of maintaining water quality of the River Ganga. There is need to issue guidelines by the MoEF&CC for setting up of biodiversity parks for handing over flood plains of the rivers in the country to the Forest Department, for the purpose, within four months in terms of Para 21. Guidelines for levying compensation for discharge of untreated sewage/effluents into the river in terms of Para 13 of the order dated 14.05.2019 also needs to be devised.

21. We do not consider it necessary to consider point-wise progress in the present order in view of pre-existing directions on each of the points. The State of Uttarakhand may take action under each head, accordingly.

State of Uttar Pradesh (Phase -I, Segment- B)

22. The State of UP is yet to provide the cost of removing the Chromium dumps in terms of Para 5 of the order dated 29.05.2019. It is reported that out of 86 drains to be tapped, only 33 have been wholly or partially tapped, 59 remain to be tapped. For 23 drains, work is yet to commence. It is stated that the land for tapping of two drains was not available. Needless to say that where the land is not available, the State Government can take steps for its acquisition or purchase. **Directions with regard to State of Uttarakhand in paras 16, 17 and 18 will**

⁴ News item published in "The Times of India" Authored by Jasjeev Gandhiok & Paras Singh Titled "Below mountains of trash lie poison lakes"

apply to the State of Uttar Pradesh also with regard to the timelines and compensation.

23. It was stated that though the tanneries were closed for violating the norms of discharge, the dues have not been collected from the members of the CETPs and the industries are clandestinely operating as shown from the data of water samples which contained high Chromium.
24. Chromium dump has been stored since 1976 which is required to be shifted to TSDF. The State of Uttar Pradesh may undertake health survey of the area and ensure shifting of the Chromium dumps within three months failing which it would be liable to pay environmental compensation of Rs. 10 lakhs per month to CPCB besides furnishing performance guarantee of Rs. 1 Crore to CPCB.
25. Let the remedial measures be taken by the SPCB for effective monitoring by installing CCTV cameras or undertaking surveillance in any other manner with the help of local police.
26. As observed in the case of Uttarakhand above, we do not consider it necessary to consider point-wise progress in the present order in view of pre-existing directions on each of the points. The State of Uttar Pradesh may take action under each head, accordingly.

State of Uttar Pradesh (Phase -II), State of Bihar, Jharkhand and West Bengal

27. With regard to **Phase-II to IV**, it is pointed out that no specific timelines have been laid down in the order dated 13.07.2017. Needless to say that if no specific timelines have been laid down, the compliance has to be ensured within reasonable time. A period of two years has gone by which can be treated as a reasonable time. Even if further allowance is to be made with regard to works under construction, after 01.07.2020, direction for payment of environmental compensation of Rs. 10 lakhs per month to CPCB for discharging untreated sewage in any drain connected to river Ganga or its tributaries and Rs. 10 lakhs per month to CPCB per incomplete STP and its sewerage network will apply with regard to States of Uttar Pradesh, Jharkhand, Bihar and West Bengal falling in **Phase II to IV**. Further with regard to the sectors where STP and sewerage network works have not yet started, the States of UP, Jharkhand, Bihar and West Bengal have to pay an Environmental Compensation of Rs. 10 lakhs per month after 31.12.2020. The NMCG will also be equally liable for its failure to the extent of 50% of the amount to be paid. Till such compliance, bioremediation or any other appropriate interim measure may start from 01.11.2019. Directions for

compensation for default in this regard will be on the same pattern as in the case of Uttarakhand and Uttar Pradesh as above.

28. As observed above, we do not consider it necessary to consider point-wise progress in the present order in view of pre-existing directions on each of the points. The States of Uttar Pradesh, Bihar, Jharkhand and West Bengal may take action under each head for Phases-II, III and IV accordingly.
29. As noted on an earlier order⁵ in a study in respect of 97 Ganga towns, the sanitation status was found to be as follows:

“19 towns had municipal solid waste (MSW) plant within the town; 47 towns had adequate litterbins around the ghat area; 41 towns had anti-littering messages/hoardings placed around the ghat area; 72 towns had old & legacy dumpsites as well as garbage vulnerable points (GVPs) in the vicinity of the ghats; 66 towns had at least one nullah draining into Ganga; 34 towns had sweeping & cleaning arrangements at the ghat area; 33 towns had solid waste floating on at least one of the ghats of the town. Further, the report mentions “The output of the survey offers a comprehensive report on cleanliness to aid the Government take action on the identified gaps. It also helps in understanding the best practices being implemented in various towns and ghats and support in sharing of knowledge among the various stakeholders helping them to inculcate and tailor best actions according to the city’s requirement.”

The concerned Chief Secretaries may ensure that the above deficiencies are addressed expeditiously.

30. The two Monitoring Committees for **Segment-A Phase-I** and **Segment-B Phase-I** may submit their final reports by 31.10.2019. Thereafter the Chief Secretaries of States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal Director General, Namami Gange and Secretary, Water Resources, Jal Shakti, Government of India may personally monitor the progress and report compliance to the Tribunal in terms of progress at every quarter in a tabular form as follows:

⁵ Order dated 11.03.2019 at para 15

Sr. No.	Targets to be achieved as per orders dated 10.12.2015, 13.07.2017 and the timelines	Targets achieved and the reasons for delay in compliance	Targets not achieved and the revised timelines proposed*	Action taken or suggested for violation of timelines or non-achieving of targets

*subject to payment of compensation as mentioned above

31. Let a further quarterly progress report be filed by the Chief Secretaries of Uttarakhand, UP, Bihar, Jharkhand, West Bengal, with an advance copy to Secretary, Water Resources, Jal Shakti, Government of India by 30.11.2019 by e-mail at judicial-ngt@gov.in. The Director General, Namami Gange may file a consolidated report before the next date by e-mail at judicial-ngt@gov.in.”

12. Thus, it was made clear that no untreated sewage was to be discharged into the river and interim remediation measures were to positively start from 01.11.2019 failing which the defaulting States were to pay compensation of Rs. 5 lakhs per month per drain. The Chief Secretaries were to identify the officers responsible for delay and adverse entries were to be recorded in their ACRs. For delay in STPs and sewerage network beyond timeline of 30.06.2019 for ongoing works and 31.12.2020 for works which had not yet started, compensation is payable @ Rs. 10 lakh per month per STP which can be recovered from the erring officers/contractors. NMCG is liable to pay 50% of the amount.

V. Issue of shifting of Chromium dump in existence since 1976 affecting ground water at Rania, Kanpur Dehat/Rakhi Mandi, UP:

13. The Tribunal in its order dated 22.08.2019 also fixed the timeline for clearing Chromium dump in the State of UP within three months and in default to pay environmental compensation of Rs. 10 lakh per

month, besides performance guarantee of Rs. 1 crore. Thereafter, on receipt of a report from Justice Tandon Committee, the Tribunal vide orders dated 27.09.2019 and 15.11.2019 in O.A. No. 985-6/2019 issued directions on the subject. The said matter is now being separately dealt with and is fixed for hearing on 07.02.2020.

VI. Final reports of Justice Tandon Committee for UP and Justice Dhyani Committee for Uttarakhand and progress reports filed by States/NMCG in the light of order dated 22.08.2019 and report of CPCB in terms of order dated 14.05.2019 on the subject of biodiversity parks:

14. Accordingly, 'final' reports have been filed by the Monitoring Committees. Quarterly progress reports have been filed by the States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal and a consolidated report by the NMCG. CPCB has also filed its interim report on the subject of biodiversity parks in terms of order dated 14.05.2019.

15. We first refer to the final report furnished by Justice Dhyani Committee. The report gives the status of construction of STPs, status of operation, management and performance of STPs and status of upgradation of 7 STPs not meeting the prescribed parameters. Town-wise details in respect of priority towns have also been given. The report further gives status of compliance by industries. Compliance status by hotels, ashrams, dharamshalas, compliance status in respect of flood plains, mining on river beds, biomedical waste, municipal solid waste, compliance of directions for recovery of compensation. The summary and recommendations of the report given in chapters 11 and 12 are as follows:

“Chapter 11**SUMMARY OF MONITORING COMMITTEE OBSERVATION**

The years' work of the Committee in verification of compliance to Hon'ble NGT Order on OA No 200/2014 is summarized as under:

- I. *Management of Drains polluting the river and its tributaries: Efforts have been made to intercept and divert the identified drains and work on 111 out of 136 identified drains have been completed. The intercepted waste water couldn't be completely treated as many of the STPs' are as yet under construction. As such an estimated 100 MLD of waste water still remains untreated, including the waste water from the Jagjeetpur and Lakkar Ghat STP that have less capacity as of now. Once the STPs' at Haridwar and Rishikesh are commissioned, near 98% interception, diversion and treatment will be achieved.*

The alternative methods of waste water treatment must be closely evaluated for their safety and effectiveness. Use of every such methodology must be monitored by at least one Professional Institute and also by CPCB mandatorily. In absence of a standardized protocol, these steps are essential to protect public safety and also public money.

- II. *Building up of sewage treatment infrastructure: State of Uttarakhand is working upon 18 number of STPs 9 have been completed. The remaining STPs are targeted to complete and commence operation as per the schedule submitted. Committee has the following reservations in respect of the STP infrastructure.*
 - a. *Sixteen smaller STPs' of electrocoagulation seen on the upper reaches of the river are not in operation. The process used to award the contract itself is a serious deviation. The project has been awarded and then the technology and details are submitted for vetting by IIT/Delhi. The Institution has made material changes to the design and added further process and equipment. Looking at the quality and condition of plant it is very clear that the finances proposed do not provide for these changes. Basically the financial bid was for a design that has itself changed substantially. With such a major infraction, can the plant be actually built and operated at the same cost. The situation suggests that it can't and therefore the plants are not getting completed and quality has suffered. The plant output water is compliant since the input waste water is almost clean at this stage.*
 - b. *STP plant is made at higher levels than the development/houses/ commercial establishment. The constructions lower than*

the sewage and closer to the river continue unabated. The sewage lines are not be able to tap sewage from these locations and they are directly discharging into the river. At some places sewage is being pumped against gravity and it requires continuous electricity which is not available. Unless sewage infrastructure and control in habitation activity are completely coordinated the infrastructure will fail to achieve its purpose and river at its inception will continue to get contaminated and at a much faster pace. The areas where the problem is very evident are Badrinath, Joshimath, Devprayag, Rudraprayag- basically the Dhams on upper reaches.

- c. Sludge disposal and its monitoring is the blind spot in the entire system. There is no assessment of sludge generation, testing and scientific disposal so as to ensure that the waste recovered from water is not added back to the environment nullifying the entire effort. It is noted that even the tender document doesn't give it a serious space and therefore actually no one is responsible for sludge. Some effort has now been made to keep records and do the necessary testing of the manure made out of it. A standard protocol is necessary for sludge management as well.*
- d. No solution is applied for remote hamlets so far. The problem may not look very severe in numbers but it is polluting the clear stream emanating from the mountains.*
- e. Septage management seems to have gained attention. Policy and guidelines have been issued. Continued and sustained efforts are required for the same which includes-efficient mechanism for collection/transport, technology inputs for remediation at STPs', remediation where STP is too far and a system of financing and monitoring the activity,*
- f. The present system of Project Planning and execution is confusing. DPR is made by an outsourced agency that hands-over the document to Client (NMCG in most cases) and its responsibility ends. The DPR forms basis of tender that is issued by another Agency (UK Pey Jal Nigam) which wasn't actually a part of making the DPR and holds no responsibility for it either. The tender is evaluated by this agency on its own. The bidder is completely responsible for its bid and is required to make its own assessment irrespective of the DPR (if the document is shared). The bidder makes the cost bids basis its own technology and design. Tendering Agency awards work to the lowest bidder. After the work is awarded, the bidder is supposed to get its design vetted by technical institute. Now the design is changed by the Institute for various reasons. The financial costing done by the bidder is changed and the work is still to be executed in the same money. The financing is by NMCG that appoints a third outsourced agency for project monitoring so the critical responsibility shifts to another external party. The project is monitored by State Government as well but responsibility actually rests with an external agency paid for the purpose. Basically, the mother of the project-DPR maker hands over the baton to another one who then passes it to another and so on. No*

one is responsible and all contribute to project cost, delay and confusion.

Much worse is that the Project aim is itself fractured-making STP or a pipeline, or house to house connection; it's not addressing a solution-Treat all waste water in a XYZ town.

III. *Industrial Effluent and CETP: The Industrial establishment in the state fall into two major categories in terms of geographical location- eg. Industrial Clusters such as SIDCUL, Pant Nagar, and standalone industries spread all over the state- eg. Sugar and Distillery in Laksar, India Glycol and Nandi Paper Mills in Kashipur.*

The industrial clusters have a possibility of CETP. The three industrial clusters have CETP however the exercise of connecting industries to CETP need deliberate and serious push by UEPPCB and also support by State Government. More needs to be done in this regard. Then there is linked and more serious issue of financing and operating the CETPs'. Committee notices serious gap in viable financing, technical skills of operating agency and effective monitoring of the CETP operations. As a result the systems either fails to meet the desired results or there is a tendency to avoid operating it or both. Department of Industries that creates the infrastructure takes no responsibility for concomitant pollution and has so far not been seriously enlisted as a stakeholder.

The standalone large industries operate under the monitoring of UEPPCB in terms of environment compliances. The organization has neither developed sufficient in house capability nor created a mechanism for effective outsourcing. It is still to start using technology seriously to aid in its working. With the weak champion for the cause of environment, the industries are free to care for environment to the extent that they can or wish to. CPCB has limited intervention and in most cases it cites its dependence on UEPPCB. The situation is not conducive to effective compliance and Committee noticed its impact in every visit. HUL at Haridwar and Venkateshwar Textiles at Kashipur are good corporate citizens and have taken effective measures for water utilization and waste water treatment. In contrast, Sugar Mills and Paper Mills and India Glycol needed monitoring which was inadequate resulting in unchecked environment pollution.

The online monitoring of ETP outlet needs further strengthening in many critical areas including- calibration of the equipment and its temper proofing, real-time data analysis and automatic triggers back to industry, consistency in use of data for prosecution, standardizing best ETP plant and processes, industry-wise, based on performance, crosscheck the data with the catchment drain/water body and more. Aim should be

to ensure fidelity of the data and use it efficiently to secure no pollution by industries. Otherwise monies spent on creating the infrastructure is not sufficiently utilised.

- IV. Flood plain demarcation, protection and utilization plan is still a work in progress. The encroachment close to the river and even the dry river bed in lean season continues unabated. River Chandrabhaga is cited just as an example and the same situation is happening in others as well. There has to be a serious political and administrative will to stop it entirely. Less than that all the plans for protecting river will fall short. The action taken at Maya Kund should become the rule so as to protect the flood plains.
- V. E-FLOW has become a very well-known concept and there is an effort to implement the regime. There are reservations and issues raised by existing Hydel Plants and the same need to be addressed appropriately so that the regime is adhered to.
- VI. Sand Mining on river beds: State Government has made a policy under which licenses are granted. There is awareness about the penalty for illegal mining and it's not as blatant as before. The continued interventions have achieved the purpose of making the sand miners and the officers understand the risks involved and has been able to drill the import of word 'illegal' into all players in this domain. This is a positive development that has helped to minimize illegal sand mining of a commercial and mechanized scale.
- VII. Biomedical Waste Management Regulations have gained wider publicity and there is visible impact on larger hospitals where the colored bins have appeared in the last one year, more so in last six months. The protocol and training for segregation at source are yet to be firmed up and hospitals are experimenting their methods. There is clear effort evident in private hospitals and Government hospitals have still to catch up.
- VIII. The CBWTF design, operation and meeting of desired standards is yet to happen. More attention is required in this segment so that post segregation and collection the biomedical waste is actually safely disposed of. The current competition of 'as cheap as possible' is failing the requirement of 'desired quality'. We have yet to come across a well design and operating facility so far. The management of liquid waste from HCF is yet to start. In fact even the state level agencies lack the knowledge of its requirement including legal provisions. Committee has started the process of creating awareness. Capacity building followed by its implementation and monitoring are the next steps to be taken by State and Central Agencies.
- IX. Basically the stat has still to complete its process of meeting the regulatory requirement on the issue.

- x. *Municipal solid waste management in Ganga Towns is observed as a huge gap and a serious situation. State Government has plans which are on table and need to be brought on ground. The facilities seen do not inspire confidence. Dehradun MSW Plant is the only credible plant in the state. The problem of current waste together with legacy waste is assuming alarming proportions. The Ban on Plastics is not appreciated as effective with plastic seen almost everywhere and in all dumps. The dumping of mixed waste close to the river and the slopes leading to the river hasn't been stopped despite all judicial pronouncements. State Government expresses its limitation in finding a space for its disposal. However, we also see an equal gap in use of technology for its disposal. The seriousness of the problem is compounded by the fact that it is impossible to check its growth with the growing cities, population and commercial development. While space is a constraint for Government, garbage continues to find its own space-it is accumulating at will and everywhere.*
- xI. *Awareness of the issue-saving the rivers and water bodies- is very much evident and overall Committee notes with satisfaction that the issue of water pollution is well highlighted in Schools, Colleges, media and the public as well as private stakeholders. There has been efforts by Government at creating awareness and also a number of private entities. Large Industries have a fair perception that law shall be implemented and it is in their best interest to take necessary steps and be responsible for environment. The same is yet to percolate to smaller and unorganized segment. Yet there is no denying the facts that the old habit of cutting corners calls for concerted and discretion-less application of law. The message that environment safety is precursor to live industry must get drilled longer to make it a habit.*
- xII. *Government system is working on some fronts and needs to coordinate its efforts that is widely dispersed over multiple departments making accountability difficult to recognize. The fractured system of DPR and tender coupled with Ll concept are compounding the project execution and further diluting the accountability.*
- xIII. *Maintaining Biodiversity is an important measure and needs more actual support. While Forest Department has been assigned the responsibility, it has to be supported with finances and large scale, impactful projects must be executed in a time bound manner.*

Chapter 12

RECOMMENDATIONS OF MONITORING COMMITTEE

- I. *The Project Planning has to improve so that the DPR, the execution and the final outcome remain one entity's*

responsibility. All elements must fall in place simultaneously to achieve the final result- eg. treat all waste water discharge from say ABC town. Current state of separate DPR for each element at different times fracture the very definition of project and despite the 'lowest cost tender' all monies put together and the failure to achieve results in time prove far more expensive. The Project must include the non-negotiable quality as the start point and poor quality must face stringent measures for the concerned officers mandatorily. One entity must carry the baton till finishing line. 'Simplify' is the only solution.

- II. *Water Footprint Planning must come under one umbrella even in the States. The use and treatment of water has to be planned against its availability, all sources combined. Water is an essential resource that can't be compartmentalized if urban centers have to become sustainable. The upstream of one town is the downstream of another and therefore, the upper town's mis-doings are paid by the lower town and its people.*
- III. *Rivers are sacred in Indian culture and the same has to be shown by actually respecting its purity. It's surprising to see religious institutions- Temples, Ashrams and Dharamshalas polluting the rivers. The same entities must be mobilized to rectify the situations themselves and also propagate the message amongst devotees who throng to rivers for religious reasons. Similar effort has to be made to keep our religious places in good state. The condition of Badrinath, Devprayag, Rudraprayag, Joshimath, and Uttarkashi- in fact all such places speaks poorly of their management. It's difficult to locate the shrines and reach river without walking through dirty congested lanes. The all-weather char dam road will increase this flow and further uncontrolled commercialization of these places. If State Government doesn't plan in advance, whatever we may say about protecting rivers, it is not likely to materialize.*
- IV. *The message of environmental responsibility must be conveyed clearly to the Industries. In fact Industry Department should be the one holding this responsibility. As of now they are promoting industry without any accountability for environment and have no co-ordination with other stakeholders-Central Ground Water Authority, Urban Local Bodies, Water and Waste Water Departments. Environment protection must be non-negotiable for industrial growth and even urban growth. Water recovery, recycle and reuse must be planned simultaneous with planning an Industrial Estate.*
- v. *E-Flow must get maintained. Simultaneously there should be a plan to capture excess water when it becomes available. We are*

a country where flood and draught occur with equal frequency and in the same geographical location.

- VI. State Government in Uttarakhand bears significant responsibility of carrying clean water and delivering the same at its border. This is the river that nurtures the entire Gangetic plain. Therefore, waste water treatment must be of highest quality in the state. Any compromise will cost the other states dearly and there is no financial saving likely at the end. Hon'ble NGT has insisted on the highest parameters for its treatment Plants and there can be no concession or deviation possible. In this light, the meticulous functioning of UK Pey Jal Nigam and UEPPCB is absolutely essential. Both organizations require high caliber professionals, continuous training and use of best technologies to ensure consistent performance. A lot needs to be done on this front.*
- VII. The online monitoring infrastructure is still in its infancy. As stated supra it needs to be upgraded and better utilised for the purpose of achieving environment protection.*
- VIII. Maintaining the ecological balance in this area is also essential to protect the water sources. Biodiversity is one aspect. Interventions in this regard must be concentrated, impactful and visible. Current strategy of patchy and scattered plantations need a serious re-look. The number of plants seeded is very high but the impact is visible only in Rasiyavad where there is concentrated effort and original flora and fauna have been revived. Similar effort on a large scale and with involvement of local population is urgently required. This is a state known for CHIPKO movement and it will not be a difficult task to have the communities involved in such projects.*
- IX. CBWTF are private enterprises and the entrepreneurs would need state support in running the business with good quality output. As of now given limited cooperation of users and very small fee that HCFs' are prepared to pay, no entrepreneur is bringing in the right technology and investment in this segment. It's a nascent sector where State Government and Central Agencies need to think through a viability framework. The current ones are facing fines and closures but new ones are not emerging. It is a worrisome situation. Given the performance of government in STP and related segments, one would not wish it to become Government venture. At the same, it's a business that has to be rightly nurtured at this stage.*
- x. MSW has been a mounting problem and everyone agrees that it requires an urgent solution. This segment is also gravitating towards the same system of DPR, Tender and no responsibility. Government must have a clear view on do we own that technical competence to make the DPRs' and do a*

right project of managing 'unsegregated waste'. We have to first make the right 'Problem Statement'-'Manage the unsegregated municipal waste of ABC city in 2 hectares of land with minimum landfill to be accommodated in that land itself for say 15 years". The plan that we have seen so far, begins with segregated waste and ends with land requirement with no indication on how we derived it and what is the final target. If an Agency-nationally or globally, has the proven solution that can be executed, it may be brought in with a system for cost control instead of financial bidding. A credible entity is unlikely to give a financial bid in the current experimental status. A few such plants will provide the actual costs, experienced manpower, test and adaptation of technology and market will see a better and competitive response. As of now small monies are spent and more land is lost under the heap of garbage, not to mention its impact on environment and health of people. It's better to accept crisis and seek all that help that we can get."

16. We may now refer to 'final' Report of the Monitoring Committee for the State of UP dated 23.10.2019 which has been filed on 31.10.2019 for Segment 'B'. The report refers to the progress in terms of waste water treatment, tapping of drains, connecting of tapped drains to STP, compliance by Grossly Polluting Industries (GPIs), reduction in use of water by the industries, leading to reduction in waste water generation and pollution load, biomedical waste management. The Committee has given the status of STPs for which works have been awarded and which are at tender stage. Status of compliance by the existing STPs has also been mentioned. It has been specifically mentioned that STPs at Jajmau were not operational and those not fully operational. Reason for non-compliance by already constructed STPs are structural defects, absence of financial assistance or not receiving the required sewage quantity. The report also mentions illegal order of the Principal Secretary, UP dated 08.08.2019 permitting waste water to be discharged directly into river Ganga which is subject matter of OA 985/2019. Deficiency in working CETP

has also been mentioned. The report also gives the status of major drains. It is stated that the waste extracted from the drains has been heaped on the sides of the drains and not transported to designated place. Demarcation of flood plains has not been completed. E-flow has to be ensured. Green belt plantation direction has yet to be enforced. Mining has to be regulated. Ground water extraction is not being properly regulated. Chromium dump at Rania and Rakhi Mandi needs to be remediated. Primary Effluent Treatment Plants (PETPs) need to be compliant. Solid waste is not being treated. More than 1 lakh MT waste is lying at open in Meerut. 4 lakh MT waste is lying at Kanpur. Such waste is uncovered and lying in open and has a potential of hazard. Recommendations of the Committee are:

“RECOMMENDATIONS:

The Committee may make following recommendation for the purpose of prevention of pollution of River Ganga in light of the various reports and observations.

1. STP's, CETP'S and ETP'S

CCTV cameras with the provision of live feed through an app on mobile along with storage capacity of 30 days must be installed at all STPs. Access to app may be provided to the public at large so that they may verify at any point of time as to whether the STP is operational or not. OCEAMS must also be installed and linked to a central server for constant monitoring.

In the matter of working of STP quantification of the total sludge generated and to whom it is sold or the manner it is disposed of, must be recorded by the STP operator with verifiable data on day to day basis. The record must notice the total sludge generated, quantity of sludge sold/disposed of, along with name of the person with address to whom sold/provided free of cost.

In respect of CETP an identical provision for installation of CCTV cameras with live feed through an app on mobile must be made. The sludge generated at the CETP must be analysed, and it must be ascertained as to in what manner

the same is required to be disposed of. In case the sludge contains heavy metals, it must be directed to be transported to Hazardous Waste Disposal Plant and verifiable records must be maintained on day to day basis by the operator.

So far as the ETP installed by the industries are concerned, provision for installation of CCTV cameras with live feed must be provided which can be monitored through an app on mobile along with storage capacity of 30 days. The sludge generated must be directed to be quantified and recorded on day to day basis. The manner in which the sludge is disposed of/sold with specific details of the purchaser or the person to whom it is provided for disposal must specifically be mentioned.

Quantification of sludge generated at the STP, CETP and the ETP and the manner in which it is disposed of/sold would be a good indicator for assessing the performance of the plant.

The State Government may be asked to constitute a separate State Cadre Service for operation and maintenance of STP's and CETP's consisting of experts having knowledge of operation and maintenance of STPs/CETP's.

2. Modular STP's

In old city areas laying of sewer lines/sewer trunk lines not only requires huge amount of expenditure it also leads to inconvenience to the public at large for months together. Further construction of big STP not only requires large area of land which is in scarcity in big town. It also raises serious issue with regard to discharge of dirty water when the plant becomes nonoperational for maintenance or for other reasons. The Committee would recommend that State may resort to modular STP's to be installed at the tail of the drains which are already carrying sewage to the river/its tributaries.

3. Extraction of underground water.

A study be undertaken industry-wise as to what quantity of underground water is actually required by the industry for its manufacturing purposes. Permission for extraction of underground water be revisited by the Central Ground Water Authority having regard to the aforesaid aspect of the matter, specifically in respect of industries which have become ZLD or partially ZLD. The rates for extraction of underground water in our opinion must be so fixed so as to ensure that larger the amount of water extracted, the higher the rates like in the case of electricity charges.

There must be specific directions for authentication and verification of the flow meters installed in the premises of each industry, on periodical basis.

The report in that regard must be submitted with the Central Ground Water Authority. Competent department for the purpose must also be identified.

4. Compliance of conditions mentioned in the order permitting to operate.

District level officer of the pollution department be specifically made aware of the conditions mentioned in the permission order and they must ensure strict compliance thereof. Periodical reports must be submitted in respect of compliance of the conditions as mentioned in the permission order.

5. Fresh Joint Inspection of GPI's.-

In view of the conclusions of the Committee that the joint inspection done in respect of GPI's is not comprehensive and does not take into consideration many issues which are relevant for avoiding pollution a fresh joint inspection of all the GPIs' be directed in light of what is observed in the report with the condition that in case a GPI is found to be violating the conditions contained in the permission to extract underground water heavy environmental compensation be imposed on day to day basis.

6. Notification of rates for transportation of spent chrome.-

Chief Secretary of State of Uttar Pradesh be directed to ensure that rates for transportation of spent chrome from the tanneries to the Hazardous Waste Management Plant at Kanpur are notified within 15 days and recovery from the tanneries is effected in terms of the order of the Hon'ble National Green Tribunal dated 13.07.2017 passed in O..A.No.200/2014.

7. Finalization of parameters for inlet and outlet of STPs.-

Under the notification of the Ministry of Environment dated 01.01.2016 each State has to notify the parameters for inlet and outlet of CETPs'. The State of Uttar Pradesh has not been able to do so. The Chief Secretary must be asked to notify the parameters in respect of discharge of CETP and the point from where samples are to be drawn for ascertaining as to whether CETP is compliant or not having regard to the fixed designed parameters.

8. Monitoring of E-flow

CWC must be directed to monitor e-flow of River Ganga specifically during lean season at various places specifically between Hardoi to Kanpur regularly. It must be ensured that

the quantity of water in the normal channel of the river is maintained equivalent to 20% on an average monthly basis during lean months of the River Ganga at Haridwar. CPCB shall continue to monitor the river water quality.

9. Installation of ETP at Hospitals.-

All hospitals of more than 100 bed capacity must be asked to install their ETP's in a time bound manner failing which action may be recommended and the Chief Medical Officer must be made responsible for ensuring the said compliance.

10. Resorting to Incineration of Waste.-

CPCB and UP PCB must ensure that where ever permission is granted to dispose of the sludge/industry waste through incineration, then such permission must accompany a detail scheme for disposal of the ash to be generated/collected because of incineration. In case it is not possible to dispose of the ash in the effective and safe manner such permission for incineration must not be granted.

11. Afforestation and Bio-diversity Park

All the land which become available due to the reduction in the storage capacity of the lagoons at distilleries/sugar factories/other industries in terms of the circular of CPCB, fixing the storage capacity equivalent to 30 days production must be directed to be utilized for thick plantation so as to act as a buffer against foul air of the industry and a source of fresh air to the residents of the localities.

NGT order had asked for framing of guidelines by CPCB and MOEF. The same is yet to be complied. CCA Projects/UP has already framed plans for Biodiversity Parks under guidance of Mr C R Babu, subject matter expert. All district DFOSs' have have been trained in the concept and 25 projects for establishment of Biodiversity parks have been submitted to State Mission for Clean Ganga on 18 October with a total approx. cost of 323.82 Cr. The same should be perused expeditiously for appropriate approvals.

In pursuance of NGT order, CPCB has also worked upon the plan for bio-diversity and has completed a study on river rejuvenation for Kali East. A draft has been prepared for action for this river.

12. No discharge of untreated dirty water in River Ganga at any point of time.-

The State must be asked to come up with a comprehensive plan so as to ensure that no sewer or dirty water enter into River Ganga even during the rainy season/during the period

the STPs are under maintenance/repair or otherwise. The State must resort to phyto-remediation, bio-remediation or any other technology where ever STP's are not in operation. The process used must be well evaluated and also documented as for its safety to the river ecosystem and its effectiveness in pollution abatement. CPCB shall be responsible for constant monitoring of the performance of any such project undertaken in the drains. It shall periodically submit its report to the State Authorities as well while taking appropriate action under law and NGT order. CPCB is entrusted with this important responsibility as custodian of environment, more specifically the Rivers in this case.

13. Removal of Chromium Dump at Rania, Kanpur Dehat and Rakhi Mandi, Kanpur.-

Chromium dump lying at Rania, Kanpur Dehat and Rakhi Mandi, Kanpur must be removed with promptness and due diligence. Effective measures in a time bound manner must be taken. Till such removal the dump must be covered so as to ensure that rain water does not come in contact with the chromium dump and leachates from dump is avoided as far as possible. Drinking water facilities for human beings and animals at both the places must be ensured by the State of Uttar Pradesh without fail. There must be a constant monitoring of the steps to be taken by the Government for permanent removal of chromium and responsibility must be fastened for the safe execution of the work upon the Chief Secretary of the State of Uttar Pradesh.

14. Solid Waste.-

The State must ensure fast and effective measures for disposal of solid waste both legacy and that generated on day to day basis in big cities like Meerut, Kanpur, Bareilly, Moradabad etc. Safe and hygienic method for disposal of the plastic bags must be a part of the mechanics for disposal of the solid waste. Hon'ble National Green Tribunal must monitor the action plan of the State Government in that regard on regular basis.

15. Restriction on use of plastic bag.-

Use of plastic bag for segregation of Bio-medical waste and other waste, both recyclable and food waste etc as well as other Municipal waste must be stopped immediately. State must come out with an alternative for such segregation and transportation of the Bio-medical waste, recyclable waste and other waste.

LASTLY

The Committee feels that levy of environmental compensation upon the polluting industries does act as a deterrent. But the same principle of levy of environmental compensation does not act as a deterrent qua the local body, local authority or departments of State of Uttar Pradesh for the simple reason that public money collected by the department/funds provided by the Government are used for payment of such compensation to the Pollution Department. Meaning thereby, that it is the public money which is used for payment of Environmental Compensation. The Hon'ble Tribunal may not only impose/levy environmental compensation in case of pollution norms being violated/ noncompliance of the directions issued by the Hon'ble Tribunal upon local bodies, local authorities and government departments it may also consider to recommend adverse action against the responsible officer, in a time bound manner and further a part of the environmental compensation be directed to be recovered from the salary of the officer concerned. The Committee would recommend that action be taken against the officers at the highest level.

The Committee also requests for appropriate orders on the non-operation of STP infrastructure in Allahabad, namely 29 MLD STP at Salori, 80 MLD STP at Naini, 60 MLD STP at Rajapur. Further, the Committee also submits that Geo-tubes have not been removed from the site nor the sludge entrapped properly managed. The report of UP PCB along with photographs is submitted alongwith.

Committee suggests that the following aspects of Ganga cleaning require continued monitoring.

1. The ground water extraction, water utilization by major industries and ground water replenishment measures need constant monitoring for improvement. CGWA is clearly not proving sufficient to guard the ground water issues which are fairly serious in nature.
2. The accounting for safe disposal of sludge from CETP and STP requires a standard protocol and constant monitoring. As of now it is going unassessed by all the agencies.
3. Kanpur has seen much effort in last two years and continues to require more work to abate the pollution that it causes to River Ganga.
4. Rania Chromium dump is a serious problem whose solution is yet to start. Very close monitoring is called for to ensure that problem is actually solved.
5. Notification of Flood Plains is the starting point in protecting the River ecosystem. It is required to protect the flood plain zones and initiate the process of restoring the biodiversity

along the river. The same is still pending with State Government.

6. The well- coordinated creation of infrastructure for waste water treatment and its optimal operation and maintenance so as to ensure that no waste water enters river needs consistent watch. It tends to slip up at multiple points in the current multi-agency complex process. Stakeholders haven't envisaged a change in current process and therefore constant watch is the only option to ensure that public funds utilized achieve the purpose of clean river.

7. CPCB shall continue to monitor the waste water infrastructure and the Drains falling into river Ganga and its tributaries. It shall take appropriate action as per NGT order and under the prevailing legal provisions."

17. We may now refer to the consolidated report filed by the NMCG on 11.12.2019. On the most significant of sewerage infrastructure projects, the chart filed is as on 30.07.2019 which has already been quoted in order dated 22.08.2019. During the hearing, the representative of NMCG stated that there is marginal progress but the timeline will be adhered to. On the subject of preventing pollution, installing Continuous Emission Monitoring System (CEMS), use of treated water, sludge, bio digesters and septage management, preventing dumping of waste and management thereof, flood plain identification, maintenance of e-flow and displaying water quality data, development of biodiversity parks, prohibiting river bed mining, recovery of compensation, involvement of civil society, status has not been clearly spelt out though a voluminous chart has been filed.

18. The Executive Director, NMCG, when asked about the latest status with regard to Sewage Infrastructure Projects in Ganga Basin (Downstream of Unano to Gangasagar), stated that out of the total 75 projects, 16 have been completed, 36 are ongoing and 2 are in the

category “tender to be floated”. This amply demonstrates that there is hardly any progress, in terms of achievement of setting up of STPs, after 30.04.2019 which was stated in a tabulated form in our order dated 22.08.2019. The NMCG needs to take action against the erring officers and file a report before the next date.

19. Brief summary of the reports received from the States of Uttarakhand, UP, Bihar, Jharkhand and West Bengal are as follows:

UTTARAKHAND

Setting up of STPs, Interception and Division (I&D) of drains and preventing untreated sewage and effluents in the River Ganga.

- a. Out of 18 projects sanctioned under Namami Gange Programme, 10 projects have been completed, 5 projects are scheduled to be completed by December 2019, 2 projects to be completed by February 2020 and remaining 01 project relating to Construction of 2 STPs at Joshimath of which 01 STP has also been completed in June, 2019 and work of other STP is stopped which will be completed by June, 2020.
- b. Under 18 projects, 30 STPs are proposed of which 21 STPs are completed, 06 STPs are to be completed by December 2019, 2 STPs will be completed by February 2020 and 01 STPs by June, 2020.
- c. Under these projects, 59 drains are proposed to be intercepted and diverted to these STPs against which 43 drains have been intercepted, 9 drains are proposed to be intercepted by June, 2019, 4 drains by February 2020 and remaining 3 drains by June, 2020.
- d. Bio-remediation on such 07 drains namely 1. Chandershwar drain (Consists of 3 drains merging together at one point-Shamshan Ghat, Dhalwala and Chandershwar), 2. Taulia drain, 3 Junior High School drain, 4. Kothiyalsain drain, 5. Baitarni drain, 6. Pokhari Bend drain and 7. Belni drain has commenced w.e.f. 01.11.2019 in compliance of the directions passed by this Hon'ble Tribunal on 22.08.2019. Thus, all the drains under the ongoing projects shall be intercepted and diverted to STPs for treatment' before 1st July 2020; and as an interim measure Bio-remediation facility has also been installed before 01.11.2019 on 07 drains which are likely to be intercepted and diverted after December, 2019.

Information in tabular form

Sl. No.	Targets to be achieved as per orders dated 10.12.2015, 13.07.2017 and 22.08.2019 the timelines	Targets achieved and the reasons for delay in compliance	Targets not achieved and the revised timelines proposed	Action taken or suggested for violation of timelines or non-achieving of targets.
1.	As per order dated Gyansu and 40 MID STP Haridwar which were sanctioned before 10.12.2015	As per the directions of Hon'ble NGT the targets were achieved in case of Tapovan, Devprayag and Gyansu. Regarding 40 MID STP at Haridwar, it was approved for 68 MID STP on Hybrid Annuity PPP Model, as such work is now scheduled to be completed by February, 2020 well before the timeline (01.07.2020) set by order dated 22.08.2019 for ongoing works.	Not applicable	Not applicable
2	As per order dated 22.08.2019 following timelines have been set:- (a). The project under execution are to be completed by 01.07.2020	Out of 18 projects sanctioned during 2017-2019, so far 10 are completed, OS will be completed by December, 2019, 02 by February, 2020 and remaining 01 by June, 2020. Hence, targets are		Though the projects will be Completed before 01.07.2020, liquidated Damage (LD) has been imposed on contractors who failed to achieve milestone during construction. Detail thereof is given under para 5.16 (6) of. This affidavit.

	<p>(b). The projects where work has not commenced are to be completed by 31.12.2020.</p>	<p>01 project (STP & I&D Srikot) falls under this category. Work has</p>	<p>Not applicable</p>	<p>Not applicable</p>
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Action Taken by State Government on the Observations of the Monitoring Committee in reference to the Report dated 23.10.2019.

The State Government has clarified and provided action taken report in response to the report of the Monitoring Committee dated 23.10.2019 which inter alia relates to;

- a. Interception of Pandeywala drains in Haridwar.
- b. Functioning of 3 Mini STPs at Devprayag.
- c. Functioning of STP of 50 KLD at Sangam road NandPrayag.
- d. Functioning of STP of 1.08 MLD, STP at Pokhri, Joshimath town.
- e. Functioning of STP at Badrinath.
- f. Functioning of STP at Tehri Town.
- g. Online Monitoring System for STP of 1 MLD at Rishikesh and other STPs at Haridwar, Tapovar, Swargasharam, Gyansu (Uttarkashi) and Srinagar.
- h. Construction of Electro-Coagulation based technology for 16 small STPs.

Use of Treated Water

- a. The treated water of 68 MLD from STP of Jagjeetpur will be use for irrigation by constructing a canal of 10 Km length and 20 Km offsets length having carrying capacity of 90MLD and this will be completed by December 2019.

- . Treated water from Sarai STP of 32 MLD (18+14) will be used for irrigation.
- a. With regard to STPs at Rishikesh and Munikireti the work is, to be undertaken for construction of a Canal of length of 20045 Km by Irrigation Department to use 5 MLD of treated water. However, **no timelines are given for completion.**
- d. It has been mentioned that treated water will not be possible in hilly region as the discharge from such STPs is very less and not techno economically feasible and hence treated effluent as per described norms is being discharge into the river.
- e. Therefore, **it is important all STPs should meet faecal coliform standards if it is discharged into the river.**

Use of sludge manure (Ref. 5.4 Page 16)

- a. The sludge generated from STPs/septic tanks is utilized by the farmers as manure against production of estimated production of 10732 cubic meters sludge, 14924 cubic meters sludge has been distributed to the farmers. (Free of cost)
- b. Sludge generated is found to be saved for application.

Status of Septage Management (Ref. 5.5 Page 17)

- a. Protocol for Septage Management has been developed and 9 septage suction transport vehicles have been procured, however, **Timelines are not given Septage Management in other hilly towns where specific Septage Suction Vehicles are needed in these hilly towns.**

- b. **Direction: In no cases Septage either solid or non slurry form should be disposed in any stream leading to the river Ganga or its tributaries.**
- c. **There is no clear cut Action Plan is emerging out with timelines for co-treatment of Septage with existing STPs.**

Compliance in relation to Industries (Ref. 5.6 Page 18)

- a. It has been mentioned that out of 7080 industries in operation in the State, 5306 units are having valid consents and 204 applications are under consideration at various levels and remaining 1570 have been issued directions to show cause.

Functioning of CETPs

- a. 3 CETPs are reported to be complying with standards.
 - . All the operational units in Sitarganj are connected with CETP. Out of 531 industries, 20 are not connected in CETP Haridwar and the conveyance system is under construction which will be completed by May, 2020.
 - a. In Pantnagar CETP, out of 499 industries, 254 industries are not connected with CETP because of non-availability of conveyance system. Further out of 254 now 61 industries are connected and remaining 193 industries will be connected within one year time.
- b. Observations: can the industries which are not connected to CETP but having stand alone ETP must be complying with the prescribed norms and what is the mode of disposal of their effluent is not clear in the report. Till they are connected to

CETP, SPCB may take a view on their operations if such units are not found to be complying with the stricter standards.

UKSPCB has to ensure that CETPs should meet with the prescribed norms and the treated water should be utilized instead of discharging effluents in any drain leading direct or indirectly to the river Ganga.

Rawali Mahdood Drain (Para 5 Page 20)

- a. The action proposed to be taken for this drain has not been clearly mentioned.

Installation of STPs and Solid Waste Management in Hotels/Ashrams/Dharamshalas and Roadside Hotels.

- a. UEPPCB should ensure that as per applicability, hotels/ashrams/dharamshalas should have their own STPs and no untreated water should go into river Ganga or any stream.
- b. The roadside Dhabas, Hotels should not discharge their waste water down the hill/slopes contaminating the fresh water streams.

Other Issues

- a. The report has given status on environmental flows, compliance of Solid Waste Management Rules, Disposal of Bio-medical Waste, Zoning of Flood Plains, Regulation of Mining Activities, Plantation of Biodiversity Parks and evolving the Tourism Policy.
- b. With regard to Mining Activities, it is mentioned that River Bed Mining in the State of Uttarakhand is carried out in highly

regulated unscientific manner as per the provision of State Mining Policy and Uttarakhand Mining Mineral Rules, 2001.

- c. However, it appears large number of illegal mining is taking place which is evidenced as per the statistics given under Para 5 indicating that in the last 5 years 10,167 cases have been reported in posing penalty of 57.71 crore (Para 5 Page 33).

Sl. No.	Financial Year	Illegal Mining/Storage/Transportation cases	Penalty (in Rs. Crore)
1	2015-2016	1324	12.27
2	2016-2017	1424	4.41
3	2017-2018	3231	9.44
4	2018-2019	2649	26.99
5	2019-2020 (Up to October 2019)	1539	4.60
Total		10,167	57.71

River Water Quality (Para 5.8 Page 22)

- a. The UEPPCB has provided water quality data of river Ganga at 29 locations (Annexure 11, Page 15854) which has indicating that at 11 locations the water of river Ganga is fit for direct drinking and it is worth appreciating that the sanctity and the glory of the Ganga is observed at such locations such as (>2): River Dhauli Ganga B/C Alaknanda at Vshnuprayag, River Alaknanda B/C River Nandakini at Nandprayag, River ALaknanda A/C Nandakini at Nandprayag, River ALaknand B/C River Pindar at Karanprayag, River Mandakini B/C Alaknanda Rudraprayag, River Alaknanda B/C mandakini Rudraprayag, River Alaaknanda A/C Mandakin Rudraprayag, River Alaknanda A/C Bhagirathi Devprayag, River Alaknanda B/C Bhagirathi Devprayag, River Alaknanda B/C Alaknanda Devprayag, River Mandakin D/S Agustmuni Rudraprayag.

- b. Since it is achieving the water quality standards of >2 MPN/100 ML Faecal Coliform, however at other locations such as River Alaknanda B/C Dhauli Ganga at Vishnuprayag, River Akaknanda A/C Dhauli Ganga at Vishnuprayag, River Nandakini B/C Alaknanda at Nandprayag, River Pindar B/C Alaknanda at Karanprayag, River ALaknanda A/C Pindar at Karanprayag, River Bhagirathi D/S Uttarkashi, River Ganga U/S Lakshmanjhula Rishikesh, River Ganga U/S Riawala Dehradun, River Suswa at Mathurawala Dehradun, River Song D/S Near Birla Guest House Dehradun, River Ganga D/S Rishikesh, Upper Gnaga Cnal at Laltarao Bridge Haridwar, Upper Ganga Canla at Rishikul Bridge Haridwar, Upper Ganga Cnal D/S Roorkee, Upper Ganga Canal D/S Har Ki Pauri Haridwar, Upper Ganga Canla at Damkoti Haridwar. Where the water quality does not meet the drinking water quality standards of >2 MPN/100ML faecal Coliform. Which requires to be achieved.

Uttar Pradesh

The Chief Secretary has filed the Quarterly Progress Report dated 11.12.2019. The Report gives a Tabular Statement in respect of expected date of completion of projects and proposes revised timelines for Segment 'B' Phase I and for rest of the State. The report further indicates status of CETPs at Kanpur, utilization of Treated Sewage Water, Bio-remediation of 44-59 drains having sent the proposal/DPR amounting rupees 1796 crores to NMCG, sanitation status in Ganga towns, Solid Waste Management in-situ and safe disposal of chromium dumps at Khanchanpur, Rania and Kanpur Dehat.

It has been further informed that where CETPs are not working properly, Environment Compensation has been imposed. UPPCB is regularly monitoring the status of compliance of STPs and CETPs and during the quarter of September to November, 20 STPs have been found defaulting on which notices have been issued for imposing Environment Compensation of Rupees 39.04 crores. With regard to CETPs, it is stated that out of 07 CETPs, 02 CETPs have been found defaulting against which EC of rupees 45.60 lakhs has been imposed.

Further, Report on Environmental Flow has been filed along with Report of Irrigation and Water Resource Department. Demarcation of Flood Plain Zone of River Ganga in Segment 'B' has been completed and field verification has been done.

State of Bihar (Page 15526)

- a. The report has been filed on 30.11.2019 by SPMG Bihar. The report indicates following towns on the bank of River Ganga

S.No	Name of the River	Name of Towns
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1	Ganga	<ol style="list-style-type: none"> 1. Patna A. (Phulwarishariff) 2. Maner 3. Danapur 4. Bakhtiyarpur 5. Barh 6. Mokam 7. Munger 8. Sultanganj 9. Bhagalpur 10. Buxar 11. Barahiya 	<ol style="list-style-type: none"> 12. Jamalpur 13. Kahalgaon 14. Chhapra 15. Sonapur 16. Hajipur 17. Begusarai 18. Khagaria 19. Naugachhiya 20. Dighwara 21. Teghra 22. Manihari
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b. Liquid Waste Management

- A total 26 sewerage infrastructure projects sanctioned at a cost of Rs 5089.82 Crore which are at various stages of implementation in towns namely Patna (11 projects), Begusarai, Munger, Hajipur, Mokama, Sultanganj, Naugachia, Barh, Bhagalpur, Sonapur, Chhapra, Khagaria, Bakhtiyarpur, Maner, Danapur and Phulwarishariff. These projects will facilitate in treatment of 616.5 MLD of sewage through creation/rehabilitation of STPs, sewerage network and allied Interception and diversion works.
- 16 projects (Beur STP, Beur Sewerage Network, Saidpur STP & Adjoining Network, Saidpur Sewerage Network, Karmalichak STP, Karmalichak Sewerage Network, Pahari STP, Pahari Zone-IV A (South), Pahari Zone V, Sultanganj, Mokama, Sonapur, Barh, Naugachhiya, Bakhtiyarpur and Maner) are under implementation
- LOA has been issued for 2 projects (Digha, Kankarbagh) and 10 projects (Munger, Hajipur, Bhagalpur, Begusarai, Chhapra,

Khagaria, Munger and Fatua, Danapur, Phulwarishariff in one package) are under tendering stages.

- In addition, revised estimate of 1 project (Buxar) is under process
- Total 126 Nallas in the Ganga towns in which 124 Nallas has been screened. Rest 2 Nallas screening not required.

State of Jharkhand (P-15508 to 15512)

- a. 2 STPs have been constructed by SMLP and 7 MLD capacity and the work is completed.
- b. 1 STP of 3.5 MLD capacity is under construction and will be completed by June, 2020.

State of West Bengal (Page 15522-15524)

- a. Report has been filed on 29.11.2019 by Programme Director WBSPMG. The quarterly report relates to details of STPs and target dates. According to the report, there will be overshooting of the dates/prescribed timelines given in the Order of the Tribunal dated 22.8.2019.

Report of CPCB on Biodiversity Parks

Though the issue has not been finalized, the proposal is to prepare guidelines giving structural components of biodiversity parks with reference to such parks already developed and functional. The report mentions as follows:

“.....DDA has notified so far 7 Biodiversity Parks (the Yamuna, the Aravalli, the Neela Hauz, the Tilpath Valley, the Northern (Kamla nehru) Ridge, Tughalaqabad and South Delhi Biodiversity Parks, besides the recent order for setting up of Riverfront Biodiversity Parks by DDA. Of these 7 Biodiversity Parks, the Yamuna and Aravalli Biodiversity Parks are fully functional and have become Nature Reserves of Delhi. Both the Biodiversity Parks have become global models for conservation of natural heritage and environmental sustainability. The Yamuna Biodiversity Park model is an appropriate model for replication in the floodplains of the rivers across India.”

Conservation zone will have biological communities and forest communities as follows:

“Nature Conservation Zone

The Nature Conservation zone has biological communities interspersed with wetlands and grasslands. There are altogether 25-30 biological communities, some of which are given below:

- (i) *Mitragyna* dominated communities (Figure 1 a)
- (ii) *Terminalia chebula* dominated communities
- (iii) *Adina* dominated community
- (iv) *Acacia catechu* dominated community (Figure 1 b)
- (v) *Holoptelia* dominated community (Figure 2b)
- (vi) Teak dominated community
- (vii) *Terminalia tomentosa* dominated community
- (viii) *Acacia nilotica* dominated community
- (ix) *Dalbergia sisso* dominated community
- (x) *D. lanceolata* dominated community
- (xi) *Albizia* dominated community (Figure 2a)
- (xii) *A. lebbeck* dominated community
- (xiii) *Cordia* dominated community
- (xiv) *Jamun* dominated community (Figure 2c)
- (xv) *Amla* dominated community
- (xvi) Grasslands communities (that include short, intermediate and tall grasslands) (Figure 2b)
- (xvii) Mixed deciduous forest (Figure 3a)
- (xviii) Wetlands ecosystems (wetlands are fully functional and biologically rich and attract 1000s of migratory birds during winter months) (Figures 4a,b,c&d)

Communities have diversified food web and three trophic levels. These riparian forest communities provide a wide range of ecological services and harbour rich wildlife (Figure 7b, 8a&b).

These diversified riparian ecosystems: (a) buffer ambient temperature, (b) prevent evaporation by keeping the water cool, (c) provide detritus (organic matter) to the biota that live in the river water and purify the water more effectively than RO plants, (d) prevent erosion / gully formation on the flood plains, (e) enhance recharging potential of the flood plains, (f) serve as filter for both point and non point source air pollution, (g) act as shelter belt, (h) reduce the flood water velocity that ensure protection of infrastructure and communities in the downstream, and (i) harbour rich wildlife having three trophic levels.

The wetlands alone store flood water of several million gallons and recharge ground water and even provide lateral flow to the river during lean period, clean waste water if it enters into river system (treatment wetlands) through storm drains. The wetlands also serve as habitat for a wide range of animal species that form

a rich trophic life. These wetlands attract 1000s migratory birds during winter months.”

A test case has been proposed to rejuvenate Kali river stretch of 200-300 km from Khatauli to the Aligarh-Diwai Railway Bridge (at Chhatari village) where the Kali river exits from Bulandshahr District.

20. We have heard Shri A.N.S. Nadkarni, learned ASG appearing for the State of Uttarakhand and learned Counsel for the States of Uttar Pradesh, Bihar, Jharkhand and NMCG. None appears for the State of West Bengal.
21. It is seen that except the State of Uttarakhand, no other report has been given in a tabular form as directed in terms of para 30 in the order dated 22.08.2019. With regard to State of Uttarakhand, progress has been indicated on the following subjects:
- i. Setting up of STPs, Interception and Division (I&D) of drains and preventing untreated sewage and effluents in the River Ganga
 - ii. Use of treated water
 - iii. Use of sludge manure
 - iv. Status of septage management
 - v. Compliance in relation to industries
 - vi. Installation of STPs/treatment facilities in Hotels/Ashrams and Dharmshalas.
 - vii. Water quality monitoring of river Ganga and its tributaries.
 - viii. Maintenance of environmental flow in river Ganga.
 - ix. Disposal of Bio-medical waste.
 - x. Compliance of Solid Waste Management (SWM) Rules, 2016.
 - xi. Preparation of maps and zoning of flood plains.

- xii. Mining activity under supervision of the concerned authorities.
- xiii. Action against identified polluters, law violators and officers responsible for failure for vigorous monitoring.

22. It is stated that the work of STPs will be completed within the timeline laid down and bioremediation has been started on seven drains which have not yet been taped. The points raised by the Monitoring Committee have been addressed. Learned ASG, however, stated that more action was required for solid waste management for which CCTV cameras need to be installed, security guards posted and designated areas cordoned off. Legacy waste dump sites which are said to be atleast 12 in major towns need to be bio-remediated. Let such steps be taken expeditiously.

VII. Consideration:

23. The States of Uttarakhand, UP, Bihar, Jharkhand and West Bengal need to take further action in terms of orders of this Tribunal for preventing pollution and rejuvenation of Ganga and its tributaries as per timelines already given. The report filed by UPPCB shows that as of now lot of untreated sewage is entering into the River Ganga and its tributaries. Similar is the position in the States of Jharkhand, Bihar and West Bengal. Despite directions of this Tribunal, in-situ Sewage Treatment is not shown to have commenced for any of the drains except in the State of Uttarakhand. There is no information on water quality of river Ganga in the stretch falling in UP, Jharkhand, Bihar and West Bengal and information of regulation of Flood Plain Zone. The reports from the States other than Uttarakhand do not

describe the number of drains and a plan for their interception and diversion to the Sewage Treatment Plants.

As regards solid waste management, including legacy waste sites, this Tribunal has already issued directions in *O.A. No. 606/2018* as noted in para 10 of the order dated 22.08.2019 and in *O.A. No. 519/2019* as already observed in para 19 in the order dated 22.08.2019 to the effect that tender process can be avoided if other successful models and rates involved therein such as Indore model are to be followed. Directions have also been issued for installing CCTV cameras and undertaking surveillance in para 25 of the said order. Further directions are for ensuring that not even a drop of raw sewage should be discharged in river Ganga and where STPs are not operative, immediate bio-remediation and/or phytoremediation need to be undertaken and to avoid procedural delay of tender process etc., specifications and norms should be adopted in consultation with the CPCB. We may also note that vide order dated 18.10.2019 this Tribunal in *O.A. No. 606/2018* directed that rates for all such services and particulars of service providers should be standardized and specified on GeM portal. NMCG is a part of the Committee constituted by this Tribunal. Further, for setting up of STPs standard cost involved is said to be around Rs. 2 crore per MLD as per works allotted by NMCG. Cost of establishing sewerage networks, including setting up of pumping stations is said to be around Rs. 5 crores per MLD. Further direction on the subject may be issued by the NMCG/CPCB pending report of the Committee constituted by this Tribunal. All that this Tribunal can observe is that clearance of legacy

waste and sewage treatment being high priority areas, the authority should find ways and means to shorten the delays by avoiding DPRs/tender process which can be done if specifications and rates are standardized which may be explored by the concerned authorities.

24. The Tribunal has also directed that atleast interim measures of treatment of sewage by way of bio-remediation and/or phytoremediation or any other measures may start positively from 01.11.2019, failing which the defaulting States may be liable to pay compensation of Rs. 5 lakhs per month per drain and for such violations, adverse entries must be made in the ACRs of the identified officers.

We reiterate the said direction and since 01.11.2019 has already gone, wherever interim treatment of untreated sewage has not started in the manner earlier directed, the compensation be deposited with the CPCB which will be personal responsibility of the Chief Secretaries of the concerned States. The Chief Secretaries of concerned States are put to notice that in case of any default in compliance their salaries may be liable to be stopped and for enforcing the directions, further coercive measures including order of civil imprisonment may be liable to be passed personally against the Chief Secretaries.

25. We may also refer to the order of this Tribunal dated 03.12.2019 in O.A. No. 425/2019, *Vijay Kumar Vs. State of Himachal Pradesh*, to the

effect that Hydropower projects in hill States including Uttarakhand must ensure minimum specified e-flow.

We may also add that replenishment study of mining areas needs to be carried out, if not already done. This may be mentioned in the next report of the States.

26. As already mentioned, with regard to States of Uttar Pradesh, Bihar and Jharkhand, the status report is not in a tabular form as required. It is not clear whether the STPs are functional and meet the norms. Bio-remediation, phytoremediation or any other measures for treatment of sewage have not started where STPs are not functional, except that in respect of 14 drains in Kanpur interception and diversion works are said to have been undertaken/completed. Directions in para 23 above will also apply to the Chief Secretaries of the all concerned States. CPCB may monitor and give its report to this Tribunal.

VIII. Future Monitoring Mechanism after submission of final reports by the Committees constituted by the Tribunal earlier

27. As noted earlier in para 5 above, this Tribunal constituted Monitoring Committees headed by former High Court Judges in the States of Uttarakhand and UP. The Committees were meant to monitor the progress till further orders and vide order dated 22.08.2019, the said Committees were to furnish final reports which have since been furnished. There is thus need for further directions for effective monitoring mechanism. While the Chief Secretaries of the States are expected to monitor rejuvenation of Ganga on the pattern of

monitoring of rejuvenation of 351 polluted river stretches, which include Ganga and its tributaries, in terms of orders of this Tribunal in O.A. No. 673/2018 and O.A. No. 606/2018, on suggestion of State of UP, this Tribunal set up a Monitoring Committee for environmental issues in the State of UP vide order dated 21.10.2019 in O.A. No. 670/2018. The said Committee may henceforth monitor steps for prevention and control of pollution of Ganga also in the same manner as other issues are being monitored. In State of Uttarakhand Justice U.C. Dhyani is heading Monitoring Committee for solid waste management and certain other issues. Such Committee may also monitor prevention and control of pollution of Ganga in the State of Uttarkhand. It is not necessary to continue other members in terms of earlier orders in the present matter, unless the State so directs. It is open to the States of Jharkhand, Bihar and West Bengal to evolve or suggest any additional monitoring mechanism on the pattern of State of UP or otherwise. These directions will not affect in any manner working of any Committees or authorities under the provisions of NMCG or otherwise.

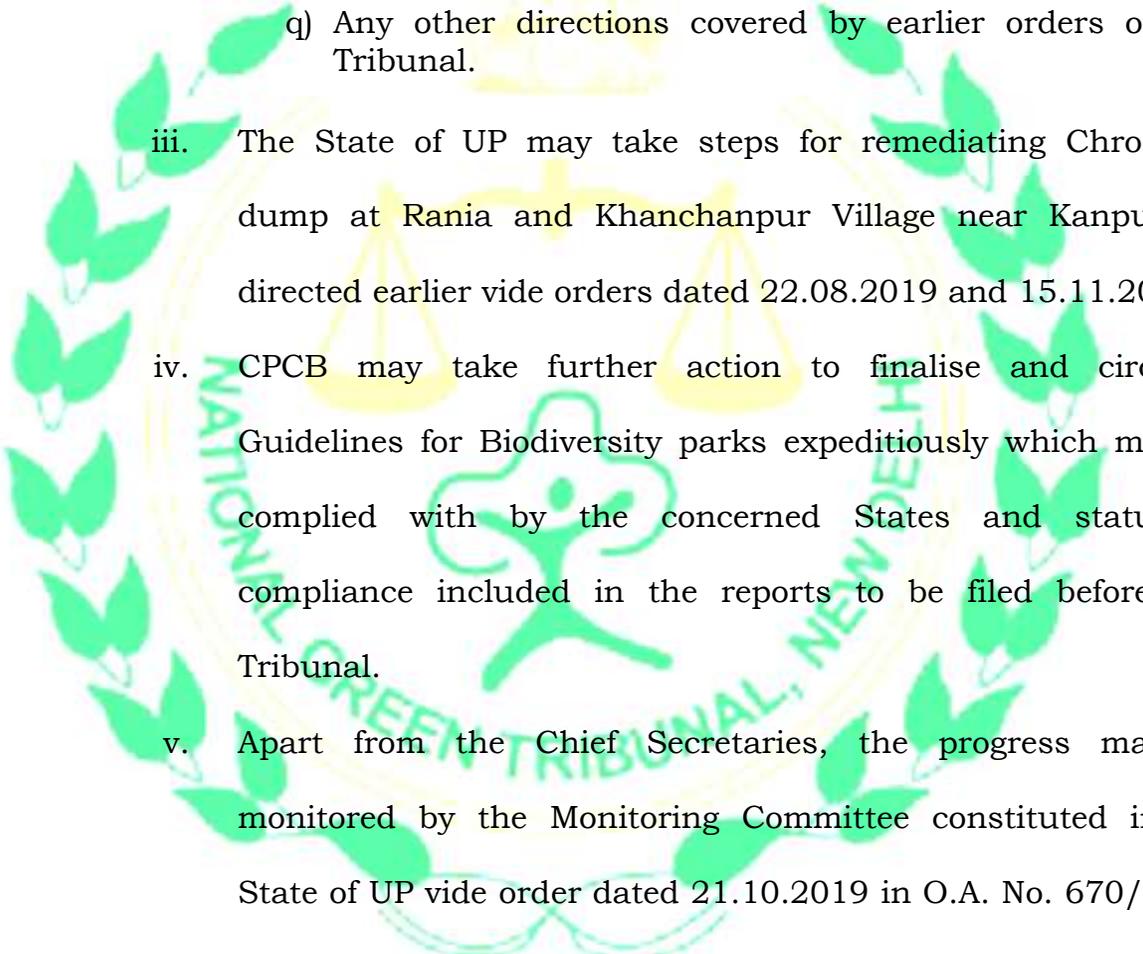
IX. Directions:

28. We may now sum up our directions as follows:
 - i. As already directed vide order dated 22.08.2019, timely completion of all projects relating to sewage treatment be ensured i.e. by 31.06.2020 in respect of ongoing projects and by 31.12.2020 in respect of others failing which compensation has to be paid in terms of the said order, apart from action against the erring officers. Till then, to avoid untreated sewage

being discharged directly into Ganga, interim remedial measures have to be adopted and for the default after 01.11.2019 compensation has to be deposited in terms of order dated 22.08.2019. CPCB may make necessary calculation within one month from today and raise demands with the Chief Secretaries of the concerned States which may be complied within one month from the date of such demand failing which accountability will be of the Chief Secretaries personally.

ii. NMCG and concerned States – Uttarakhand, UP, Jharkhand, Bihar and West Bengal may take further steps as per directions already issued for

- a) Preventing discharge of industrial effluents in Ganga and its tributaries/drains by ensuring installation of proper functioning of ETPs/CETPs.
- b) Utilization of treated sewage, use of sludge as a manure and septage management.
- c) Demarcation of flood plain zones and preventing encroachments thereof.
- d) Maintenance of e-flow.
- e) Preventing dumping of solid and other waste in and around Ganga.
- f) Clearing old legacy waste dump sites.
- g) Preventing and regulating illegal sand mining.
- h) Steps for conservation of groundwater particularly with reference to critical, semi-critical or over-exploited areas.
- i) Restoration of water bodies.
- j) Monitoring and displaying of water quality.
- k) Taking action against polluters by way of recovering compensation for restoration of the damage to the environment.

- 
- l) Closing, till compliance, all establishments near river banks being run without necessary STPs and compliance of environmental norms.
 - m) Public awareness and involvement for prevention and control of pollution of Ganga.
 - n) Regulating activities on and around river Ganga including ghats and other establishments.
 - o) Afforestation and setting up of biodiversity parks.
 - p) CPCB and SPCBs may periodically undertake biological assessment of Ganga. NMCG and States concerned may depict biological diversity of Ganga in public domain.
 - q) Any other directions covered by earlier orders of this Tribunal.
- iii. The State of UP may take steps for remediating Chromium dump at Rania and Khanchanpur Village near Kanpur, as directed earlier vide orders dated 22.08.2019 and 15.11.2019.
- iv. CPCB may take further action to finalise and circulate Guidelines for Biodiversity parks expeditiously which may be complied with by the concerned States and status of compliance included in the reports to be filed before this Tribunal.
- v. Apart from the Chief Secretaries, the progress may be monitored by the Monitoring Committee constituted in the State of UP vide order dated 21.10.2019 in O.A. No. 670/2018, by Justice U.C. Dhyani in the State of Uttarakhand and in such manner as may be laid down by the Chief Secretaries in the States of Jharkhand, Bihar and West Bengal in the light of discussion in para 27 above.
29. Let further quarterly progress report be filed by 31.03.2020 by e-mail at judicial-ngt@gov.in.

List for further consideration on 29.04.2020.

A copy of this order be forwarded to the Hon'ble Supreme Court in terms of directions of the Hon'ble Supreme Court vide order dated 29.10.2014, (2015) 12 SCC 764 Para 20.

Adarsh Kumar Goel, CP

S.P. Wangdi, JM

Dr. Nagin Nanda, EM

December 18, 2019
Original Application No. 200/2014
DV

