

Item No. 01

Court No. 1

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

Original Application No. 06/2012
(With report dated 05.02.2020)

Manoj Mishra

Applicant(s)

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 18.02.2020
Date of uploading on website: 05.03.2020

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
HON'BLE MR. SIDDHANTA DAS, EXPERT MEMBER

ORDER

The issue: Execution of NGT order for rejuvenation of river Yamuna

1. This order may be read in continuation order dated 22.01.2020.

The issue for consideration is the execution of directions in the judgment of this Tribunal dated 13.01.2015 reported in 2015 ALL (I) NGT REPORTER (1) (DELHI) 139 and further orders for rejuvenation of River Yamuna in pursuance of order of the Hon'ble Supreme Court transferring proceedings pending before it in W.P. No. 725/1994 on the subject to this Tribunal.

Since no meaningful progress took place for a long time, this Tribunal constituted a two member Yamuna Monitoring Committee (YMC) vide order dated 26.07.2018 for monitoring a time bound action plan.

Background of the NGT order – consideration of first report of YMC

2. Before referring to the order dated 22.01.2020, we may refer to order dated 11.09.2019 wherein the background of the matter was mentioned as follows:-

*“2. It is necessary to give a brief background of the case before issuing further directions. The issue of control of pollution and rejuvenation of river Yamuna was taken up by way of **Writ Petition No. 725/1994** by the Hon’ble Supreme Court based on a news item published in Hindustan Times titled **‘And Quite Flows the Maily Yamuna’**. Grim situation of pollution and failure of authorities to take appropriate action was noted by Hon’ble Supreme Court in various orders¹. Vide order dated 10.12.2012, the Hon’ble Supreme Court noted **“despite heavy expenditure, in thousands of crores, having been incurred by the Central Government, Government of the States of Haryana and Uttar Pradesh and the local authorities in the National Capital Territory of Delhi, the pollution of river Yamuna has increased by the day”**. It was further observed that the water quality of river Yamuna at the Nizamuddin Bridge as shown from the analysis of the samples by the Central Pollution Control Board (CPCB) to be: BOD 37 mg/l (against permissible limit of 3 mg/l), **faecal coliform 17,00,00,00,000 (against permissible limit of 500 MPN/100 ml)**. The situation was found to be similar at KalindiKunj, Okhla and even Palwal. The Hon’ble Supreme Court directed preparation of action plans and after continuing to monitor it for 23 years, on 24.04.2017, the proceedings were transferred to this Tribunal. In the meanwhile, O.A. No. 6/2012 was filed before this Tribunal on which response was sought from Govt. of NCT of Delhi, DJB, DDA, DPCC and the States of Haryana and Uttar Pradesh. In the light of material furnished, vide order dated 13.01.2015, this Tribunal issued directions to take remedial steps to control the pollution and to rejuvenate the river Yamuna. Further directions were also issued in the light of order of the Hon’ble Supreme Court dated 24.04.2017. **The said orders required time bound actions.** Orders dated 13.01.2015 and 08.05.2015 divided the project of cleaning and rejuvenation into 2 phases. First Phase related to Najafgarh, Delhi and supplementary drains. Second phase related to all other drains. Order dated 08.05.2015, accepted **“Maily Se Nirmal Yamuna”** Revitalization Plan, 2017 in principle subject to specific directions. **It was further directed that environmental compensation will be recovered from every household generating sewage on polluter pays principle irrespective whether the household was sewered or not.***

¹ (1999) 1 SCC 161, (2000) 10 SCC 587, (2000) 9 SCC 440, (2004) 8 SCC 638, (2009) 17 SCC 708, 716, 718, (2012) 13 SCC 736, 786

3. Finally, on 25.07.2018, after noticing the earlier proceedings, it was again noted that there was no meaningful progress in the last three years. The work for 14 STPs had not even begun for which no justification was furnished.² The Tribunal directed that the said work must commence positively by 01.12.2018. Coronation Pillar was to be completed by 11.04.2019. Work of Najafgarh drain was to be completed by 31.12.2018. 11 drains were said to have been tapped and work for trapping of 5 drains was to be awarded and completed by December 2020, except the one for which the work was to be completed by 2018. The State of Haryana was directed to file an affidavit showing the steps taken to ensure that no untreated pollutants are discharged into Najafgarh drain and no untreated sewage flows from DD2 drain at Panipat.

4. In continuation of the said order, on 26.07.2018, a status report on sewage management was noted and **it was found that at most of the places, BOD/SS levels were not meeting the required parameters.**³ **The Tribunal constituted a two Member Committee for time bound action plan and framework for implementation.** The Committee was to draw up comprehensive, integrated and inclusive strategy with clear measurable indicators of progress and success. The action plans were also to include creation of biodiversity parks. The DDA was required to make the entire flood plains available to the Forest Department after demarcation. The Monitoring Committee was also required to lay down a plan for collection of funds on the 'Polluter Pays' principle and to deal with the problems of idol immersion in the river Yamuna. **The States of Uttar Pradesh and Haryana were directed to constitute their own Monitoring Committees. The existing Committees were to function in tandem with the Committees so constituted. The Committee was to give interim report by 31.12.2018.**

5. The Committee submitted its Core Action Plan dated 22.10.2018, identifying road map for monitoring the directions of this Tribunal activity wise and agency wise. The plan highlighted issues, present status and future actions. The sixteen action points identified are:

- i) Environmental Flow
- ii) DDA and Demarcation of the Flood Plains and Conservation Activities
- iii) Quality of River water
- iv) Sewage Treatment Plants
- v) Interceptor Sewer Project (ISP)
- vi. Repair and maintenance of Drains
- vii) Polluter Pays principle
- viii) Dredging and desilting
- ix) Industrial Pollution and CETPs

²Para 9

³Para 3

- x) Sewage and Faecal Sludge Management
- xi) Online Monitoring of STPs, CETPs and Yamuna.
- xii) Use of treated Waste Water
- xiii) Idol Immersion
- xiv) State of Haryana and pollution of the Yamuna
- xv) State of Uttar Pradesh and Pollution of the River
- xvi) Creating Public Awareness through Information Dissemination Strategies and Management”

6. The first report dated 16.01.2019 was furnished by the Committee which was considered vide order dated 29.01.2019. It was found that DDA was yet to undertake demarcation of the flood plains. There was a need to have a mechanism to stop dumping of debris by installing electronic surveillance system, aerial mapping to track debris, to set up check posts to track transportation of debris and for recovery of environmental compensation, setting up of more water quality monitoring stations, improvement and upgradation of STPs, setting up new STPs to bridge the gap between sewage generated and sewage treated, need for interceptors, maintenance of drains, improvement of CETPs and to set up sewerage network for unauthorized colonies. The Committee noted that the faecal coliform count was upto 6,400 times above the prescribed standards. Only 14% of the 1797 colonies had sewage pipelines. DDA had failed to remove the debris and to secure the area by erecting barbed wire fencing. The authorities in the State of Haryana were required to expedite action for reducing water pollution load. The State of Uttar Pradesh was required to tap the drains, set up STPs and take action against the polluting industries releasing effluents into drains joining the river. The Tribunal noted that the situation was grim and that the regulatory authorities had failed to apply the ‘Polluter Pays’ principle to control the polluting activities. In spite of the serious damage being caused, the authorities were not acting against the offenders either by prosecuting them and/or recovering the cost of restoration. Apart from failure of the Delhi Government, there was failure on the part of DDA, UP Government as well as Haryana Government. The Delhi Government, UP Government as well as Haryana Government were required to furnish performance guarantees in the sum of Rs. 10 Crores each with the CPCB. The DDA was also required to furnish a performance guarantee in the sum of Rs. 50 Lakhs with the CPCB. This Tribunal directed that further report be furnished by 20.05.2019.”

Consideration of Second Report of YMC and directions dated 11.09.2019 to the NCT Delhi, States of Haryana and U.P. for taking necessary steps for compliance of orders of NGT

3. **Second Report of the Committee dated 27.05.2019**, supplementary reports 28.06.2019 and 02.07.2019 and further reports commenting upon compliance status by authorities in Delhi dated 13.08.2019 and States of Haryana and Uttar Pradesh dated 20.08.2019 were dealt with **vide order dated 11.09.2019**. After noting the status of compliance of orders of this Tribunal under various headings in respect of Delhi, Haryana and U.P., the Tribunal observed:-

“1 to 10 xxx

xxx

xxx

11. Having noticed the status of compliance of directions of this Tribunal in NCT Delhi, State of Haryana and Uttar Pradesh, we may now consider further directions to be issued in respect of each of the identified action points. As already noted in the order dated 23.08.2019, **in view of repeated failure of the timelines earlier, fresh timelines have to be laid down with accountability for failure in the interest of protection of environment and public health and for rejuvenation of the river Yamuna, which is a major tributary of river Ganga and has its unique significance.** This is also necessary to comply with the mandate of directions of the Hon'ble Supreme Court referred to earlier. It may be noted that there are 351 polluted river stretches in the country identified as such by CPCB⁴ which include all major rivers and their tributaries⁴. This Tribunal is also dealing with the pollution of River Ganga and several directions have been issued including that no untreated sewage or effluents are discharged in the river and floodplains are protected.⁵ Yamuna flows through the National Capital and its rejuvenation can be a model to be followed for all other polluted river stretches. Restoration of the river is a matter of grave environmental urgency that also concerns the prestige of the country.

12. **One of the major concerns of this Tribunal is that repeated directions remain un-complied and in spite of large scale failures, no accountability is fixed.** There is huge loss to public exchequer for which no action is taken. Timelines are conveniently and unilaterally changed. Officers indulge in blame game in shifting responsibility from one to another. There is failure at higher levels in monitoring and taking actions. If this continues, it is difficult to expect any positive change for long. This requires paradigm shift in

⁴The said matter is being separately dealt with by this Tribunal in O.A. No. 673/2018. All the States/UTs have been required to prepare and execute action plan for remedying the said pollution. Chief Secretaries of all the States/UTs have been required to remain present in person with progress reports in the matter, along with other vital issues. All the 35 Chief Secretaries have already appeared once and are scheduled to appear again.

⁵ O.A. No. 200/2014 order dated 22.08.2019.

approach adopted so far. **The approach to be adopted is to have clear time-bound plan with flexibility and due to accountability for failure by way of departmental action and monetary compensation.** The rescheduled timelines have to be compressed so as to **complete every action by December, 2020** except where shorter timelines are specified in this order or are otherwise possible. If any contract permits longer timeline, it is clearly in violation of binding orders of the Tribunal which has attained finality. Violation thereof is per se criminal offence. Such longer timeline has to be consistent with orders of the Tribunal and compressed within 31.12. 2020. Failing to do so may invite criminal prosecution NMCG may also monitor the compliance. The Chief Secretaries of Delhi, Haryana and U.P. have to personally see the compliance and have to set up Monitoring Cell directly under them. Vice Chairman, DDA can also monitor and coordinate with Chief Secretary, Delhi. All other departments can monitor subject to overall directions of the Chief Secretaries. This can avoid shifting of responsibilities once ownership is with highest authorities in the State. Monthly review reports may be shared with the Monitoring Committee and also placed on websites of concerned States. Failure and successes of the individual involved may be specifically recorded and reflected in service record of the concerned officer. Stock taking may be done by the Chief Secretaries of the failure and successes so far and appropriate actions be initiated against those who have been responsible for the failure. Nodal Officers may be identified in respect of different projects clearly defining the responsibilities. Wherever there is misappropriation of funds, criminal case has to be registered. Posting of Officers entrusted with the responsibility may be reviewed from time to time depending on their responsibility. Procedure for giving of contracts may be shortened and standardized at State level and if possible at National level by NMCG and CPCB. Giving of contracts should be based on successful credentials instead of mere lowest rates. Pollution load at entry and exist point of each concerned State may or at entry points of each drains need to be recorded periodically. **The Chief Secretaries of Delhi, Haryana and U.P. may furnish action taken reports in this regard at the time of their personal appearance before this Tribunal in O.A. 606/2018.**

13. Priorities need to be planned. **The first step is to ensure that no pollutant is discharged into the river or drains connected thereto.** Projects of setting up and upgradation of STPs including setting up of interceptors, laying of sewerage line network etc. have to be completed within strict timelines. Pending such action, immediate bioremediation and/or phytoremediation or any other alternative remediation measure may be undertaken as an interim measure. Pollution of river or water bodies is a criminal offence which needs to be checked by setting up ETPs/CETPs/STPs. **The Hon'ble Supreme Court has**

directed⁶ that establishment and proper functioning of ETPs/CETPs/STPs in the country be ensured. This is to enforce the right of access to water. It has been noted by the Hon'ble Supreme Court that water pollution is the cause of various diseases and also affects food safety apart from affecting the environment as such. Following the said judgment, this Tribunal has directed⁷ that **“All the local bodies have to ensure 100% treatment of the generated sewage and in default to pay compensation which is to be recovered by the States/UTs, with effect from 01.04.2020.** In default of such collection, the States/UTs are liable to pay such compensation. The CPCB is to collect the same and utilize for restoration of the environment.” While dealing with the pollution of river Ganga, this Tribunal directed:

“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.

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.”⁸

14. Second important issue pertains to demarcation and protection of flood plains and preventing dumping of any waste. Other significant issues have already been identified

⁶ (2017) 5 SCC 326

⁷ Order dated 28.08.2019 in Paryavaran Suraksha Samiti & Anr. Vs. Union of India & Ors., O.A No. 593/2017

⁸ O.A No. 200/2014 order dated 22.08.2019

by way of action points noted above. On some of these aspects, further specific directions are necessary.

15. Accordingly, apart from direction in paras 12 & 13 above, we proceed to issue following further directions:

A. IN RESPECT OF NCT DELHI

(i) Environmental Flow:

- a) The impact on ground water regime due to pilot project may be monitored by CPCB, DPCC and CGWA. The study being carried out by the National Instituted of Hydrology, Roorkee (NIH) on directions of NMCG may be completed as per schedule by March 2020. An interim report be furnished by December 2019.
- b) The current regime of Environmental flows may be augmented especially in lean seasons by way of coordination amongst member states stakeholders.

(ii) Demarcation and Rejuvenation of the Flood Plains:

- a) DDA may undertake physical demarcation of the entire floodplain within three months and thereafter, after taking re-possession within next three months, fence such areas and convert them into bio-diversity parks as per the action plan proposed by them. DDA will be liable to pay a sum of Rs. 5Lakh per month till compliance of this direction from 01.04.2020 which may be recovered from the erring officers and deposited with the CPCB for restoration of the environment. The Monitoring Committee will look into the compliance.
- b) No activity of edible crop/ cultivation on the floodplain may be undertaken. The DDA may ensure compliance in the same manner as direction (a) above with regard to accountability of officers.
- c) **The DDA to assign the task of demarcation, re-possession, fencing and development of bio-diversity park thereon to an appropriate and dedicated institutional set up.**
- d) DDA shall complete the work of putting of CCTVs and keep the area secure from further encroachments as such.
- e) The agencies (Railways, NHA and GAIL) shall give requisite permission to DDA for launch of optical fiber cable within one month of the receipt of such request

after which the DDA will be free to proceed subject to any objection there against being considered by this Tribunal.

- f) The UP Irrigation Department shall give permission to DDA for the execution of CCTVs related work to the DDA within one month of the receipt of such request after which the DDA will be free to proceed subject to any objection there against being considered by this Tribunal.
- g) DDA to strictly regulate illegal dumping of malba or carrying the same to flood plain by collecting compensation wherever violations are found and submit action taken report to Monitoring Committee.
- h) The prohibition with regard to the throwing of pooja material or any kind of other material in river Yamuna except only designated sites to be ensured by DDA, GNCT, UP and Haryana.
- i) The Transports Departments of GNCT, UP and Haryana need to enforce the said polluter pays principle so that no malba is dumped on the flood plains.
- j) In view of comments of the Monitoring Committee, the DDA is directed to undertake the work of restoration of flood plains so that such flood plains undertakes or performs the requisite ecological functions and DDA submits an action plan with timelines to Monitoring Committee in this regard, within one month from today.

(iii) Quality of River Water:

Monthly reports on the water quality be furnished by DPCC to the Monitoring Committee which must also contain data on faecal coliform and till the time DPCC establishes its own laboratory network, **the samples may be got analyzed either from CPCB laboratory or other accredited laboratory with respect to aforesaid parameter.** Such reports must be placed on the website of DPCC and CPCB. For failure to comply with this direction, **DPCC will be liable to pay environment compensation of Rs. 2 lakh per month to CPCB for restoration of environment with effect from 01.10.2019.** The amount can be recovered from the erring officers apart from appropriate entries in their service records.

(iv) Sewage Treatment Plants:

- a) DJB has to give definite milestones and timelines to bridge the gap in terms of poor capacity initialization within one month.
- b) The DJB to prepare an Action Plan with timelines for better capacity utilization of STPs by tapping the drain as a short term measure to reduce pollution in River Yamuna within one month.
- c) DJB to prepare an action plan with specific timelines and implement the same in terms of bridging the capacity gap and upgradation of existing STPs that are functioning on old parameters.
- d) DJB to take concerted steps in terms of actions not taken so far and fix the accountability of erring officials.
- e) **DJB to complete the task of setting up of STPs by 31.12.2020.**
- f) The DJB needs to spell out action to be taken with specific timelines within one month.
- g) **Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the Govt. of NCT of Delhi 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, sewerage network and its connectivity. For delay of the work, the Chief Secretary, Govt. of NCT Delhi must identify the officers responsible and assign specific accountability. 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, sewerage network and its connectivity by the concerned head of the department.
- h) The Govt. of NCT, Delhi will be liable to pay Environment Compensation if defaults take place as under:
- i. **The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.**
 - ii. **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 Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.

- iii. **With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the Govt. of NCT, Delhi has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to Govt. of NCT of Delhi to recover the said amount from erring officers/contractors.**

(v) Interceptor Sewerage Project (ISP):

- a) DJB to put the systems in place for project monitoring so that timelines are adhered to.
- b) DJB is directed to adhere to the timelines with regard to ISP and treat all the 242 MGD sewage by 31.12.2019.
- c) For failure to comply with the above directions compensation will be payable at the rate of Rs. 5 Lakhs per month till compliance from 01.01.2020. Entries be also made in the service records of the erring officers to fix their responsibility.

(vi) Maintenance of Drains:

- a) The DJB and NDMC to identify and plug the sources of sewage within two months positively and report compliance to Monitoring Committee.
- b) Tapping of Drains:
- i. Qudasiabagh+Mori Gate drain Flow: 43.2 MLD): DJB to make an assessment of sewage coming from sewered areas and prepare an action plan with timelines for plugging the discharge into storm water. New STPs be established only for non-sewered areas.
- ii. Barapula Drain (Flow: 145.15 MLD): DJB to submit action taken on Action Plan which it had submitted to NGT in 2014 in terms of actions on short term, medium term and long terms measures envisaged.
- iii. Maharani Bagh Drain (30.24 MID): DJB to indicate proposal to stop the flow in the drain

with specific timelines in terms of tapping or laying of sewer lines in un-authorized colonies.

- iv. Najafgarh drain (2056 MID) and Shahdara outfall drain (475 MID): The DJB is directed to attend to the observation of Monitoring Committee so that all the intercepted sewage is treated. The States of Haryana and UP are directed to submit their Action Plan with specific timeline to attend the flow of untreated sewage into said drains.
 - v. Status of other storm water drains carrying sewage: The DJB is directed to submit a specific timelines with specific accountability so that no sewage finds its ways from sewer areas into the storm water drain.
 - vi. Status of Punctured Sewers: DJB to ensure that such instances are attended on priority with specific accountability.
 - vii. Ameliorative measures for cleaning drains & Constructed Wetlands and In-situ Bioremediation Technology: The Irrigation and Flood Control Department to develop a mechanism of third party verification report on the ameliorative measures undertaken by it.
 - viii. Controlled Dredging in River Yamuna: The finding of the study undertaken by NEERI to assess slug deposition on river bed of Yamuna be evaluated and appropriate decisions be undertaken by IFCB (The Irrigation and Flood Control Department).
- c) For failures in tapping the drains, environmental compensation at the rate of Rs. 5 lakh per drain per month will be paid by the DJB or concerned department to the CPCB for environmental restoration. Entries in the record of the erring officers also be recorded consistent with the earlier directions.

(vii) Industrial Pollution:

- a) DPCC is directed to continue with the survey and monitoring of industries both in confirming and non-confirming areas and take action in accordance with law against polluting units and file report of action three months besides recovery of EC. **In case of non-compliance Delhi Govt will be liable to pay Rs. 5 lakh per month from 01.01.2020.**
- b) As there are 13 Departments responsible for regulating illegal dumping of solid waste and C & D waste in Yamuna and drains leading to Yamuna.

The Chief Secretaries, GNCT Delhi is directed to coordinate so an effective mechanism is evolved for stopping of said waste in Yamuna or its drains. **In case of non-compliance Delhi Govt will be liable to pay Rs. 1 lakh per month from 01.11.2019 to the CPCB in the manner mentioned earlier.** Accountability of the officers may be determined in the manner mentioned earlier. The Committee may monitor this aspect.

(viii) Sewage and Faecal Sludge Management and Levy of Environmental Compensation:

- a) An incremental progress of collecting 2 MGd of septage in 120 days needs to be quantified by DJB in terms of the number of households with pit latrines, map the SPS' where the collected septage has to be deposited colony wise and sub-district wise and monitor licenses issued at a disaggregated level. DJB to assign responsibility to an organisation which can collect and furnish incremental progress.
- b) DJB may prepare an Action Plan for providing unauthorized colonies with sewerage systems.
- c) Govt. of NCT Delhi, DJB, DMCs and DDA to collectively undertake advance planning for location of STPs, SPS', peripheral and trunk lines before new populations settle in.
- d) **Chief Secretary, Govt. of NCT Delhi make it mandatory for those provided with piped water supply and those having a sewage conveyance system in the vicinity to take sewer connections.**
- e) **Chief Secretary, Govt. of NCT Delhi, DJB and DMCs to introduce the regime of levy sewerage charges as presently no such charges are being levied within two months including areas where network has been laid (whole of East Delhi).**
- f) **Considering that tens of thousands of households spew their garbage into the storm water drains and pay nothing for the environmental damage caused, the CEO, DJB and DMCs to ensure sever connectivity where sever network has been laid before 31.12.2019 failing which both these agencies shall be saddled with environment compensation to the tune of Rs. 10 lakh per month and disciplinary action against the Zonal Officer responsible for his zone.**

- g) **The Chief Secretary, GNCT Delhi, DJB and DMCs to ensure that a mechanism is evolved where by raw sewage from unauthorized colonies gets collected and taken to some central STP facility for treatment till the time sewer line network is laid in unauthorized colonies within three months and six months thereafter ensure implementation of laying of sewer line network failing which Environmental Compensation of Rs. 10 lacs per month shall be levied on each of them.**
- h) *An institutional mechanism be established by the Chief Secretaries, GNCT Delhi, DJB and DMCs whereby the collection, transportation and disposal of septic tank waste is monitored.*
- i) *Accountability of the officers may be determined in the manner mentioned earlier. The Committee may monitor this aspect.*

(ix) Online Monitoring of STPs and CETPs

Regular calibration of OLMS in Sewage Treatment Plants and CETPs to validate sensor results with lab results to be overseen by DPCC and DJB and report submitted to the Chief Secretary, Delhi and Monitoring Committee on quarterly basis.

(x) Use of treated waste water

*DJB and park owning societies like DDA, DMCs, PWD to mandatorily use the treated water from STPs for all parks within 5 km radius of STPs and pending laying of pipelines, such treated water to be transported through tankers. **Compliance be reported by 31.12.2019 failing which DJB, DDA, DMCs, PWD and others shall each be charged Environmental Compensation at the rate of Rs. 5 lakh per month till compliance is reported. This shall be overseen by the Chief Secretary, Govt. of NCT, Delhi and the Monitoring Committee as this colossal waste of treated water cannot be allowed.***

(xi) Pollution due to Idol Immersion

The Chief Secretary Delhi to oversee and monitor and quarterly submit the report in terms of quantitative and qualitative improvement in this regard to the Monitoring Committee.

The DDA is not shown to have to furnished performance guarantee in terms of order dated 29.01.2019. The same may now be furnished with additional sum of Rs. 5 lakhs for the

delay within one month failing which coercive method have to be adopted for enforcement of the order.

B. IN RESPECT OF THE STATE OF HARYANA

(i) Status of STP:

- a) A single supervisory authority be made responsible for monitoring and implementation and proper coordination be ensured by the Chief Secretary, Haryana as multiple agencies are functional in STP construction, operation and implementation and maintenance etc.
- b) The operational deficiencies of the existing STPs must be rectified within 03 months incorporating the observations of RYMC, Haryana.
- c) The accountability of the responsible senior officer for each STP is required to be fixed by the Department. They must regularly evaluate the efficacy of the STP.
- d) The Standard Operating Procedure for STPs must be formulated expeditiously and followed in letter and spirit and adequately supervised by senior officers.
- e) The efficacy of all the STPs (Existing or under Construction/Upgradation) should be checked by reputed independent agencies so that the design and operational deficiencies can be rectified.
- f) The Line departments should submit the month wise execution plan for construction/upgradation of STPs so that the progress could be monitored by RYMC, Haryana.
- g) The state plan of Haryana for construction of new STPs and upgradation of existing STPs by 31.12.23 cannot be agreed to. The continuous action for pollution on account of sewage cannot be permitted. We direct Chief Secretary, Haryana to take stock of situation and complete all works by 31.12.2020.

(ii) Status of Diversion of Sewage in approved areas:

The Chief Secretary, Haryana to ensure that the Line departments must be adhered to the target date as no further extension of time is permitted and the Line departments should also submit the month wise execution plan for laying of sewer so

that the progress could be monitored by RYMC, Haryana.

(iii) Status of Diversion of sewage in unapproved areas:

- a) The ULB Department will ensure that the diversion of sewage from unapproved area of 31 Nos. of Towns must be completed along with the laying of sewer in approved area. No further extension of time will be permitted.
- b) The Chief Secretary, Haryana to ensure that the Line departments must adhere to the target dates as no further extension of time is permitted and the Line Departments should also submit the month wise execution plan for laying of sewer to divert the sewage to the STP so that the progress could be monitored by RYMC, Haryana.

(iv) Status of Sewage Treatment and laying of sewer line in Faridabad:

- a) Comprehensive date bound Action Plan is required to be submitted by the ULB Department for treatment and diversion of sewage from approved areas and unapproved areas of Faridabad Town. This is the only town where no planning has been made so far and entire sewage generated is being disposed without any treatment.
- b) The State ULB and HSVP to submit the time bound Action Plan for treatment and diversion of sewer from approved and unapproved areas within 02 months.
- c) The Principal Secretary, Urban Local Bodies Department (ULB) and Chief Administrator, Haryana Shahari Vikas Pradhikaran (HSVP) is directed to give administrative and financial sanction for the same in a time bound manner.
- d) The Line departments should submit the month wise execution plan for laying of sewer to divert the sewage to the STP so that the progress could be monitored by RYMC, Haryana.

(v) Status of Sewage Treatment and laying of sewer line in Gurugram:

- a) Chief Secretary, Haryana to coordinate and submit a time bound action to stop the discharge of untreated effluent into the Storm Water Drain, Leg-I, Leg-II and Leg-III (Badshapur Drain) leading to Najafgarh Drain

as this has been pending with the GMDA/State Government despite assurance given by the State since 28.07.2015.

- b) The detail Action Plan for construction of 20 MLD at Jhajjarh and 50 MLD STP at Dhanwapur shall be submitted within 01 month.

(vi) Status of Industrial Waste Water Pollution:

i. Status of CETP

- a) Chief Secretary Haryana, to Coordinate and enforce the work so that the ongoing works are completed in shortest possible time.
- b) Managing Director of HSIIDC to upgrade the existing STP at different locations on the basis of influent characteristics and submit revised Action Plan within one month and execute the same within next three month.
- c) Chief Administrator HSVP and Chief Administrator, GMDA to take appropriate corrective measures in their respective CETPs and report compliance to Monitoring Committee.

ii. Status of Stand Alone ETPs

State PCB to monitor all stand alone ETPs thereafter effective monitoring of Air and Water Norms and impose Environmental Compensation as per the protocol fixed by CPCB

iii. Septage Management Policy

The Chief Secretary, Haryana to ensure necessary action and compliance within three months positively.

iv. Diversion and reutilization of Domestic Sewage generated from villages.

The Additional Chief Secretary, Development and Panchayat Department of Haryana to complete the work of treatment of sewage in all 169 villages by 31.03.2019.

v. Status of Online Monitoring Devices (OMD) in Industries, STPs and CETPs

- a) The State Pollution Control Board, Haryana to ensure necessary action as regards effective functioning of OMD in Industries, STPs and CETPs.

b) The Chief Secretary, Haryana to take concrete steps to strengthen Haryana State PCB in terms of the order of Tribunal in O.A No. 95/2018 order dated 28.08.2019.

vi. **Compensation and accountability:**

Directions on the subject in respect of NCT Delhi will apply to the State of Haryana also. Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the Govt. of Haryana 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, sewerage network and its connectivity. For delay of the work, the Chief Secretary, Govt. of Haryana must identify the officers responsible and assign specific accountability. 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, sewerage network and its connectivity by the concerned head of the department.

i) The Govt. of Haryana will be liable to pay Environment Compensation if defaults take place as under:

a). **The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.**

b). **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 Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.**

c). **With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the Govt. of Haryana has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to Govt. of Haryana to recover the said amount from erring officers/contractors.**

- d). The state of Haryana is not shown to have to furnished performance guarantee in terms of order dated 29.01.2019. **The same may now be furnished with additional sum of Rs. 1 crore for the delay within one month failing which coercive method have to be adopted for enforcement of the order.**

C. IN RESPECT OF STATE OF UTTAR PRADESH

(i) Sewage Management:

- a) The Principal Secretaries, Environment and Forest and Urban Developments are required to prepare short and long term plans to control flow of sewage from UP into the river Yamuna at Ghaziabad with time lines for execution. U.P. Chief Secretary to monitor it.
- b) Chief Secretary U.P to ensure that clarity in terms of execution of time lines are given and action taken on ground with regard to interception and diversion of Banthala and Indira Canal drains.
- c) Chief Secretary, U.P to review the matter with regard to sewerage area, un-sewered areas and leakages in the sewer networks etc. and fix timelines for execution of same.
- d) Chief Secretary U.P to review the matter with regard to upgradation of STPs which are not meeting the norms and ensure coordination amongst departments.

Industrial Pollution:

- a) State PCB to evolve a mechanism to recover the EC from those refusing to pay.
- b) Complete inventory of industries both in conforming and non- conforming areas be prepared by State PCB within one month
- c) Report be submitted on performance of CETPs and ETPs of industries by UPSIDC and PCB.

(ii) Demarcation, Protection and Rejuvenation of Floodplains

The floodplain should be demarcated and developed through wetlands and biodiversity parks. Vice Chairman DDA and Principal Secretary, Irrigation, U.P to give specific timelines for setting up of same.

The Chief Secretary UP shall supervise and monitor the same.

(iii) Compensation and Accountability:

Directions on the subject in respect of NCT Delhi and Haryana will apply to the State of Uttar Pradesh also. Bioremediation and/or phytoremediation or any other remediation measures may start as an interim measure positively from 01.01.2020, failing which the State of Uttar Pradesh 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, sewerage network and its connectivity. For delay of the work, the Chief Secretary, State of Uttar Pradesh must identify the officers responsible and assign specific accountability. 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, sewerage network and its connectivity by the concerned head of the department.

- i). The State of Uttar Pradesh will be liable to pay Environment Compensation if defaults take place as under:
 - a). **The operational deficiencies of the existing STPs must be rectified within three months failing which Environmental compensation of Rs. 5 Lacs per month for STP shall be deposited with CPCB.**
 - b). **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 Yamuna and Rs. 10 lakhs per month to CPCB per incomplete STP, sewerage network and its connectivity will apply.**
 - c). **With regard to the situation where works with regard to STP, sewerage network and its connectivity have not yet started, the State of Uttar Pradesh has to pay an Environmental Compensation at the rate of Rs. 10 lakhs per month per STP, Sewerage network and its connectivity after 31.12.2020 for the delay in setting up of the same. It will be open to State of Uttar Pradesh to recover the said amount from erring officers/contractors.**

d). *The State of UP is not shown to have to furnished performance guarantee in terms of order dated 29.01.2019. **The same may now be furnished with additional sum of Rs. 1 crore for the delay within one month failing which coercive method have to be adopted for enforcement of the order.***

e). *The State of UP may cooperate and coordinate with the committee constituted by this Tribunal in absence of any satisfactory mechanism constituted by the State.*

16. *The Monitoring Committee may continue to monitor compliance of directions of this Tribunal and furnish its next status report as on 31.12.2019 by 31.01.2020 with comments on the affidavits of the concerned authorities. The same may also be uploaded on its website. We further direct the NCT Delhi, the States of Haryana and UP, DDA to file affidavits of compliance of the directions of this Tribunal as on 31.12.2019 before the Committee as well as this Tribunal on or before 15.01.2020. The registry may upload them on website as soon as received so that all concerned can access the same before the hearing to avoid the situation which arose on 12.7.2019 as noted in para 7 above.*

List for further consideration in the third week of February, 2020.”

Order of NGT dated 22.01.2020 on the issue of Yamuna River Front Management Authority for Delhi and Approach to In-situ Bio-remediation/Phyto-remediation of sewage in drains of Delhi and the issue of overall ownership of all drains.

4. Thereafter on 22.01.2020, the Tribunal considered the matter with reference to a chamber meeting held on 03.01.2020 to consider *inter-alia* the following:-

- “i. Interim steps for bioremediation and/or phyto-remediation or any other remediation to prevent untreated sewage being discharged into the river from the drains, pending installation of requisite STPs, to reduce the load of pollution on the recipient river system.**
- ii. *Considering representative models for the purpose of implementation of above steps.*
- iii. **Exploring the viability/possibility of overall ownership for such remediation in respect of all the drains in one single authority in Delhi for better coordination and execution.**

iv. ***Institutional mechanism for Yamuna River Front Management for ecological restoration of the Yamuna River Front.***

5. The Tribunal considered the reports dated 20.01.2020 of the YMC furnished in pursuance of the above, viz.:-

“i. Report on the need for "Yamuna River Front Management Authority for Delhi.

ii. Report on "Approach to In-situ Bio-remediation/Phyto-remediation of sewage in drains of Delhi.”

6. The Tribunal observed as follows:-

“First Report on "Yamuna River Front Management Authority for Delhi:

1. The first report is referable to item no. (ii) above. Observations of the YMC in its report dated 13.08.2019 were summarised in the earlier order dated 11.09.2019 as follows:

“I. Demarcation and Rejuvenation of the Flood Plain:

It has been commented by the Monitoring Committee with regard to the subject of Demarcation and Rejuvenation of the Flood Plain that following steps are required:

1. Physical demarcation of the entire floodplain to be done by DDA (Para 5A, Page 82)
2. No construction activity in the demarcated floodplain.
3. Repossessing the floodplain area under illegal and unauthorized possession. No activity of edible crop/ cultivation on the floodplain.
4. No activity of edible crop/ cultivation on the floodplain (Para E, Page 87)
5. No person/ authority shall dump any kind of construction debris on the floodplain area. There shall be prohibition of any kind of dumping of malba/ material in and around River Yamuna. (Para 6B, Page 88)
6. Polluter Pays Principle: Compensation of 50,000 INR. This compensation will be utilized for Restoration and Rejuvenation work. (Page 86)
7. Prohibition of throwing Pooja material or any kind of other material in River Yamuna except only the designated sites. Violators to pay 5,000 INR on ‘Polluter Pays Principle’ (Para D, Page 88)

8. Existing wetlands and water bodies should be deepened and enlarged and provide more water bodies. (Para A, Page 90)
9. Floodplains shall be restored, preserved and beautified in accordance with the reports of the experts committee. (Para xi, Page 91)
10. Restricted activities of Floriculture/Silviculture can be carried-out subjected to permission. (Para xii, Page 91)

The Committee noted details from DDA's Report giving status and area where action is required: Total area of 5128 ha area of zone O (Reference page 15 of DDA's Action Taken Report)-Area 1.Old Railway Bridge to ITO Barrage (Western Bank)-Asita, Area 2.Geeta Colony Bridge to ITO Barrage (Western Bank) Eco-Tourism, Area 3.Old Railway Bridge to ITO Barrage (Eastern Bank) - Asita East, Area 4. NH24 to DND Flyway (Western Bank)- Project area: 263 Ha., Area 5. DND to proposed Kalindi By-pass (Western Bank) - Khijrabad Area 6. NH-24 to DND Flyway (Eastern Bank) Part Area- I, Area 7. NH-24 to DND Flyway Eastern Bank) Part Area- II-Hindon Cut Wetlands I&II, Area 8. Wazirabad Barrage to ISBT Bridge (Eastern Bank) around Garhi Mandu Village & Usmanpur Village, Area9.Wazirabad to Old Railway Bridge (Western Bank) Area 10. ITO to NH-24 (Eastern Bank)-Commonwealth Games Village Area.”

2. The current report of the YMC, in continuation of the earlier report, refers to field survey of the river zone by an Expert Committee appointed under earlier orders of NGT comprising Prof. AK Gosain (IIT Delhi), Prof. CR Babu (Emeritus Professor Delhi University), Prof. Brij Gopal (IIT Roorkee), assisted by officers from the DDA, Government of NCT of Delhi, DJB and UP Irrigation Department. The recommendations of the said Expert Committee are as follows:

“Specific Recommendations of the Babu/ Gosain/ Brij Gopal Expert Committee.

1. To set up a separate, independent body (like authority) to plan and execute the entire restoration programme for the River Zone in the NCR that involves three state governments.
2. To provide statutory protection to flood plain under either the Indian Forest Act (Protected forest) or the Environment Protection Act (Eco-sensitive Zone). Ministry of Environment & Forests, Govt. of India and Govt. of NCT of Delhi was expected to take action.
3. The Zone 0 (river zone) must become a place of attraction and active indulgence by the city dwellers without compromising the river's ecological and social functions.”

3. The earlier supplementary report dated 13.08.2019 of the YMC on the subject is:

- To consider establishing a dedicated set up like a Society to manage the area including existing encroachments and pollution caused by the allottees.
- Examine whether industrial houses could be permitted to display their logos etc. and take over maintenance of parcels of land by taking the advice of Archaeological Survey of India so that user fees can be levied and ingress of unaccounted people regulated. It was underscored that MC was not suggesting any sort of leasing but there was a need for a River Front Society or Special Purpose Vehicle to see that the existing area has one agency responsible for upkeep -- not restoration -which is a different approach. INTACH and DDA are not equipped to do enforcement work. They have no regulatory authority which can be used. DDA has repeatedly complained about getting no cooperation from the MCD and the Police but it does not seem to have been followed up at a sufficiently high level. DDA did not respond to any of the suggestions and also did not refer to the minutes of YMC recorded in the communication YPMC/2019/223 dated 13.6.19. This was reported to NGT when the MC sent its comments on the reports of all agencies in August 2019.
- To have proper coordination with MCD and Police to restrict ingress and hawking rights.

It was recommended that a River Front Authority or a Consortium of NGOs active in River pollution and rejuvenation activities along with the CSR arm of reputed Industrial Houses interested in preserving local history and culture and senior representatives of enforcement agencies was needed to give an overall direction to the management of the entire area which broadly falls under DDA's ownership. YMC had tried to persuade every officer in DDA attending its meetings that the area has the potential to become a vibrant and attractive river front but was fast deteriorating because there is an absence of an integrated vision to develop what is already there and to prevent a proliferation of haphazard activities which make the area unsightly and inaccessible.

YMC is conscious of the fact that floodplain of the river separate the river stream from the river front. River front begins where the floodplain ends. Though the DDA has been directed to demarcate 1 in 25 year floodplain, in most places like the Yamuna Bazaar, 32 Ghats and Kudesiabagh, the

boundary between the floodplain and river front is not distinct. Also, where as in the floodplains the thrust has to be on conservation and protection of wetlands and biodiversity, on the river front, which receives high footfalls and supports many social and cultural activities, the management thrust has to be on regulating developmental activities that help bring people closer to the river but the activities need to be regulated within the overall carrying capacity of the area. The River front Authority should therefore have the mandate both for conservation centric activities on the floodplains portion and people centric activities on the river front portion of the '0' zone.

DDA has repeatedly restricted its comments only to giving the progress on agreed projects under way which have to be completed by January 2021 or prior to that. The YMC's recommendations on the progress of those 10 projects has been reviewed by the YMC on 14.1.20 but for the sake of brevity that status is not being repeated here as those are they are unrelated to the concept of a River Front Management Authority.”

4. The current report further mentions that in 2007, a Yamuna River Development Authority (YRDA) was set up under the orders of the Government of India. It was called the High Powered Committee for the Yamuna River Development Authority (YRDA) and was created vide Cabinet Secretariat's OM No. 731/2/1/2007-Cab-III dated 24 August 2007 with the following terms of reference:

- a. Commission studies on different aspects of the development of the river, viz., hydrology, ecology, environmental pollution, sustainable use of the river front, etc. to feed into the policy framework.
- b. Develop a policy framework and prepare an integrated plan addressing issues of both quantity in terms of river flow and quality in the Yamuna river.
- c. Develop an operational plan for the implementation of the river action program.
- d. Effect inter-sectoral coordination for planning and implementation until such time as a statutory arrangement is in place.
- e. Suggest the design for the statutory framework.”

5. It is further stated that ‘Technical Advisory Group’ approved a draft for cleaning of the river and developing its surroundings recommending that the Yamuna river bed is a

no-construction zone and emphasized on the need for riverfront development, cleaning up of the river and pinned its hopes on DJB's Interceptor Project. The technical committee had suggested that the riverbed should be developed as a biodiversity with three zones, one would be a buffer zone, the other an inner core zone and the third would be the interactive zone where people will be allowed. Current status of functioning of the said YRDA is not known.

6. The YMC has suggested that in view of lapse of time and new challenges, a new mechanism may need to be developed under the aegis of DDA to be assisted in appropriate manner to deal with all the relevant issues relating to the river front.

7. With a view to consider the suggestion of the YMC for setting up of the River Front Management Authority under the aegis of DDA, who may take assistance from such experts or authority as may be considered necessary, we require a response from DDA which may be furnished by e-mail at judicial-ngt@gov.in before the next date. The report of the YMC may be sent to DDA by e-mail.

Second Report on "Approach to In-situ Bio-remediation/Phyto-remediation of sewage in drains of Delhi".

8. The second report relates to "Approach to In-situ Bio-remediation/Phyto-remediation of sewage in drains of Delhi". On this aspect, the Tribunal noted in the earlier order dated 11.09.2019 that:

- “1. As per DJB, Delhi generates 720 MGD of sewage (though it could be an underestimation as a large number of illegal bore wells have not been accounted for in this estimate) but the actual treatment is only 500 MGD(69%).
2. Capacity Utilisation of STPS: As many as 13 STPs have capacity utilisation of less than 70%, some even having capacity utilisation of 10 %(Ghittorni).”
3. Status of other storm water drains carrying sewage:

It has been reported by the Monitoring Committee that a total of 79 water drains in Sewered areas were found to be carrying sewage. In respect to this DJB has stated 39 have been plugged and 40 would be plugged as per the action plan submitted by them.

4. Status of Punctured Sewers:

It has been reported by the Monitoring Committee that at 344 locations sewer were punctured and drains

connected to the sewer network. It has been reported that out of 344 locations 252 punctured sewers have been repaired.

5. *Ameliorative measures for cleaning drains & Constructed Wetlands and in-situ Bioremediation Technology: Controlled Dredging in River Yamuna is required.*

It has been commented that the mushroom growth of unauthorized colonies has been the bane of urban planning and has resulted in giving rise to a grave situation. Environmental pollution and destruction of the river Yamuna is the direct consequence of haphazard growth in unauthorized colonies. This phenomenon is not confined to Delhi but is also happening in UP and Haryana.

The experience of the last 20 years shows how the unchecked expansion of unauthorised colonies has led to haphazard proliferation of vast habitations of populations bereft of roads, drainage or sewerage. Apart from sewage all such households also eke out living through home-based activities many of which have been found to be hazardous and which exacerbate pollution in the drains and river. No amount of STPs and professional management inputs, repair of drains and interception of sewage will result in making the Yamuna cleaner unless the most major among the causes of pollution are confronted. In a city of 20 million if over 7 million inhabitants of unauthorised colonies live without sewerage it will affect the environment of all citizens.

It states that while the implementation of the Septage Management Regulations has to continue it will not address the basic problem. Forward planning is necessary keeping the future population growth in mind. Laying sewer lines and drains needs to be forecast and attended to well in advance to avoid the present situation in which most unauthorised colonies have no outlet for sewage.”

9. *The report now received inter-alia mentions:*

“The gap between the sewage estimated to be generated, what is captured and what is treated is huge and any alternative which can reduce the pollution need to factor in where the impact of such alternatives would be substantial. Such alternatives need to take note of the complexity of the situation and recommendations made in a slew of expert reports on the drains in Delhi.

Delhi has over 1797 unauthorized colonies, over 135 urban villages and over 675 slum clusters where some

10 million people dwell without any town planning regulations in force. That includes absence of sewerage, drains and conveyance systems. To have an impact on the quality of river water alternatives should address the needs of such bulk sewage discharge.”

10. Earlier three reports mentioned in the current report of the YMC have been summed up as follows:

“1. Status of drains out falling into the River Yamuna in Delhi prepared under the aegis of Drainage Master Plan for NCT of Delhi published in July 2018 prepared by IIT Delhi (Department of Civil Engineering) for the department of Irrigation & Flood Control, GNCTD. This is an exhaustive report which provides a detailed picture of the storm water drainage infrastructure.

2. CPCB Report on River Yamuna-Waste Water Management Plan In Delhi 2012, (This report was got updated by the Yamuna Monitoring Committee by requesting CPCB and is available on the MC's website). The report gives a very detailed idea of the drains in Delhi and their pollution load and advocates that the quality of treated sewage discharged in the drains can be improved by in situ aeration till such time all the drains are trapped and no untreated or treated sewage is discharged in the drains to avoid anaerobic conditions. CPCB's recommendation was that the river segment devoid of dissolved oxygen can be considered for floating aeration systems to maintain the level of dissolved oxygen and prevent anaerobic conditions. Earlier in 2003 CPCB issued Guidelines on the Construction, Operation and Application of Rootzone Treatment Systems for the Treatment of Municipal and Industrial Wastewater.

3. Report of the High Court Constituted Committee set up to look into the drainage problems in Delhi by High Court of Delhi vide Court of its own motion in CM No. 30022/2018 in WPC No 7594/2018 dated 30.07.2018. The High Court ordered that a committee under the chairmanship of the former Chief Secretary Delhi, Shri P K Tripathi with engineers from different organizations may prepare a plan for Delhi's drainage system— necessitated by sudden

and extensive flooding on Delhi roads. The Committee submitted its report on 22.1.19 and gave an overview of why the problem of flooding in Delhi's drains occurs and what can be done to prevent its recurrence. Importantly it recommended that the IIT report (referred at 1 above) should become the fundamental document on which storm water flow and sewage containment operations should be based. The IIT Report and the High Court Constituted Committee's report both lament the absence of accountability for the drains in Delhi.

All three reports are relevant because any move to start phytoremediation/bio-remediation, root zone treatment or aeration has to be based on an understanding of the topography of Delhi's drainage system operated by several agencies and presently having no interagency coordination. The drains by ownership and length are listed below.

Department-wise Drainage Length in NCT of Delhi

“

Sl.	Agency Name	Length (Km)
1	Irrigation and Flood Control (I&FC) Deptt.	426.55
2	Public Works Department (PWD)	2064.08
3	South Delhi Municipal Corporation (SDMC)	258.78
4	North Delhi Municipal Corporation (NDMC)	122.46
5	East Delhi Municipal Corporation (EDMC)	140.63
6	New Delhi Municipal Council	335.29
7	Delhi Development Authority (DDA)	251.30
8	DSIIDC	98.12
9	Delhi Cantonment Board	39.68
10	National Thermal Power Corporation Limited	3.11
11	Old Agra Canal	0.311

”

11. After giving the above background, the YMC proceeds to deal with the challenge posed by absence of a single agency to deal with sewage treatment and disposal as follows:

Delhi Jal Board

The DJB's interpretation has been continuously highlighted by the YMC and was reported to the NGT in its second interim report, page 38 dated 27.5.2019. It was brought to the notice of the NGT that "In Delhi biggest obstacle preventing enforcement against water pollution has been a loose interpretation of the meaning of "jurisdiction of the drain owning agency". The Delhi Jal Board was founded in 1998 and was the successor

to the erstwhile Delhi Water Supply & Sewage Disposal Undertaking (DWS&SDU) which functioned under the unified Municipal Corporation of Delhi (MCD). The Conservancy and Sanitation Department of MCD was wholly in charge of all drains regardless of their location while the MCD's DWS&SDU was in parallel responsible for water supply and sewage. After formation of the Delhi Jal Board the functions devolved on DJB. Through a subsequent administrative change effected sometime in 2012 it was decided by the Delhi Government that the drains contiguous to roads would be under the "jurisdiction" of different road owning agencies. This does not alter the statutory responsibility of DJB for overall management of sewage. If they have no role then they would not have brought out the Septage Management Regulations 2018 and begun implementing them by registering the tractor-trolleys that privately collect septage from pit latrines in unauthorized colonies. The organization also would not have formulated and tendered a scheme to collect sewage from pit latrines at Government cost from the unauthorized colony households having pit latrines.

Department of Irrigation & Flood Control

Ironically this department was responsible for awarding the study on the Drainage Plan which was entrusted to IIT Delhi. Although the report was reportedly directed to be acted upon by the Chief Minister Delhi the l& FC Department has not taken it forward. In meetings the Secretary l&FC who is also the CEO DJB has stated that the Department neither has the mandate or the wherewithal to implement-drainage related matters outside the major drains out falling into the river. It begs the question why such a study which took 6 years to be published was awarded by Irrigation & Flood Control Department if it had no role. The presumption is that since the DJB and the Department of Flood Control are under a common officer it was convenient to commission the study from l&F Department.

Delhi Municipal Corporations

Under the Municipal Corporation Act 1957, the Chapter on Water Supply, Drainage and Sewage Disposal has been repealed after DJB was created through an Act. Therefore, they are repeatedly taking the stand that they have no role to play in sewage related matters. In meetings the DMC Commissioners have stated that sewage is not the responsibility of the Corporations. The YMC has highlighted this reluctance to accept responsibility for sewage in storm water drains in five meetings with the former and present Chief Secretaries of Delhi. The last such meeting with CS Delhi when all Heads of organizations had been called was held recently on 8.1.20. The decision on the need for a single point

responsibility for sewage and solid waste in drains and taking deterrent action to prevent sullyng the storm water drains has not been taken. The only decision taken is that the subject would be revisited.

The DMC act of 1957 gives sufficient authority for taking punitive action but the stand taken is that sewage is not a DMC responsibility. The DMC Act states as follows:

42. Obligatory functions of the Corporation

Subject to the provisions of this Act and any other law for the time being in force, it shall be incumbent on the Corporation to make adequate provision by any means or measures which it may lawfully use or take, for each of the following matters, namely:-

(a) the construction, maintenance and **cleansing of drains and drainage works** and of public latrines, urinals and similar conveniences; ***

(c) the scavenging, removal and disposal of filth, rubbish and other obnoxious or polluted matters;***

(e) the reclamation of unhealthy localities, the removal of noxious vegetation and generally the abatement of all nuisances;

355. Collection and removal of filth and polluted matter through municipal agency (1) It shall be lawful for the Commissioner to take or cause to be taken measures for the daily collection, **removal and disposal of all filth and polluted and obnoxious matters from latrines, urinals and cesspools not connected by a drain with a municipal drain from all premises situate in any portion of Delhi.** (2) In such portion of Delhi and in any premises wherever situate in which there is a latrine, or urinal connected with a municipal drain, it shall not be lawful, except with the written permission of the Commissioner, for any person who is not employed by or on behalf of the Commissioner, to discharge any of the duties of scavengers.”

12. Dealing with the above question, the YMC has further observed:

“The Delhi Jal Board was founded in 1998 and was the successor to the erstwhile Delhi Water Supply & Sewage Disposal Undertaking (DWS&SDU) which functioned under the unified Municipal Corporation of Delhi (MCD).The Conservancy and Sanitation Department of MCD was wholly in charge of all drains regardless of their location while the MCD's DWS&SDU was in parallel responsible for water supply and sewage. After formation of the Delhi Jal Board and a subsequent administrative change effected some

years later it was decided that the drains contiguous to roads would be under the "jurisdiction" of different agencies. Although enforcement pertaining to the drains continued to be the statutory responsibility of the Urban Local Bodies the focus became diffused and enforcement was ignored. With overlapping responsibility, cleaning the storm water drains became confined to annual desilting only.

With overlapping responsibility, unwillingness to confront sewage in storm water drains or to recognize that it spreads unsanitary conditions and poses public health hazards, in effect the three DMCs ignore the problem and DJB says it has little role to play. The ownership, responsibility for sewage in the storm water drains has to be owned if projects for containment of sewage in the drains done through external agencies are to succeed."

13. **With a view to consider the suggestion of the YMC for entrusting the functions of management of all the drains in Delhi to a single agency, we require a response from Chief Secretary, Delhi; DDA; DSIIDC; PWD; Irrigation and Flood Control Department; Cantonment Board; NDMC; South, East and North Delhi Municipal Corporations which may be furnished by e-mail at judicial-ngt@gov.in before the next date.** The report of the YMC may be sent to Chief Secretary, Delhi; DDA; DSIIDC; PWD; Irrigation and Flood Control Department; Cantonment Board; NDMC; South, East and North Delhi Municipal Corporations by e-mail.

14. The other issue to be dealt with is the issue of bio/phytoremediation in the light of earlier directions. On this aspect, the Tribunal vide order dated 11.09.2019 observed:

"11.It may be noted that there are 351 polluted river stretches in the country identified as such by CPCB' which include all major rivers and their tributaries⁹. This Tribunal is also dealing with the pollution of River Ganga and several directions have been issued including that no untreated sewage or effluents are discharged in the river and floodplains are protected.¹⁰ Yamuna flows through the National Capital and its rejuvenation can be a model to be followed for all other polluted river stretches. Restoration of the river is a matter of grave environmental urgency that also concerns the prestige of the country."

13.The first step is to ensure that no pollutant is discharged into the river or drains connected thereto.

⁹ The said matter is being separately dealt with by this Tribunal in O.A. No. 673/2018. All the States/UTs have been required to prepare and execute action plan for remedying the said pollution. Chief Secretaries of all the States/UTs have been required to remain present in person with progress reports in the matter, along with other vital issues. All the 35 Chief Secretaries have already appeared once and are scheduled to appear again.

¹⁰ O.A. No. 200/2014 order dated 22.08.2019.

Projects of setting up and upgradation of STPs including setting up of interceptors, laying of sewerage line network etc. have to be completed within strict timelines. Pending such action, immediate bioremediation and/or phytoremediation or any other alternative remediation measure may be undertaken as an interim measure. Pollution of river or water bodies is a criminal offence which needs to be checked by setting up ETPs/CETPs/STPs. The Hon'ble Supreme Court has directed¹¹ that establishment and proper functioning of ETPs/CETPs/STPs in the country be ensured. This is to enforce the right of access to water. It has been noted by the Hon'ble Supreme Court that water pollution is the cause of various diseases and also affects food safety apart from affecting the environment as such. Following the said judgment, this Tribunal has directed¹² that "All the local bodies have to ensure 100% treatment of the generated sewage and in default to pay compensation which is to be recovered by the States/UTs, with effect from 01.04.2020. In default of such collection, the States/UTs are liable to pay such compensation. The CPCB is to collect the same and utilize for restoration of the environment."

While dealing with the pollution of river Ganga, this Tribunal directed:

"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.

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

¹¹ (2017) 5 SCC 326

¹²Order dated 28.08.2019 in Paryavaran Suraksha Samiti&Anr. Vs. Union of India &Ors., O.A No. 593/2017

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.”¹³

15. In the above background, the Committee has mentioned as follows:

“Rationale for Initiatives to Start Bio/ Phyto remediation.

Sewage Treatment Scenario in Delhi:

Delhi Jal Board is supplying around 900 MGD of drinking water which converts into sewage at the rate of 80% i.e. 720 MGD. Out of total sewage generated, around 500 MGD is being treated at all the Sewage Treatment plants, in Delhi. The remaining 220 MGD untreated sewage is being discharged into the River or nearby directly or through different drains. The maximum discharge is from un-sewered or partly sewerred areas/colonies.

There are around 1797 U/A colonies in Delhi which comprises around 40% of Delhi’s population. Sewer lines have been laid in 436 colonies out of these and work is in progress in 432 colonies. In the remaining 931 colonies, work of laying sewer conveyance systems has still to be completed. The concept of Interceptor sewer system was aimed at trapping around 70% of untreated wastewater flowing into the 3 major drains i.e. Najafgarh, Supplementary and Shandara. After commissioning of the Interceptor Sewer project, about 204 drains in the catchment of Najafgarh, Shandara and Supplementary drains will still be left untapped and will continue to pollute the Yamuna.

Keeping the background of heavy sewage in the storm water drains and the possibility of delays in commissioning different STPs or upgrading them the NGT directed all authorities including the YMC to give suggestions on using alternate technologies for sewage trapping and treatment.

Parameters for Phyto-remediation/bio-remediation / root zone treatment:

..... The DJB simply wrote a letter to the drain owning agencies, namely, DDA, IFCD, PWD, DSIIDC and DMCs asking them to take responsibility for phyto-remediation /bio-remediation of their drains. Most of these agencies do not have any concept of

¹³O.A No. 200/2014 order dated 22.08.2019

phyto-remediation / bio-remediation and are completely unaware of the points of discharge of sewage in drains under their control. The order of the NGT can only be implemented by agencies that have conversance with the factum of sewage discharged in their drains and would have a stake in treatment by alternative methods to reduce or eliminate the filth.”

16. After the order dated 03.01.2020, the YMC took up the matter with all the agencies with domain knowledge on the subject, including CPCB, NEERI, Prof CR Babu of CEMDE, Prof Jauhar Mohammad of Jamia Milia Islamia University, INTACH, IFCD and DJB and sought response on:

- *Different technologies developed under the broad definition of Bio-remediation, Phyto-remediation, Root zone treatment and constructed wetland systems.*
- *Identification criteria and parameters for assessing suitability of a technology (in relation to the catchment area, the flow, the pollution load, the need and availability of land whether in-situ or ex-situ remediation is proposed, how the cost effectiveness in reducing pollution load can be measured.*
- *Research Institutes/ Organizations which have applied the technologies in the field, beyond the stage of pilot /laboratory trials*
- *Lists of Agencies which have executed such or similar projects elsewhere in the country.*
- *Whether the identified projects are functional at present or not*
- *Whether an independent appraisal of the technology developed has been done.*

All the agencies were asked to furnish this information as available. CPCB was asked to frame guidelines and prepare inclusion/exclusion criteria for eliciting a response from interested agencies. CPCB was asked to critically examine the work done at Neela Hauz by CEMDE, Prayagraj undertaken by NEERI as well as work done by Jamia and other organizations and document the results achieved, pollution reduction attained, the flow regime in the drains and the capital and operational costs per MLD of waste water which were incurred. The objective was to use this data to identify promising technologies keeping in mind different catchment and drain profiles. A list of agencies with domain knowledge

and experience were also asked to be prepared by CPCB in consultation with NMCG, IFCD and DJB.

The detailed report containing guidelines, criteria for inclusion/exclusion, cost effectiveness of different technologies and models that have succeeded on the ground in given situations are discussed in the report of CPCB below. The report of CPCB is being included as was sent to YMC with only marginal changes as it emanates from a statutory organization. CPCB did however associate all the people that attended the MC's meeting and heard them fully.”

17. The report of CPCB annexed mentions the techniques with case studies and limitations. Based on the above, the YMC has observed that survey of drains was required to ascertain the places where phyto/bio remediation is viable for which a survey team may complete the exercise within one month. In the second phase, the work may have to be assigned. The observations of the YMC are:

“ACTION PLAN SUGGESTED BY YMC

Findings Based Upon a few Successful Examples.

1. CEMDE has prepared a Project for in-situ drain remediation in Kali river and NOIDA drain using constructed Wetlands System for waste water treatment. Based on the experience gained in Neela Hauz and the project proposals of Kali river and Noida Drain, the Centre is of the opinion that the CWS can be applied to 1st order and 2nd order drains in Delhi. These drains are the tributary drains of the bigger drains, like the Najafgarh, Shandara and Barapulla drains. But for specific drains treatment, a detailed survey will be required as such treatment design has to be site specific and drain specific.

2. NEERI, based on their experience at Prayagraj, has also undertaken to treat some drains in Delhi/NCR which have profiles similar to the ones in Paryagraj treated by NEERI. However, before undertaking drain treatment, a detailed survey of the drain and its catchment profile will have to be undertaken.

Need for a Survey

In the background of the foregoing discussion, it is evident that for executing projects of phyto-remediation /bioremediation on the ground, will necessarily require survey of drains according to the inclusion-exclusion criteria. Whether all drains will qualify or only some drains will qualify cannot be anticipated at this stage. Leaving it to government

agencies to conduct a survey for identifying the drains will not work for the reasons that has been explained in the preamble that the drain owning agencies have neither competence nor interest nor experience to be able to handle this even if directed to do so. It is very necessary that only those agencies who have some experience of doing this work, whether government or private, are given the opportunity to express their interest and willingness to participate in future opportunities that are opened for phyto-remediation /bio-remediation.

4. The standard models of In-situ remediation technology discussed above will have to be adapted subject to conditions mentioned in the matrix for in-situ treatment systems.

PART I (Departmental Rapid Reconnaissance)

- i. A survey team under the leadership/ Chairmanship of CPCB would have to see that a reconnaissance survey of drains and the catchment of some of the major drains joining river Yamuna is undertaken. Delhi Irrigation and Flood Control Department/Delhi Jal Board /Delhi Development Authority engineers/ horticulture experts would need to apply the CPCB principles to ascertain which drains are amenable to in-situ remediation technologies being applied as drawn up by CPCB. The other experts who could be associated may be from: NEERI, TERI and Centre for Environment Management of Degraded Ecosystem (CEMDE), Delhi University.
- ii. This exercise should be completed within one month of the order constituting such a team. CPCB will have to approach the Chief Secretary Delhi, the Heads of the organizations listed above on a direction from NGT to assign the responsibility to assist and contribute in the initial survey to knowledgeable officers on a continuous basis for one month. The schedules should be notified by CPCB so that the survey gets an early start.
- iii. Based on the survey undertaken and using the data available in the Drainage Management Plan prepared by IIT Delhi (2018) the applicability of such In-situ treatment in major and minor drains of Delhi should be made and put up on CPCB's website with proper reference to context.

PART II (External Reconnaissance)

- i. *In the second phase, the executing agencies/private companies listed at CPCB Annexure-I may be called and asked to visit prospective drains and catchment areas where in situ drain treatment has been found feasible by the team of experts. The concerned Agencies like the IFCD, DDA, PWD and other drain owning agencies should facilitate such visits. The CS Delhi and VC DDA should set up such a facilitation Committee of the drain owning agencies to interact with external agencies who wish to visit the drains and seek information before they decide on their willingness to join this endeavour. The time limit of one month can be made for survey to be undertaken by agencies.*
- ii. *The Chief Secretary Delhi may be asked to assign nodal responsibility on a continuous basis to one officer who would have to brief YMC and give periodic reports on progress.*
- iii. *Whereas the IIT Delhi report will provide factual data, the basis of the inclusion-exclusion criteria developed by CPCB as described above, would form the basis and would need interpretation at every stage. CPCB would be associated as the need to explain the criteria will arise.*

Part III (General)

- i. *The entire exercise of survey first by the expert committee and later by the executing agencies/private companies listed at CPCB Annexure will have to be done with the active technical collaboration of CPCB and coordinated at the administrative level by the GNCTD.*
- ii. *The GNCTD may issue public notice/ Request for Proposal (RFP) to seek offers for undertaking Phytoremediation/Bioremediation by interested agencies before the different drain owning agencies actually assign the work in the interest of transparency and including as wide a group of participants as possible.*
- iii. *Since the projects in their very nature cannot be put into a structural outline and will necessarily be location and MLD based, it would be necessary to declare a criteria that does not go by cost of the project but is relate to the amount of sewage treated and the improvement registered.”*

18. Since the above report does not mention the generic and representative models which could be customised, adapted and adopted to the natural scenario including the drains in question, let CPCB furnish such a report containing atleast ten generic and representative models which are techno-economically feasible and can be implemented after customization to the YMC by 07.02.2020 and the YMC may include the report with its comments in its report to be submitted to this Tribunal before the next date by e-mail at judicial-ngt@gov.in.

19. As regards direct untreated discharge of sewage into river Yamuna at Faridabad, we direct that remedial action be taken by the State of Haryana. The same may be overseen by the Committee headed by Justice Pritam Pal dealing with the issue of abatement of pollution of river Ghaggar and solid waste management in the State of Haryana. A report be furnished by the Chief Secretary, Haryana before the next date.

20. To sum up, our directions in the present order are:

- a) DDA may furnish its response in terms of Para 14 above by e-mail at judicial-ngt@gov.in before the next date. The report of the YMC may be sent to DDA by e-mail.
- b) Chief Secretary, Delhi; DDA; DSIIDC; PWD, Irrigation and Flood Control Department, Cantonment Board; NDMC; South, East and North Delhi Municipal Corporations may furnish their response in terms of Para 20 above by e-mail at judicial-ngt@gov.in before the next date. Departments/Agencies under Delhi Government may give their respective reports to the Chief Secretary so that Chief Secretary gives a report on behalf of all the Departments/Agencies of Delhi, while other authorities may give their reports separately. The report of the YMC may be sent to Chief Secretary, Delhi; DDA; DSIIDC; PWD; Irrigation and Flood Control Department; Cantonment Board; NDMC; South, East and North Delhi Municipal Corporations by e-mail.
- c) CPCB furnish a report in terms of Para 25 above to the YMC by 07.02.2020 and the YMC may include the report with its comments in its report to be submitted to this Tribunal before the next date by e-mail at judicial-ngt@gov.in.
- d) The Chief Secretary, Haryana may furnish report in terms of Para 26 above before the next date by e-mail at judicial-ngt@gov.in.

A copy of this order be sent to the Chief Secretaries, Haryana and Delhi; YMC; DDA; DJB; South, East, North Delhi Municipal Corporations; NDMC; Delhi Cantonment Board; DSIIDC; PWD; NTPC; Irrigation and Flood Control Deptt. and CPCB by e-mail.

A copy of this order be also sent to NMCG and Secretary, Ministry of Jal Shakti for their comments, if any, before the next date by e-mail.

List for further consideration on 18.02.2020.”

Analysis and consideration of the issues for the present order.

7. Consideration of:

- I. Third report of the YMC dated 05.02.2020 with reference to progress in the light of order dated 11.09.2019;**
- II. The issue of entrusting the functions of management of all drain in Delhi to a single agency – consideration of the issue in the light of response of GNCTD;**
- III. Report of the YMC dated 17.02.2020 on the subject of ‘Alternate Technologies for Management of Waste Water in Drains’**
- IV. The issue of setting up of river front authority consideration of the issue in the light of response of the DDA.**

- I. Third report of the YMC dated 05.02.2020 with reference to progress in the light of order dated 11.09.2019**

8. We may at the outset note the Hon’ble Supreme Court vide order dated 24.10.2019 in Civil Appeal No. 9276-9290 of 2015, *Tata Power Delhi Distribution Ltd. NDPL House v. Manoj Misra & Ors.* directed as follows:-

“7.....The latest order passed by the Tribunal is dated 11.09.2019. Without commenting upon the correctness or otherwise of the direction issued by the Tribunal on 08.05.2015, we are of the opinion that the direction issued by the Tribunal on 11.09.2019 shall be implemented and sewerage charges shall be introduced by the Government of NCT of Delhi as directed by the Tribunal.

8. In view of the direction issued by the Tribunal on 11.09.2019 for the introduction of levy of sewerage charges, the direction issued by the Tribunal on 08.05.2015 stands modified and need not be implemented. The direction issued on 11.09.2019 shall be implemented within a period of two months from today.”

9. We also note the order of the Delhi High Court dated 24.10.2019 in *L.P.A. No. 681/2019, Delhi Development Authority v. Yamuna Khadar Slum Union & Ors.*, in substance, directing implementation of order dated 11.09.2019 on the subject of removal of encroachments from the floodplains of the river.

10. **We now proceed to consider the third report of the YMC dated 05.02.2020.** The report covers the progress reports filed by the Delhi, Haryana and UP Governments and other authorities in Delhi, Haryana and UP. Main concern highlighted in the third report remains solid waste and sewage management. As per the said report, in East Delhi sewer connectivity is as low as 30% and in West Delhi as low as 12%. This aspect will be considered in further detail under relevant headings in subsequent part of this order. We may take up the matter for consideration as per identified action points enumerated by the Committee (noted in order dated 11.09.2019 paragraph 5 above).

A. In respect of Delhi

(i) Environmental Flow

11. The YMC has referred to point-wise pilot project for creating a shallow reservoir/pond over 17.6 acres of the floodplain at Palla after obtaining approval of concerned authorities. The key observations of CGWB and the Committee headed by Member, CWC are that this pilot project needs to be executed for one more year to be able to assess its impact on the ground water. Further, the Committee observed that cost of the project is high as compared to the quantity of water harvested. Therefore, the State

will have to take a decision on its continuation based on overall economic and environmental benefits.

12. Further reference has been made to the report by National Institute of Hydrology (NIH) as follows:-

“The key findings, though provisional in nature, are that minimum environmental flow levels required at Palla will be of the order of 38 cumecs. This has been co-related to a depth of 90 to 120 cm. required for the indicator fish species Riimas bola and Banganadero and is unrelated to the quantity of water released at present. This flow level is, however, subject to alteration once the cross sectional study for the different river stretches, which is still continuing, is completed. The study will also cover the various measures that are required to be taken within the river basin for enhancing the flow in the river and the probable quantitative impact thereof.”

(ii) DDA and Demarcation of the Flood Plains and Conservation Activities.

13. YMC has noted the hurdle created by absence of a single coordination authority for management of the river as a whole as against different Departments being involved at present. The YMC has noted that the following issues are to be dealt with by the DDA:-

- The protection of the flood plain;
- The creation of wetlands at identified locations;
- Demolition plans and action taken to retrieve flood plain land and free it of encroachments,
- Enforcement against vehicles dumping debris in and around the flood plain
- Progress on financial devolution by the State of Uttar Pradesh on DDA to undertake
- Floodplain rejuvenation on the Eastern bank of the river,
- Progress of 10 identified projects which DDA had undertaken to complete by specific dates.
- Tree plantation drives,
- Closure of bore wells and plans for larger use of treated waste water dealt with in Chapter – 10, Use of Treated Waste Water.

The conclusion of YMC is:

“Conclusion:

Monitoring and coordination among the DDA officials has improved. After initial delay the tempo of activities and sense of ownership, has now picked up. The real test would lie in whether DDA can sustain the momentum built up and ensure that the land is kept free of encroachment. Also see that the developments are executed in ways that benefit the River ecology and the citizens too benefit from better access to more environmentally friendly spaces for birding, walks, cycling and cultural activities.

(In the Chapter on Drains certain recommendations to at least have a security system and watch and ward to be set up have been made which are applicable here too.)

The YMC proposes to start a process of inspections of the physical progress on the ground after an interval of 3 months.”

14. Apart from DDA, Irrigation Department of UP also has a role to play. YMC has suggested that the UP Government may promptly give its approval so that as per arrangement reached, DDA can go ahead with the development of the flood plain in the State of UP. YMC has given progress of the action taken by the DDA in pursuance of order dated 11.09.2019.

(iii) Quality of River Water

15. The water quality data has been looked into by the YMC and only marginal reduction load has been noted compare to 2017, as sewage and industrial waste water continue to be discharged in Delhi, Haryana as well as UP. Conclusion of the YMC is as follows:-

“Improvement in the Yamuna’s water quality at Delhi will require stoppage of sewage and industrial waste water discharged from both Haryana (about 500 MLD from several townships) and UP (65 MLD at Ghaziabad). Besides the flow of sewage through Najafgarh and Shahdara drains which contribute about 2400 MLD of waste water out of 3026 MLD and all other drains in Delhi has to be trapped. The action proposed to be taken up by Delhi are discussed in the Chapters 1, 4, 5, 6,7 and 8. The Action proposed to be taken by Haryana and UP are discussed in Chapters 12 and 13 along with timelines.”

(iv) Sewage Treatment Plants

16. YMC has considered the issue under the headings new STPs and increased capacity utilization, short term measures for increasing capacity utilization, six month milestone of projects under implementation, decentralized STPs, removal of deficiencies in the functioning of STPs, commencement of work on all STPs by 31.12.2019 and completion of all the STPs by 31.12.2020 and phyto-remediation/Bioremediation of waste water in drains. YMC has observed that there is a gap of 158 MGD in sewage generated and treated and action plan of DJB stipulates time upto December, 2022. There is short term plan for tapping of drains, decentralised STPs, renewal of deficiencies. **It is stated that neither the progress is adequate nor DJB is able to squeeze the timelines for supplementary phyto-remediation/bio-remediation. The difficulty is multiple agencies having control over the drains which issue needs to be resolved.** Conclusion of the YMC is as follows:-

“An increase in capacity utilization would need much more capacity building within the organisation. The DJB has not shared any details of the technological and efficiency parameters by which it will achieve this. The DJB was asked to create measurable benchmarks to evaluate progress but this has not been done.

A technical audit of the STPs is required and the Report has indicated how this will be got done.”

(iv) Interceptor Sewer Project (ISP)

17. The progress enumerated by the YMC on this aspect is as follows:-

“The Interceptor project will intercept 108 drains and convey the Sewage to STPs for treatment. EIL had earlier submitted a report that in addition to 108 drains there are additional 204 drains that have emerged over the last 8-10 years during the period when the project was under construction. In so far as interception of 204 drains is concerned, it has been stated by DJB, that 34 drains have already been trapped and 96 drains

will be trapped by March 2020. For another 45 drains once the Sewerage network in the colonies in the catchment of Najafgarh and Shahdara drains is completed by March 2020, the sewage in these drains will also be trapped and treated at the STPs under the ISP. The remaining 29 drains are proposed to be trapped by December 2020 and 2021 and three drains beyond 2021. The timelines are indicated at Annexure C-5/2 of the DJB's Action taken report. The information furnished by the DJB will be subjected to an independent verification by the YMC.

In unauthorised colonies where sewerage system has been laid, but sewer connection has not been taken by the consumers, Delhi Govt. has taken a decision to connect these sewer connections free of cost by the DJB for those consumers who apply for household sewer connectivity by March 2020.”

(v) Repair and maintenance of drains

18. With regard to sewage from NDMC areas, the YMC has concluded as follows:-

“Since the Sunehribagh drain located at the confluence point with Barapulla drain still carries large volume of sewage, the source will have to be independently verified after DJB and NDMC complete action. There is in addition a Railway colony within NDMC area and responsibility for controlling flow of sewage from there also rests with the NDMC. NGT may consider issuing directions to NDMC and Railways to jointly stop flow of sewage from all areas under its jurisdiction as otherwise jurisdiction issues will delay action.”

19. With regard to tapping of drains, the observations of the YMC against individual drains involved are as follows:-

S. No.	Name of the Drains	Observations
i.	Barapulla drain	Land is not available. YMC requests a direction from NGT to the DDA for taking a decision on land allotment within two months as efforts made by YMC have not resulted in a final decision.
ii	Quadsia&Morigate drains	Land is not available. NGT may consider directing the DDA to finalize allotment and give possession to DJB if in principle approval has been given within next two months.
iii	Maharani Bagh	As per DJB the work will be

	drain	completed by 31.12.2021. DJB has already trapped 10MLD sewage after the rehabilitation of the sewer at CV Raman Marg was completed.
iv.	Najafgarh and Shahdara drains	Discharge is coming from the UP and Haryana also. The said States have given their action plans, DJB has also given ATR for tapping of drains by interceptor sewer.
v.	Remaining drains	To summarize, 9 drains are completely trapped, 2 drains are partially trapped and the Action Plan for trapping of remaining drains has been submitted.
vi.	Tonga Stand drain	DUSIB will be asked to set up small sewage treatment plant (or through constructed wetlands) so that sewage generated from these Juggis can be treated onsite. NGT is requested to consider giving a direction on this to GNCT.
vii.	Sweepers Colony Drain	DUSIB will be asked to set up small sewage treatment plant (or through constructed wetlands) so that sewage generated from these Juggis can be treated onsite. NGT is requested to consider giving a direction on this to GNCT. On other side of this drain, Majnuka Tilla Gurudwara is also discharging its waste into River or this drain. North DMC and DJB have to see that sewage from the Gurudwara is not allowed to flow into the drain. This is the area which lies on the River front. That is why a single body is needed as enforcement functions require being vigilant and presently DDA, DJB, North MCD are not on the same page as far as pollution control on the river front are concerned. Even before a River Front Authority comes up a direction may be considered to be given to the three agencies that pollution

		control has to be a joint responsibility and a system to prevent, deter and prosecute polluters has to be overseen. Names of the nodal officers appointed by the three agencies should be given to YMC and the same officials should attend the monitoring meetings held by YMC. Security guards may be positioned round-the clock to keep vigil and CCTV cameras installed.
viii.	Dr. Sen Nursing Home Drain	A direction from NGT may be considered that if the discharge in this area is not stopped the senior most engineer of DJB in charge of the area will be held responsible. The defaulting institutions may be dealt with under the provisions of law and reported to YMC for which the senior most engineer in charge of the area in MCD would be responsible. YMC will ask South DMC to pump the sewage on the upstream side of proposed weir instead of pumping it into Sen Nursing home drain near the River. The waste water from Power Station is also being discharged into this drain. The quality of waste water needs to be checked by CPCB which YMC will pursue the CPCB but a direction from NGT will help.
ix.	Tekhhand Drain	DJB will be asked to prepare a plan to prevent sewage going into the drain after the point of trapping.
x.	Status of Punctured Sewers joining Storm Water Drains at 79 places	As per DJB's Action taken report, 42 points out of 79 points where sewage was flowing into storm water drains by puncturing sewer line have been plugged , two points pertain to DUSIB and one point to DDA. In the

		<p>remaining points, the work is in progress and will be completed by 31.12.2020 in a phased manner. This will be got independently verified by YMC.</p> <p>Only after the findings of the study are received, will the YMC recommend further follow up action.</p> <p>CPCB has been directed by the Hon'ble Tribunal to prepare representative models of bio/phyto-remediation.</p>	
xi.	Bio/phytoremediation	A separate report has been submitted.	”

(vii) Industrial Pollution and CETPs

20. The YMC has mentioned the report given by DSIIDC about the some action taken in the matter areas with reference to the conforming and concluded that better enforcement has led to an increase of 46% in the effluent reaching the CETPs. Against 44.83 MLD in 2018, the effluent reaching the CETPs has increased to 64.269 MLD. The total capacity of CETPs is 212 MLD. **With reference to non-conforming areas, it is stated that there are 51,837 industries said to be functioning in non-conforming/residential areas. Considering that the water polluting industries from amongst these home based industries are discharging the effluent directly into the drains. As long as they continue, pollution in the river will remain high.** The STPs which treat sewage through biological treatment are unable to treat the effluent which is rich in toxic chemicals generated by polishing, pickling, dyeing, printing and bleaching industries operating at the household level in the residential/non-conforming areas.

21. The YMC has recommended that the DSIIDC may undertake upgradation of all the CETPs. The DSIIDC has now assigned the study to NEERI on 31.7.19. Though the study is expected to be completed in two years, NEERI has been asked to submit CETP wise report on up-gradation for each CETP separately as and when report on a particular CETP is ready. The first report is expected in about three months.

22. Hazardous Waste management: DSIIDC had issued the Letter of Commencement to M/s Tamil Nadu Waste Management Ltd. on 18.12.2019. Terms of Reference (TOR) submitted by M/s Tamil Nadu Waste Management Ltd. to the Ministry of Environment, Forest and Climate Change (MoEF&CC) were placed before Expert Appraisal Committee (EAC) and have since been approved on 06.01.2020. The Environmental Impact Assessment (EIA) has also been conducted and EIA report is under preparation. After receipt of the report and Public Hearing, the final EIA report shall be submitted to Ministry of Environment, Forest and Climate Change for grant of Environmental clearance. This being a statutory requirement, only after grant of EC the project can commence on the ground.

(viii) Sewage and Faecal Sludge Management

23. YMC has observed as follows:-

“On the question of treatment of Sewage/Septage generated in unauthorized/authorized colonies, the following aspects need consideration:-

- i. There are 436 colonies which have been sewered, however, even within these colonies **as many as 2.3 lakhs household had either not taken any sewer***

connection or had illegally got connected to Sewer network. There were colonies like West Jyoti Nagar where only about 12% household had taken sewer connection. **The DJB has now decided to provide free sewer connectivity under the Mukhya Mantri Free Sewer scheme** and also regularize illegal connections by 31.3.2020. As per the Action Taken report so far 70,900 consumers out of 2.34 lakhs households have taken connection. YMC will monitor the progress achieved in all households getting sewer connections. **However, while providing sewer connectivity DJB must ensure that not only black water (Fecal discharge) but all sewage water (including grey water) should be connected to the sewer network -else even after household sewer connectivity some sewage will continue to flow into the drains.**

- ii. **In the remaining 1,361 unauthorized colonies which are proposed to be sewerred over the next few years progress is linked to availability of land and funds and there is presently no blueprint listing the colonies and drains passing through these colonies.** Unless the YMC has access to which drains have been trapped under ISP and which drains are to be trapped in the next phase colony wise and drain wise progress cannot be measured. **Also, residents in 990 out of 1361 colonies which have piped water supply do not pay for sewage at all even if the water consumption exceeds 20 KL per month as these colonies have not been formally notified as sewerred colonies. In other words, lakhs of residents in these unsewerred colonies continue to release their sewage into drains, cause pollution and do not pay anything as sewerred charges.** While GNCT as a part of its welfare policy has chosen to supply free water up-to 20 KL/month per family, **it is questionable whether households should be exempt from paying sewerred charges despite polluting the drains and ultimately the ground water and the river. Whether the state should subsidize polluters and ought not the polluters pay principle apply are moot points which the YMC cannot address but these are highlighted as they affect the basic tenets of civic life and the fundamental duties of the authorities in charge to deter pollution of the environment.**

- iii. **Hon'ble NGT's order at para (e) above clearly directs the GNCTD to introduce within a period of two months a regime of levying sewerage charges as presently no sewerage charges are being levied, meaning thereby that it should be for all the household regardless of whether the area is sewerred or not to have to pay sewage charges. This had been stated unequivocally in the order dated 8.5.2015 of the Tribunal. In the latest order referred to para (e) above the use of the phrase "including where sewer network has been provided" confirms that everyone who has water supply provided by the state should be made to pay sewerage charges.**
- iv. **YMC has not received any response from GNCT Delhi as a response to the NGT directions on levying sewerage charges on every household which has been provided piped water regardless of the quantum of consumption. YMC is not aware if the Board has even considered the directions of the Tribunal and taken a stand on this although it has been highlighted in meetings with the CEO DJB, the Principal Secretary UD and the Chief Secretary when the directions of the Tribunal were read over in full. YMC is of the view that there is failure in complying with the orders of the Tribunal.**
- v. *Even in planned colonies like Greater Kailash, Rohini, Dwarka, Vasant Kunj under the 20 KL/month free water scheme almost 50% of the households who consume less than 20 KL/month neither pay for water nor for sewerage. The details are available in the Supplementary Report of the 2nd Interim Report filed by the YMC before the Tribunal on 2.7.19. of the YMC **Even though the state policy is to give free water even to the well off segments of society if they restrict water usage within the limits prescribed, Whether affluent colonies that use the civic services should be additionally exempt from paying for sewage conveyance and treatment is questionable as it propagates laxity towards the environment. This policy is contrary to directions of the Tribunal at para(e) above.***
- vi. **Implementation of Septage Regulation 2018 brought in after constant prodding by the YMC has also been**

lack lustre. So far only about 3 lakh liters per day is collected through about 140 vendors registered with the DJB against about 6 million liters of septage generated every day. **In the majority of districts there is no collection of sewage from pit latrines which means the old system of unregistered vendors discharging septage into drains continues. Enforcement is weak verging on being non-existent.** The responsibility for enforcement lies with District Magistrates. They however complain of lack of participation by DJB officials in meetings called by the DMs. **Despite YMC asking the Urban Development Department of the data on households using onsite sanitation system of septic tanks and those releasing directly into the drains,** there is no authentic information and in the last meeting held in 17.12.19 not even an agency had been appointed to collect the data. Without quantification of households with or without pit latrines nothing worthwhile can be planned. **The Mukhya Mantri Free Septage collection Scheme will only apply to those having pit latrines and what is proposed for other households is not known.** There is also no clarity on how the DJB or the Urban Development Department proposes to control the flow of grey water from unauthorized colonies. The Septage Regulations do not refer to this aspect which also contributes to pollution.”

(ix) Online Monitoring System

24. Conclusion of the YMC is as follows:-

“The OLMS was got installed and made operational for CETPs and STPs after several monitoring meetings. It took more than one year to reach this stage. Assurances were always given but the outcomes leave a lot to be desired. Systems alone cannot result in analysis, trouble- shooting and correctives. There has to be a willingness to look at the results, question such high discrepancies and to introduce correction. More importantly the OLMS and lab verification are mere tools to assist quality control and maintenance engineers from the industries or project/ SIP in charges have to become accountable if such variation persists which makes the whole process perfunctory. Apart from conducting the technical audits, CPCB needs to see that engineers get trained in using these tools to management much more professionally.

NGT may consider directing that the OLMS system has to be checked constantly and if such wide variation continues it is a reflection of the professionalism of the supervisory staff and NGT will not hesitate to hold the senior most engineers and

project staff responsible. The MD DSIIDC, CEO DJB have to improve the system and make available names of the key personnel and of the vending agency to the YMC which will report on progress.”

(x) Use of treated waste water

25. YMC has recommended as follows:-

“YMC recommends the following for increased utilization of Treated waste water:

- 1. Construction and installation of de-centralized modular STPs of KLD capacity range adjacent to parks and gardens using sewage flowing in the drains or erected along the sewer lines as has been done by the SDMC in Vasant Kunj Park and few other areas.*
- 2. Creating root zone treatment system in vacant portions of the parks and gardens by diverting sewage in the drains from the man- holes. This will have both demonstrative effect and help meet water needs of the parks without resorting to use of machinery. DDA proposes to undertake phyto-bioremediation in parks/gardens where the treated waste water received from DJB is not of good quality. The Phyto/Bio-remediation will help polish the treated waste water to better standards.*
- 3. Other bulk users of water like the Railways, DMRC, Transport Department should also be directed to use treated waste water for washings and construction, if required after further polishing in lieu of ground water presently being used. YMC can monitor this if there is an NGT direction as these bodies have not generally shown any enthusiasm to attend meetings called on this subject.*
- 4. DJB needs to work with Divisional Commissioner and the 11 District Magistrates to see that awareness is built among the RWAs. It would be very effective if NGT were to pass an order on this which would enable the residents to take it seriously and understand the logic behind the move and why their cooperation is needed.*
- 5. The bad odour from the treated waste water, high mineral content and presence of FC which are harmful to plant growth and human health becomes the bone of contention and DJB must see that public fears are addressed and allayed properly through the District Magistrates and also the MCDs which are in charge of conservancy. There is a need for a direction as this becomes no man’s land and results in the park owning agencies refusing to use the water. There has to be a benchmark and an independent agency which tests the water quality being supplied which would allay public resistance and end the disputes about quality of water being supplied for parks.*

(xi) Idol Immersion

26. YMC has concluded as follows:-

“The experience of using artificial ponds for idol immersion has been a learning experience but once the Government agencies understood that the performance and outcomes were being measured seriousness became visible. The success of the artificial pond strategy was due to overarching orders from NGT, constant monitoring but the response from the agencies cutting across all sectors – Divisional Commissioner for providing leadership, the DMCs for creating the pits, the DJB for making water available, the Environment Department and DPCC for bringing out the Notification and arranging extensive publicity and the Education Department for enthusing the school children in particular—is a matter of satisfaction. That the River Yamuna was saved from annual pollution caused by plaster of Paris, synthetic colours, chemicals and plastic on account of the immersions in the river must give cause for relative contentment. It also raises the bar and should lead to even better management in 2020.

The public from outside Delhi were found coming into the city from neighboring districts to immerse their idols. This cannot be stopped but can be avoided if good facilities are created by the neighboring districts. Delhi’s capacity if it is overrun by people using the district ponds could affect the river as the footfalls from outside cannot be anticipated. A specific direction from NGT to the other States to set up artificial ponds at a district level and to mount awareness campaigns would help.”

B. IN RESPECT OF THE STATE OF HARYANA

(i) Status of STP

27. The Haryana YMC has based its report on the observations, it is stated that out of 62 Existing STPs, operational deficiencies have been rectified in 48 STPs. Five New STPs have been recently constructed.

(ii) Status of diversion of sewage in the approved areas

28. Beri Town-The PHED has failed to acquire land for Main Pumping Station and Intermediate Pumping Station, consequently delay in laying of sewer line in Beri Town.

Panipat Town–The ULB Department has not yet accorded Administrative and financial approval for laying of 180 KM sewer line in newly approved residential areas. The schedule of ongoing works of laying of sewer line is also exceeding the target date of 31.12.2020.

Faridabad Town–The ULB Department has failed to accord administrative and financial approval for laying of sewer line in approved residential areas. PHED and ULB Department are responsible for the delay in execution of diversion of sewer in Beri, Panipat and Faridabad town.

(iii) Status of diversion of sewage in the unapproved area

29. Out of 84.14 MLD estimated sewage generation from unapproved areas 28.6 MLD has been diverted to the STPs. The work of diversion of sewage in Panipat Town will not be completed until 31.12.2020 as indicated in the affidavit. HYMC is of the opinion work of diversion of sewage in Yamuna Nagar Town will also not be completed by 31.12.2020. The field report indicating that the quantum of sewage required to be diverted from unapproved areas of Yamuna Nagar is 39 MLD instead of 15 MLD given in the affidavit. The discharge from unapproved area of Faridabad and Panipat are not considered in the total sewage generated from unapproved areas. The ULB Department is responsible for the delay in Yamuna Nagar, Faridabad and Panipat.

(iv) Status of sewage treatment and laying of sewer line in Faridabad

30. The ULB Department has failed to submit comprehensive date bound Action Plan for treatment and diversion of sewerage from approved and unapproved areas within 02 months from the date of Order of Hon'ble NGT dated 11.09.2019. The existing 03 STPs are abandoned and 01 STP is non-functional. Untreated effluent is being discharged into River Yamuna. The administrative and financial sanction from Principal Secretary ULB and Chief Administrator HSVP for treatment and diversion of sewer from approved and unapproved areas of Faridabad Town have not been incorporated in the affidavit. HYMC is the opinion that the ULB and HSVP Department are responsible for the delay.

(v) Status of sewage treatment and laying of sewer line in Gurgugram

31. The GMDA has submitted Action Plan to stop the discharge of untreated effluent into Storm Water Drain, Leg-I, Leg-II and Leg-III (Badshapur Drain) with a target date of 31.12.2020. Till then these Storm Water Drains will carry 75 MLD of untreated/partially treated effluent. There is no significant reduction of discharge noticed in these 3 Storm Water Drains. The HYMC is the opinion that the target date for diversion of sewerage may not be achieved without expeditious action and strict enforcement by officers of GMDA and the Municipal Corporation Gurugram. GMDA has not submitted detailed Action Plan for construction of 20 MLD STP at Jhajgarh and 50 MLD STP at Dhanwapur. The affidavit indicating that there is no gap between the quantum of sewage generated and the available sewage treatment capacity in Gurugram considering existing 30 MLD treatment capacity of

Stand Alone STPs installed by the colonizers is not credible. Further, GMDA has included 57 MLD untreated effluent discharge through Storm Water Drains, instead of the actual 75 MLD which was in the Action Plan. The Storm Water Drain, Leg-I, Leg-II and Leg-III (Badshapur Drain) are still carrying 75 MLD of untreated effluent as submitted in the affidavit.

32. Gurugram being a Metropolitan City discharging effluent through Najafgarh Drain, the following are the observations of HYMC for effective waste water management of the City.

- There is no verifiable data available regarding area wise waste water generation in Gurugram. In the absence of such information it is not possible for gap assessment between waste water generation and disposal after treatment to be made.
- GMDA may be directed to undertake area wise critical assessment of waste water generation and disposal after treatment.
- The Gap between existing treatment capacity (418 MLD) and waste water generation (408 MLD) is only 10 MLD. This is not desirable for such a large township considering floating population, seasonal variation in water consumption and mixing of surface run off with sewage in rainy days.
- The addition of capacity of Stand Alone STPs (30 MLD) with existing treatment capacity of the town cannot be accepted in the absence of proper quantification of each standalone STP and its point of disposal.

(vi) Status of Industrial Waste Water Pollution

33. Status of CETP-Chief Secretary Haryana has directed to HSVP, GMDA and HSIIDC to complete the ongoing works for upgradation and construction work of all CETPs in shortest possible time but the HYMC is the opinion that they might not adhere to the timeline as per the Order of Hon'ble NGT dated 11.09.2019. The Chief Administrator HSVP submitted that they have started the process of upgrading the existing 21 MLD old

CETP at Panipat as per the report submitted by M/S Northern India Textile Research Association (NITRA) and the work for modification shall be completed by 31.12.2020. The second newly constructed CETP of 21 MLD capacity at Panipat is said to be compliant but HYMC has reason to believe that the required discharge is not reaching the CETP from the textile cluster at Sector 29 Part II Panipat. There is need to clinch this through independent inspection which will be arranged by HYMC.

34. Status of standalone ETPs - The HYMC is of the opinion the direction needs to be issued to the Chairman, HSPCB to quarterly monitor the compliance status of Stand Alone ETPs of Industries directly or indirectly discharging their effluent into the River Yamuna. Environmental Compensation must be imposed against the violating units besides taking closure actions under Section 33A of Water (Prevention and Control of Pollution) Act, 1974.

35. Septage Management Policy - 19 ULBs out of 33 towns in the catchment area of River Yamuna have notified their Septage management policy. Rest of the 14 ULBs are yet to notify the same.

36. Diversion and reutilization of Domestic Sewage generated from villages. There are 277 villages in the catchment area of River Yamuna. Action Plan for diversion, treatment and reutilization of domestic sewage has been prepared and submitted by Development and Panchayat Department of Haryana. The work of diversion and treatment in 21 villages out of 277 villages has been completed. Month wise action plan submitted by the

department and the target date for compilation of diversion, treatment and reutilization of domestic sewage by 31.12.2020 appears to be achievable.

37. Status of Online Monitoring Devices (OLMS) in industries, STPs and CETPs. A direction that in case the OLMS reports are > than 10% variation from manual testing reports the OLMS service provider may be held responsible and black listed may be considered.

(vii) Compensation and accountability

38. The compliance status of all these STPs including 09 not complying STPs. The environmental compensation shall be imposed in compliance as mentioned in the affidavit will be ascertained after inspection and by HYMC with the Order of Hon'ble NGT dated 11.09.2019 if the STPs found not complying.

39. Advice of the Haryana Monitoring Committee. The HYMC is the opinion that directions may be issued to the Additional Chief Secretary of PHED, ULB, Managing Director of HSIIDC, Chief Administrator of HSVP and Chief Executive Officer of GMDA through the Chief Secretary Haryana to expedite the following issues falling which Environmental Compensation shall be imposed on them.

- Treatment of 300 MLD domestic and industrial effluent from Faridabad Town.
- Diversion of domestic, industrial effluent to Existing STPs and CETPs in Panipat Town.
- Replacement of Trunk Sewer carrying discharge to the 2 Existing STPs of Sonipat Town.
- Modification/capacity augmentation of 04 CETPs in Industrial Estates of Sonipat Town.

- Plan for treatment of Industrial and Domestic Effluent from small illegal Utensils Manufacturing Units in non-conforming industrial area of Yamuna Nagar Jagadhri Town.
- Treatment of Industrial and Domestic Effluent from industries operating in the nonconforming area of Panipat, Sonipat (Kundli), Faridabad and Gurugram.
- Bioremediation and/or Phytoremediation in all 11 Drains leading to River Yamuna should be initiated immediately to avoid Environmental Compensation.
- GMDA to expeditiously complete the following work:
 - a. Critically assess the quantum of waste water generated from Gurugram Town to plan the desired treatment capacity instead of submitting different reports each time.
 - b. Reuse of treated effluent for Irrigation and Horticulture purposes.
 - c. Consider the scope for Phytoremediation of treated effluent from Gurugram in the catchment area of Najafgarh Lake. A team of officers from Central Pollution Control Board (CPCB), HSPCB, GMDA and the Members of River Yamuna Monitoring Committee along with Dr. C.R. Babu, Emeritus Professor, Delhi University visited the Najafgarh Drain and Lake on 25.01.2020 to assess the possibility of treating sewage from Gurugram Town through Phyto-remediation. A Report will be submitted by Dr. C. R. Babu directly to Hon'ble NGT.

The Najafgarh jheel has been an important seasonal wetland of the Yamuna-Sahibi basin which acts as a natural floodwater regulating and groundwater recharging area due to its unique topography. It is a shallow wetland in the low-lying areas on the borders of Gurgaon district of Haryana and the National Capital Territory of Delhi between the 208m and 211m contour lines above mean sea level. The catchment area of Najafgarh Jheel includes land of Ghummanhera, Shikarpur and Jhatikra villages in NCT Delhi, Budhera, Dhankot, Kherki Majra and Daulatabad villages of Haryana together forming the largest seasonal wetland of this region. The Jheel swells in area during the monsoon due to rainwater runoff from a large catchment of Gurugram Town through Badshapur Drain (Leg-III), the Sahibi River. The area falling within the 209m contour is approximately 917 acres. The core area of Najafgarh Jheel which remains submerged during most part of the year could be classified as a Nature Conservation Zone (NCZ) as per the guidelines of the NCRPB. In addition to this, the area could be declared as a 'No Construction Zone' under the relevant Statutes and should be maintained as such. Only Agriculture, Forestry, Pisciculture and Horticulture should be allowed within this zone. The Najafgarh Jheel is a feeding and nesting site of Migratory Birds. The domestic effluent discharge and surface runoff from Gurugram city

is now significantly contributing to the water flow to the Najafgarh Jheel.

The HYMC is of the opinion that the Najafgarh Jheel and its catchment area can be effectively utilized for Phytoremediation of effluent, surface runoff discharged from Gurugram. This will help in reducing pollution load in River Yamuna through Najafgarh Drain.

- Direction may be issued to Government of Haryana to explore the possibility for notifying the core area of Najafgarh Jheel as Nature Conservation Zone and to implement the Phytoremediation of domestic effluent discharge and surface runoff from Gurugram city. Phytoremediation in the remaining 10 Drains discharging into River Yamuna needs to be taken up expeditiously as directed by Hon'ble NGT in its Order dated 11.09.2019.
- Direction may be issued to re-plan the execution of works which are scheduled to be completed beyond 31.12.2020 so that no untreated effluent reaches River Yamuna after 31.12.2020.
- Direction may be issued to all the line departments to remove the operational and structural deficiencies of all STPs and CETPs as indicated in performance evaluation and technical audit reports submitted by third party agencies.
- Direction may be issued to implement the Standard Operational Procedure for operation and maintenance of STPs and CETPs and to have oversight of the compliance of the check lists which should be signed by the unit in-charge.

C. In respect of State of Uttar Pradesh

40. River Yamuna receives sewage mainly from cities of Sahibabad, Loni and Indrapuri drains which meet Shahdara drain before it joins the River Yamuna. The CPCB in its report dated 27.12.19 submitted to the YMC has informed that the cities of Sahibabad and Loni Generate 575 MLD of sewage for which there are seven(7) STPs of a total capacity of 427 MLD. However out of these, only 2 STPs are functioning properly treating 80 MLD to the prescribed standards. Consequently there is large quantity of sewage flowing through the Sahibabad and Indrapuri drains. In addition, Noida drain, which originates in Delhi and thereafter flows through Noida before joining river Yamuna discharges 354 MLD of sewage

into river Yamuna. The details of flow and pollution load are as given in the statement below:

“

S. No.	Name of the drain	Discharge	BOD mg/L	COD mg/L	TSS mg/L
1.	Sahibabad Drain	40 MLD	744	1615	1189
2.	Indrapuri Drain	31 MLD	743	1463	647
3.	Noida	354 MLD	46	163	83

”

41. The Principal Secretary UD of Uttar Pradesh informed YMC that the State Government has prepared action plan to comprehensively control the flow of sewage in the drains joining Shahdara drain and stop all the sewage flowing through the Sahibabad and Indrapuri drains. This is being done by engaging concessionaires for each city for complete management and maintenance of the sewer network and STPs which includes undertaking maintenance and up-gradation wherever required. For the city of Ghaziabad the concessionaire, namely, M/s VA Tech Wabag, Chennai has since been engaged with effect from 16.12.19. Once this new policy of “one city one operator” becomes fully functional, the sewer network as well as STPs will be run efficiently and result in better capacity utilization. Under the new agreement, the payment to the concessionaires is linked not only to the quantum of sewage treated at the plant but also adherence to the quality standards.

42. On the stoppage of sewage flowing through the Sahibabad, Indrapuri and Banthala drains from sewerred areas, the YMC was informed that by June 2020 all the sewage flowing from sewerred areas will be plugged ensuring that there is no sewage entering

Shahdara drain through the Sahibabad drain. Banthala drain does not meet Sahibabad drain. A STP of 60 MLD capacity is also proposed to be set up for treating sewage in Indrapuri and Banthala drains and proposal seeking financial assistance from NMCG has also been sent to Govt. of India. The State Government has also formulated Septage Management Policy in October 2019 which seeks to cover all the unsewered areas. The septage management projects presently under implementation are expected to be completed by November 2020.

43. On phyto-remediation/bioremediation, the YMC was informed that the State Government has submitted a DPR for bioremediation in 459 drains using NEERI technology to the NMCG for approval. The State Government has also agreed to contribute 50% of the budgetary requirement towards this scheme out of its own financial resources.

Industrial Pollution

44. Pursuant to the directions of the Tribunal, UPPCB has imposed environmental compensation (EC) of Rs. 2.03 Crores out of which only 63.98 lacs has been realised. The realization being poor, the UP PCB in compliance of NGT orders has also evolved a policy under which the “consent to operate” for the defaulting unit is not being renewed until the EC has been paid. Besides, EC if not paid is purposed to be recovered as arrears of land revenue. The YMC will monitor progress on this.

Industries in Non-Conforming areas

45. As regards inventory of industries in conforming and non-conforming areas a joint team of the district administration, electricity departments, land owning agency and UPPCB has been undertaking a survey of industries in residential/non-conforming areas. In Loni and Shahdara in all 295 industries in Loni and 36 industries in Sahibabad have been closed since August 2019.

Industries in Conforming areas

46. A total of 97 industries were identified not complying with Air/Water Acts. All these industries were closed and sealed.

Flood Plain Rejuvenation

47. 167 Hectare flood plain of river Yamuna falling within UP is proposed to be rejuvenated by creating wetlands and biodiversity parks through DDA and funds for this purpose has been agreed to be provided by the state of UP. in the meeting held on 30.12.19, the Engineer in Chief UP Irrigation Department informed the YMC that the Finance department has since concurred in the payment of Rs. 35 crores to DDA for flood plain rejuvenation as a deposit work on the lines of 10 projects that are being implemented by DDA on flood plains under its control.
48. The DDA has on its part already completed the tendering process and once funds are received from the state of UP, the implementation of flood plain rejuvenation activities as per the project prepared by DDA can commence on the ground. YMC will monitor this.

49. We have already noted the observations of the YMC that the main concern for rejuvenation of river Yamuna is sewage and solid waste management. Even though this Tribunal has issued categorical directions to taking steps for preventing dumping of solid waste and untreated sewage into the river and drains connecting the river, the report shows that progress achieved in setting up of adequate number of STPs and maintenance of drains is hardly adequate. Sewage and faecal sludge management is quite unsatisfactory.

50. In Delhi there is no adequate sewage connectivity. The sewage charges are not being collected on account of *Mukhya Mantri Free Sewer scheme* introduced in the recent past (about six years ago). There is also scheme for 666 litres of free water per day per household. As already noted above, the YMC has observed ***“In other words, lakhs of residents in these unsewered colonies continue to release their sewage into drains, cause pollution and do not pay anything as sewerage charges..... It is questionable whether households should be exempt from paying sewerage charges despite polluting the drains and ultimately the ground water and the river. Whether the state should subsidize polluters and ought not the ‘Polluters Pay’ principle apply are moot points which the YMC cannot address but these are highlighted as they affect the basic tenets of civic life and the fundamental duties of the authorities in charge to deter pollution of the environment.”***

51. We find the approach of Delhi Government in failing to prevent discharge of untreated sewage and pollutants in river Yamuna to

be against the concern for environment and the rule of law. Failure in this regard may partly be on account of policy of *free sewer scheme* in violation of orders of this Tribunal and the Hon'ble Supreme Court referred to above in para 8. Such policy is certainly contrary to basic tenets of civic life and the fundamental duties of the authorities incharge to deter pollution of the environment. There may be no objection to freeship if inspite of freeship the administration discharges basic obligations to prevent discharge of untreated sewage into the water bodies, which is not happening. It is well known that the poor are the worst victims as they are most vulnerable. Neither the citizen is required to pay for treatment of sewage nor the State is able to ensure such treatment from its own resources. Resources of the State are not meant to help a polluter. Pollution remains unabated which seriously affects the rights of the citizen to clean environment. It is better to provide clean environment and recover the cost of remedying the pollution than declaring free sewage treatment and not treating the sewage. Continued huge pollution of river Yamuna can certainly be attributed to governance deficit and absence of sound management practices. We have already quoted the observations of the Hon'ble Supreme Court in para 8 above that order of this Tribunal dated 11.09.2019 directing the Delhi Government to recover sewerage charges should be implemented, which is not happening. While we have separately dealt with the issue of a single agency being accountable for treatment of sewage and remediation of all the drains carrying waste water, it is for the concerned authority to consider whether sewage collection, treatment and utilization

needs to be privatized so that an appropriate agency ensures that no untreated sewage is discharged into river Yamuna and specified cost for the purpose is recovered in a specified manner from the generators of sewage in the interest of protection of environment and public health.

52. In this regard reference may also be made to an article published in the Hindu dated 01.01.2014 under the heading 'Is free Water supply bad economics?'¹⁴ as follows:-

“Water is increasingly becoming an economic good worldwide because of its storage and distribution costs. Rainwater is harvested in dams and reservoirs to be supplied for various purposes, including domestic use, which involves huge cost.

At the same time, groundwater is exploited at an alarming rate; it also involves huge drilling and electricity costs. The cost of management and distribution of water for urban households is massive.

Why provide water free to all households when the per capita income of this State is much higher than the national average? *Is it not against the ability to pay principle? This free scheme reportedly is going to cost about Rs. 160 crore per annum at current prices for the DJB and is expected to increase manifold for a variety of reasons. How is DJB to manage this cost?*

According to one estimate, the DJB’s net cash revenue surplus increased from Rs. 40.56 crore in 2007-08 to Rs. 233.57 crore during 2013-14. DJB’s dependence on the government for operational costs reduced from Rs. 380 crore in 2009-10 to zero in 2013-14, a remarkable achievement. The financial condition of DJB will now run into a mess.

Delhi does not have the luxury of a perennial surface source of water. *It needs water from the neighbouring State of Haryana.....*

*Besides, the groundwater stock is precarious in the State. As per the estimate of Central Ground Water Board, the total annual replenishable groundwater resource is only 0.30 BCM (billion cubic metres) for Delhi, but the draft of groundwater is already 0.48 BCM/year, which is way above the permissible limit. Owing to the increased scarcity of water, **the present supply of water even in posh areas is only about 509 litres per household per day, below the promise made by this new government.***

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<https://www.thehindubusinessline.com/opinion/Is-free-water-supply-bad-economics/article20707179.ece>

Therefore, there is no guarantee that the Delhi government will be able to provide the promised supply of water to all households. Considering the increased scarcity of water, is it necessary to provide free supply of water to all households? **Will it not aggravate water scarcity during summer?** This scheme pronounces that if a household consumes more than 20 kilo litres of water, it will have to pay for the entire water consumed with 10 per cent additional charges. How will this work? Who will monitor this? Will it not encourage consumers to tamper meters?

In most cities, the domestic consumption of water is not monitored as it involves considerable transaction cost. Delhi reportedly has a pipeline network of 14,000 km with about 68 per cent households having a piped connection. If this new scheme tries to measure the consumption of water by meter, will it not increase the operation and management cost?

A recent CAG report underlines that “the Delhi Jal Board has neither a proper system to measure the water supply to different areas nor does it have access to reliable data on population in different areas”. **It, therefore, cannot ensure equitable supply of water.**

If this Government is serious about improving the plight of poor people, it should provide free water only to those households which are identified as economically poor.

It is proved beyond doubt that free supply of any good to consumers will result in inefficiency. Water cannot be an exception. **There is ample evidence to prove from different states that the free supply of electricity to farm sector over the years has not only increased the exploitation of groundwater but also created financial mess in many State electricity boards.**

DRAWING LESSONS

A UN estimate suggests that each person needs 20-50 litres of water per day for drinking, cooking and cleaning. If this is so, the supply of water to the tune of close to 700 litres per household per day will surely increase inefficiency.

Delhi must draw lessons from the Amravati and Malkapur regions of Maharashtra. These regions provide water supply to all of its residents through skilful water use efficiency and lower per capita consumption.

McKinsey Global Institute had underlined that Delhi could experience the biggest increase in water demand from 2010 to 2025 because of fast urban agglomeration. This means the capital cost requirement for managing the amplified water demand will increase. How will the State generate resources with free supply of water?

Therefore, the present Government must rethink on its policy of providing free water supply to all households and instead try to work on providing water to poor

people at an affordable rate, without affecting the viability of the DJB.”

53. We may observe that non-compliance of rules relating to waste disposal results in damage to the environment and public health. Any failure needs to be visited with assessment and recovery of compensation for such damage from the persons responsible for such failure. A study was recently got conducted by CPCB, under orders of this Tribunal requiring such a study by a joint Committee comprising CPCB, NEERI and IIT, Delhi about the monetary cost of damage caused to the environment on account of existence of legacy waste dump site at Gurgaon (Bandhewadi) vide order dated 05.03.2019 in O.A. No. 514/2018. The report of the CPCB filed on 13.02.2020 is that damage on account of the said legacy waste dump site was Rs. 148.46 crore, on account of damage to the air quality, soil and water quality, climate change and disamenity (aesthetic). The damage has been assessed in terms of impact on health due to release of pollutants in air atmosphere, release of leachate into ground /surface water and soil, due to pollution from the landfill site, damage cost associated with climate change due to carbon di-oxide and methane, damage caused due to aesthetics loss, price depreciation due to disamenity cost etc.

Thus, monetary cost of every legacy dump site is expected to be huge depending upon the location, quantity of waste and area covered. Needless to say that there is huge cost for non-compliance of other provisions relating to waste management – Solid as well as Liquid. Loss to the environment and public health is taking place not only on account of delay in clearing legacy waste but also for

not complying with other provisions of the Rules resulting in huge gap in generation and processing of waste.

It may be necessary to determine such cost for delay in clearing legacy waste at every dump site as well as for delay in complying with other rules and failure to treat sewage and recover the same from the persons responsible for action in the matter.

54. In the light of observations in the third report by the YMC and earlier orders of this Tribunal dated 11.09.2019 all concerned authorities need to take further action expeditiously as per laid down timelines and to pay compensation wherever timelines are violated which may be ensured by the CPCB. CPCB may issue notice to the persons accountable to pay compensation and in case of non-payment and seek execution by moving this Tribunal.

Wherever coercive measures are required to be taken and have not been taken against official lethargy, action may be taken as already directed by the concerned administrative heads. In case of any failure, this Tribunal may have to take further action for strict compliance.

I. The issue of entrusting the functions of management of all drain in Delhi to a single agency – consideration of the issue in the light of response of GNCTD:

55. On this aspect, the YMC has *inter-alia* observed:-

“Delhi has over 1,797 unauthorized colonies, over 135 urban villages and over 675 slum clusters where some 10 million people dwell without any town planning regulations in force. That includes absence of sewerage, drains and conveyance systems. To have an impact on the quality of river water alternatives should address the needs of such bulk sewage discharge.”

56. The YMC has referred to three earlier reports on Delhi's drainage on the subject of adoption of alternatives, namely, Drainage Master Plan for NCT of Delhi published in July 2018 prepared by IIT Delhi (Department of Civil Engineering) for the department of Irrigation & Flood Control, GNCTD; CPCB Report on River Yamuna - Waste Water Management Plan In Delhi 2012 and the report of the High Court Constituted Committee set up to look into the drainage problems in Delhi. **YMC then mentions that absence of ownership among the Drain Owing Agencies will impact new initiatives. The Committee suggests that DJB should take responsibility for treatment of the entire sewage.** The observations of the YMC are:-

“The aims of the Delhi Jal Board Act, 1998 provide for the establishment of a Board to discharge the functions of water supply, sewerage and sewage disposal and drainage within the National Capital Territory of Delhi and for matters connected therewith. It has the mandate to "collect, treat and dispose-of sewage from any part of Delhi and carry out works connected with sewerage, sewage treatment and sewage disposal including the planning, design, construction, operation and maintenance of works relating thereto.”

*Discussion on Responsibilities for Drains carrying Sewage. The Delhi Jal Board was founded in 1998 and was the successor to the erstwhile Delhi Water Supply & Sewage Disposal Undertaking (DWS&SDU) which functioned under the unified Municipal Corporation of Delhi (MCD). The Conservancy and Sanitation Department of MCD was wholly in charge of all drains regardless of their location while the MCD's DWS&SDU was in parallel responsible for water supply and sewage. After formation of the Delhi Jal Board and a subsequent administrative change effected some years later it was decided that the drains contiguous to roads would be under the "jurisdiction" of different agencies. **Although enforcement pertaining to the drains continued to be the statutory responsibility of the Urban Local Bodies the focus became diffused and enforcement was ignored. With overlapping responsibility, cleaning the storm water drains became confined to annual desilting only.***

*With overlapping responsibility, unwillingness to confront sewage in storm water drains or to recognize that it spreads unsanitary conditions and poses public health hazards, **in effect the three DMCs ignore the problem and DJB says it has little role to play.** The ownership, responsibility for sewage in the storm water drains has to be owned if projects for containment of sewage in the drains done through external agencies are to succeed.”*

57. GNCTD has, in its submission with respect to suggestion of YMC for entrusting the function of management of all drains in Delhi to a single agency, stated that there are jurisdictional issues involved with regard to management of drains in Delhi and the same cannot be separated from the roads. It has also stated that in view of multiplicity of road owning agencies in Delhi, it is not feasible to entrust the functions of management of all drains in Delhi to a single agency. Instead, it has stated that PWD will constitute an Integrated Drain Management Cell (IDMC) for management of all drains of Delhi and all agencies/departments/Urban Local Departments shall nominate an officer not below the level of Chief Engineer dealing with the management of drains to the cell.

58. While there is undoubted need for single agency to manage the remediation of entire sewage and the drains carrying waste water to river Yamuna, as recommended by the YMC, in view of stand of the GNCTD, such functions may be taken over by the 'Integrated Drain Management Cell' for management of all drains of Delhi and all agencies/departments/Urban Local Departments shall nominate an officer not below the level of Chief Engineer dealing with the management of drains to the 'Cell'. The CEO, DJB should be the Member Secretary of such Cell in view of

statutory functions of the DJB and technical skill sets and expertise available with it for sewage management. The 'Cell' will be headed by the Chief Secretary, Delhi to facilitate inter departmental coordination and action. Constitution of such Cell will not in any manner affect the ownership of the drains. The functions of the drain being primarily to carry storm water, it is absolutely necessary that sewage is not discharged into such drains in violation of Water (Prevention and Control) of Pollution Act, 1974. In any case, if the sewage is found discharged therein, the same needs to be remediated especially before such drains meet the river Yamuna to prevent pollution of the river and to maintain laid down water quality standards. This needs to be done with the inter se cooperation and coordination of agencies owning the drains as well as the agencies treated the sewage. This task may not be possible if the work is entrusted only with PWD as suggested by GNCTD.

II. Report of the YMC dated 17.02.2020 on the subject of 'Alternate Technologies for Management of Waste Water in Drains'.

59. We may now take up for consideration report dated 17.02.2020 "Alternate Technologies for Management of Waste Water in Drains".
60. YMC has suggested that bio/phyto remediation should commence. The detailed report containing guidelines, criteria for inclusion/exclusion, cost effectiveness of different technologies and models that have succeeded on the ground in given situations are discussed in the report of CPCB below. The report of CPCB is being included as was sent to YMC with only marginal

changes as it emanates from a statutory organization. CPCB did however associate all the people that attended the MC's meeting and heard them fully.

61. The YMC has in its report dated 17.02.2020 made comments on the CPCB report on Alternative Technology for Management of Waste Management of Drains as follows:

“xx xx xx
The positive features alluded to include factors like low cost, high efficiency in reducing the BOD load, reduction in heavy metals and coliform, and aesthetic appeal apart from providing various ecosystem services like ground water recharge, bio-diversity conservation, habitat for birds etc.

xx xx xx
The models suggested by CPCB take into account the drain profile, the flow, the width, depth and pollution load in the drain, and the presence of both organic and industrial waste in the drains. The permutations and combinations vary between drains with flows ranging from less than 20 MLD to more than 100 MLD. The drain widths covered under different models vary from less than 3 metres to more than 15 metres. The pollution load in BOD terms ranges from less than 50 mg/L to more than 100 mg/L. Most storm water drains and their feeder drains will fall under one or the other category/models given in the CPCB report. The range of situations discussed appears to cover the universe of situations prevailing in most drains in the river basins.

The Committee has suggested that models needs to be compressed to avoid confusing the field functionaries as except the public health engineers, there exists little conversance with these technologies functioning in densely inhabited areas. The Committee feels that while the models can serve as generic models for different flow regimes, drain profile and organic load what is required to draw up site specific designs based on land availability adjacent to drain, the geographic features of drains which are selected, the catchment area, the gradient, flow, depth and other related parameters.

YMC has stated that in view of large variation in the flow in storm water drain during the monsoon and the dry season, the structural integrity of CWS, physical treatment units and the root zone treatment system during the monsoon will have to be safeguarded. It has further suggested that the botanical species used for reducing BOD, COD and heavy metals etc. need to be described alongwith its availability and source. It has made an observation that each model particularly for high levels of flows and high organic loads must be designed with greater care and claims verified before its large scale replication. The YMC has suggested that in view of phytoremediation being a new area for ULB/DJB engineers, the implementing agencies are informed about the compatibility of different models for different ground situation and the correlation between the suggested models and different drains and catchment characteristics. This will help get a better understanding of the relevance of each model to a given ground situation.

The Committee has made the following recommendations:

“Recommendations:

The following recommendations are being made to enable taking this subject forward.

1. The need for bio- remediation of drains that carry sewage is fully recognised. To permit the pollution of the water bodies, the ground water and the Rivers because of past negligence in establishing sewage systems would be environmentally hazardous particularly as any admixture with drinking water pipes can give rise to water borne diseases like cholera diseases dysentery. That every step has to be taken to prevent such pollution is unquestionable. The effectiveness and relative simplicity and cost-effectiveness of constructed wetland systems as well as several other models of bio/phyto-remediation have been accepted by CPCB and all agencies connected with sewage management. And at an All India level, it is desirable that are the models are shared with the ULBs and an opportunity is given to the state Governments to

respond. In the first stage CPCB needs to organize a workshop to sensitize all the stakeholders on the alternative technological solutions.

2. NGT may consider giving a direction to the Ministry of UD to notify a supplementary policy containing the guidelines on phyto-remediation as a policy directly addressing decentralised sewage management on the lines of FSSM policy. The Ministry may be asked to have the CPCB Guidelines and Models discussed with the State Departments of Urban Development in the next two months before the policy is adopted and notified. Before that CPCB should hold a meeting with the ULB engineers and PCB Chairmen and Member Secretaries to orient them and also motivate them.

3. In the case of GNCT of Delhi, it may not be necessary to wait for a policy to be notified because the experts are all available locally and all that needs to be done is to select drains where the feasibility and impact in treating sewage would be worthwhile. Directions could be considered to be given to GNCT, the Department of Irrigation and Flood Control, the Delhi Jal Board and the Municipal Corporations and other Urban Local Bodies in UP and Haryana to select drains on the basis of CPCB guidelines. They can associate the DPCC and the State PCBs and complete the selection exercise in two months. A direction could be considered to be given to the Chief Secretary and the Principal Secretary, Urban Development in Delhi, UP and Haryana to get the identification of models vis-a vis the drains polluting the Najafgarh, Shahdara and Supplementary drains started. They can be directed to do the exercise in consultation with CPCB. In the case of the Haryana drains, the Haryana Yamuna Monitoring Committee (HYMC) could be tasked with follow up on a date to day basis. Under the aegis of the Ministry of Jal Shakti and NMCG, Delhi and Haryana can give an early start to the drain selection process.

4. The drains as well as models selected can at best be pilots to provide experience. Replication and upscale ability would depend on the outcomes experienced both in terms of selection and implementation as well as the effect on the reduction of pollution. For the sake of abundant caution, the pilot projects should not be replicated until experience of planning, execution are known and the outcomes measured. The reason why parallel action is suggested is because in the case of drains out falling into the Yamuna at Delhi there is already considerable knowledge about the topography of the drains, the quantum of sewage, the flow and other determinants. A few pilots covering all the 15 models in different geographic location within Delhi have a better chance of coming up under the direct supervision of the key central government agencies viz. M/o Jal Shakti, NMCG, M/o EF&CC and CPCB.

5. The Ministry of New & Renewable Energy (MNRE) had drawn up and notified state wise lists of agencies to install solar panels on turnkey basis maintained on the website of the Ministry centrally but also given freedom to the states to

empanel state specific lists of service providers. On similar lines there is a need to start a dialogue with possible agencies who might be interested in taking up turn- key projects and get empanelled with the Governments as was done by MNRE and the State Power Departments to encourage solar rooftop projects. An exercise to generate lists of agencies who are interested in executing turn-key projects should be started in parallel by CPCB under the aegis of the Ministry of E F&CC or Urban Development which can be left to the Government to decide. An illustrative list of the agencies which have executed the projects mentioned by CPCB in the list of case studies are already available with the CPCB and NMCG and those could be the starting point.”

IV. The issue of setting up of Yamuna River Front Management Authority (YRFMA) - consideration of the issue in the light of response of the DDA.

62. Coming to the report about the need for Yamuna River Front Management Authority (YRFMA) for Delhi, YMC refers to earlier report of Committee comprising Prof. AK Gosain (IIT Delhi), Prof. CR Babu (Emeritus Professor Delhi University), Prof. Brij Gopal (IIT Roorkee), assisted by officers from the DDA, Government of NCT of Delhi, DJB and UP Irrigation department, recommending as follows:-

- “1. To set up a separate, independent body (like authority) to plan and execute the entire restoration programme for the River Zone in the NCR that involves three state governments.**
- 2. To provide statutory protection to flood plain under either the Indian Forest Act (Protected forest) or the Environment Protection Act (Eco-sensitive Zone). Ministry of Environment & Forests, Govt. of India and Govt. of NCT of Delhi was expected to take action.**
- 3. The Zone 0 (river zone) must become a place of attraction and active indulgence by the city dwellers without compromising the river's ecological and social functions.”**

63. Reference has also been made to supplementary report of MC dated 28.06.2019 recommending a Society to manage the flood plain area, including encroachments and pollution caused by

allottees and to consider inclusion of industrial houses for improvements based on the advice of Archaeological Survey of India. The society may act as special purpose vehicle. It was recommended that a River Front Authority or a Consortium of NGOs active in River pollution and rejuvenation activities along with the CSR arm of reputed Industrial Houses interested in preserving local history and culture and senior representatives of enforcement agencies was needed to give an overall direction to the management of the entire area which broadly falls under DDA's ownership. YMC is conscious of the fact that floodplain of the river separate the river stream from the river front. River front begins where the floodplain ends. Though the DDA has been directed to demarcate 1 in 25 year floodplain, in most places like the Yamuna Bazaar, 32 Ghats and Kudesiabagh, the boundary between the floodplain and river front is not distinct.

64. A reference has the been made to order dated 24.08.2007 of the Cabinet Secretariat constituting Yamuna River Development Authority (YRDA) comprising Lt Governor, Delhi, Chief Minister, Delhi Secretary, Ministry of Urban Development, Secretary, Ministry of Environment & Forests, Secretary, Ministry of Environment & Forests, Chief Secretary, GNCT of Delhi, Pr. Secretary, Urban Development, GNCT of Delhi, CEO, Delhi Jal Board and Vice Chairman, DDA, with the following of terms of reference:-

“1. Commission studies on different aspects of the development of the river, viz., hydrology, ecology, environmental pollution, sustainable use of the river front, etc. to feed into the policy framework.

2. *Develop a policy framework and prepare an integrated plan addressing issues of both quantity in terms of river flow and quality in the Yamuna river.*
3. *Develop an operational plan for the implementation of the river action program.*
4. *Effect inter-sectoral coordination for planning and implementation until such time as a statutory arrangement is in place.*
5. *Suggest the design for the statutory framework*

YMC could not access the order but there are news reports of that period stating that this High Powered Committee led by the LG had approved the draft prepared by the Technical Advisory Group set up for the purpose of cleaning the river and develop its surroundings. The draft was perhaps sent to the Prime Minister's for approval. The High-Powered Committee was reported to have observed that the Yamuna river bed is a no-construction zone and emphasized on the need for riverfront development, cleaning up of the river and pinned its hopes on DA's interceptor project as reported. The technical committee had suggested that the riverbed should be developed as a biodiversity with three zones, one would be a buffer zone, the other an inner core zone and the third would be the interactive zone where people will be allowed. Whether this Committee has met in the last 5 years is not known to YMC. Informally YMC has learnt that it is not functional .It is laudable that there was a far sighted vision for the protection and rejuvenation of the river but that vision has remained a pious hope. With due respect, YMC is of the view that based on the knowledge and experience gained over the last one year, such a body will not be able to grapple with the spread of activities on the Yamuna flood plains and river front which are going on every day in progress daily.

Challenges in Setting up a River Management Authority/ SPV or having an MOU with CSR Foundations. It needs to be recognised that any move to set up a River Management Authority will run into problems as it will require approvals from the High Powered Committee set up by the Cabinet Secretariat in 2007 unless those orders are rescinded, modified or superseded with a fresh order. There is an urgent need to adopt strategies which goes beyond idealistic, utopian ideas which have achieved nothing in the last 13 years compared to the haphazard ingress which has taken place. There are compelling reasons to show more pragmatic awareness and immediate concern for the ground realities that are obtaining on the river front. Giving a free reign to haphazard activity and permitting unregulated

footfalls will only make the situation more and more irretrievable.

*How Archaeological Survey of India entered into a Partnership with a CSR Group. A copy of the MOU entered into by ASI (under M/o Culture) with a Dalmia CSR group for the Red Fort is an example of how a Government body has been able to partner a CSR group and successfully entrusted the maintenance, watch and ward and provision of basic and advanced amenities to the public and provided for the administrative, financial oversight arrangements by the ASI, in detail. DDA needs to find one or more private players who can in partnership with the Authority take care of all areas on the River front wherever there is human activity to control that aspect, regulate it and oversee the management of different projects which have been and are under development near the river front. The YMC has spent several hours persuading the DDA representatives as well as the Vice Chairman but it has not made headway. The victim of the non-action has been the River Yamuna. **If YMC were to advise on what should be done it is the considered view of the YMC that a River Front Management Authority May be set up in partnership with CSR wings of reputable companies having an oversight body comprising DDA in the lead position under its Vice Chairman, who may not delegate this function, to be assisted by the relevant Government representative and leading NGOs who can provide oversight and see that the public interest is preserved while citizens benefit from a river front which is vibrant but regulated.***

65. DDA in its submission with regard to River Front Management Authority has stated that since the land in Delhi is with the Govt. of India and DDA is the agency authorised to manage land parcels in Delhi, land owned by the DDA along the river front cannot be transferred to any other agency. **The DDA has suggested that to ensure better coordination amongst the various agencies, River Front Society or Special Purpose Vehicle be considered.**

Directions

66. In view of above discussion, there is need for stringent compliance of directions to ensure sewage and sludge management and other pollution aspects for protection of environment, public health and safety and also rejuvenation of river Yamuna. **There is a continued failure of compliance by the authorities inspite of repeated directions of the Hon'ble Supreme Court and this Tribunal in the last more than twenty five years.** The evaluation of damage on account of degradation to river Yamuna, in monetary terms, on account of such failures has also become necessary for fixing accountability.

67. Accordingly, we direct as follows:-

- a. In the light of observations in the third report of the YMC dated 05.02.2020 showing inadequate progress in compliance of orders of this Tribunal dated 11.09.2019, all concerned authorities (in Delhi, Haryana and U.P.) need to take further action expeditiously on the issues of sewage management, industrial pollutants, solid waste management and other issues, as per laid down timelines and to pay compensation wherever timelines have not been met which may be ensured by the CPCB.

CPCB may issue notice to the entities accountable to pay compensation and in case of non-payment and seek execution by moving this Tribunal.

Wherever coercive measures are required to be taken in terms of orders of this Tribunal dated 11.09.2019 and have not been taken against official lethargy, action may be taken

as already directed by the concerned administrative heads. In case of any failure, this Tribunal may have to take further action for strict compliance. The Authorities may give their progress reports of the status as on 30.04.2020 to this Tribunal by email at judicial-ngt@gov.in before the next date.

b. The DDA may constitute a Special Purpose Vehicle (SPV) preferably within two weeks from today for rejuvenation of river Yamuna. The functions of such entity will include ecological restoration of the flood plain zones, setting up of bio-diversity parks, artificial wetlands, phyto-remediation of drains at the river mouth locations, maintaining the vigil and undertaking flow measurement, creating ecological services, removing encroachments and undertaking other activities, including river front development. It may also take steps to attract and educate the citizens and nature enthusiasts for nature related activities, including building environmental temper amongst citizenry, without in any manner causing any damage to the flood plains.

c. Delhi Government may set up within two weeks from today an 'Integrated Drain Management Cell' (IDMC) under the Chief Secretary for remediation and management of all drains of Delhi with representatives of all agencies/ departments/Urban Local Departments owning such drains, not below the level of Chief Engineer dealing with the management of drains to the IDMC. The CEO, DJB will be

the ex-officio Member Secretary of the IDMC. The IDMC may meet atleast once in a week, to start with. Constitution of IDMC will not affect ownership of the drains. IDMC may send its reports to this Tribunal every two months by e-mail at judicial-ngt@gov.in.

d. CPCB may revise its report on 'Alternate Technologies for Management of Waste Water in Drains' in the light of comments of the YMC dated 17.02.2020 and forward the same to the Ministry of Urban Development, Jal Shakti, Govt. of India, NMCG, Governments of Delhi, Haryana and U.P. within one week from today for further necessary action on their part for making a policy which may be finalized within one month from today. CPCB may file a compliance report after collecting status of compliance from the said authorities by e-mail at judicial-ngt@gov.in before the next date. Revised CPCB report may be placed on its website and also circulated to all States/UTs and PCBs/PCCs.

e. The IDMC may prepare and execute an action plan on the subject of 'Alternate Technologies for Management of Waste Water in Drains' after appropriate techno-economic evaluation at its end in the light of reports of the CPCB referred to by the YMC in its recommendations dated 20.01.2020 and 17.02.2020 or any other relevant inputs on the subject, within three weeks from its constitution which may be ensured by the Chief Secretary, Delhi. It is made clear that this direction does not in any manner obviate the

need to comply with the earlier direction of this Tribunal and the timelines already laid down. It is made further clear that Tribunal has not expressed any opinion about viability or desirability of any particular process or technology indicated in the report or otherwise. Only object of direction of this Tribunal is reduction and abatement of pollution load by using the best possible option.

- f. Chief Secretaries of Haryana and U.P. may also ensure action on the pattern of direction 'e' above in their respective jurisdiction within three weeks from today.
- g. The Government of Delhi may review its 'free sewer scheme' referred to in para 22, 51 to 52 above, in the light of the order of the Hon'ble Supreme Court dated 24.10.2019 in Civil Appeal No. 9276-9290 of 2015 (*Tata Power Delhi Distribution Ltd. v. Manoj Mishra*), referred to in para 8 above, earlier orders of this Tribunal dated 08.05.2015 (referred to in para 22 above) and dated 11.09.2019 [para 15 (viii) (e)] and recommendations of the YMC (para 22 above).
- h. A joint Committee comprising CPCB, NMCG, NEERI, IIT Roorkee and IIT Delhi may assess damage to environment, in monetary terms after the date of order of this Tribunal 13.01.2015, on account of degradation of river Yamuna, by continued inaction of the authorities in Delhi, Haryana (from Hathnikund till entry in State of UP), U.P. (upto Mathura), within three months from today. CPCB will be

the nodal agency for coordination and compliance. The Committee will be at liberty to take such assistance from any individual(s)/institutions as may be necessary.

68. We place on record our sincere gratitude and appreciation to the YMC for its outstanding contribution in endeavours for rejuvenation of river Yamuna. Once setting up of SPV for River Front Management and constitution of IDMC as a single agency for remediation and management of all the drains in Delhi takes place, it should be possible for such SPV set up by the DDA and the Chief Secretaries of Delhi, U.P. and Haryana to directly monitor further steps, extensively laid down in the order of this Tribunal dated 11.09.2019 and the present order, in a time bound manner.

69. The YMC may accordingly submit its final report on the status of compliance as on 30.04.2020, before the next date so that thereafter monitoring of progress of rejuvenation of river Yamuna and related issues is taken over by the SPV and the Chief Secretary, Delhi, by constituting an appropriate effective institutional mechanism directly under him for exhaustively monitoring all issues relating to rejuvenation of river Yamuna. It will also be open to the Chief Secretaries of U.P. and Haryana to have their own appropriate mechanism for monitoring. The Chief Secretaries of Delhi, U.P. and Haryana may place the mechanism so evolved before this Tribunal before the next date. On conclusion of proceedings of the YMC constituted by this Tribunal, the record and database may be taken over by the SPV and the Chief Secretaries, Delhi, Haryana and U.P.

List for further consideration on 14.05.2020.

A copy of this order be sent by e-mail to Governments of Delhi; Haryana; U.P; DDA; DJB; PWD, Delhi; all Municipal Corporations of Delhi; CPCB; Ministries of Urban Development and Jal Shakti, Govt. of India; NMCG; IIT Delhi; IIT Roorkee and NEERI.



Adarsh Kumar Goel, CP

S.P Wangdi, JM

Dr. Nagin Nanda, EM

Siddhanta Das, EM

March 05, 2020
O.A. No. 6/2012
A