Legal/OA673/2018/NMCG/2019/ Date: 19th June 2020

To,
The Registrar,
Hon'ble National Green Tribunal,
Faridkot House, Copernicus Marg,
New Delhi - 110 001

Subject: 1st Quarterly Report of Central Monitoring Committee constituted vide NGT order dated 29.11.2019 (uploaded on website on 06.12.2019) in the NGT Matter OA No. 673 of 2018

Sir/ Ma'am,

In compliance to the Hon'ble NGT Matter OA No. 673 of 2018 (News item published in "The Hindu" authored by Shri Jacob Koshy Titled "More river stretches are now critically polluted: CPCB") regarding 351 polluted river stretches, first quarterly report of the Central level Committee constituted under the Chairmanship of Secretary, DoWR, RD&GR, Ministry of Jal Shakti is enclosed herewith for kind information.

Enclosure: As above

Yours faithfully,

(D.P.Mathuria) 19.6.2020
Executive Director-Technical

FIRST QUARTERLY REPORT OF THE CENTRAL MONITORING COMMITTEE

CONSTITUTED VIDE

NGT ORDER DATED 29.11.2019

(UPLOADED ON THE NGT WEBSITE ON 06.12.2019)

IN THE MATTER OA NO. 673 OF 2018

NATIONAL MISSION FOR CLEAN GANGA

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION,

MINISTRY OF JAL SHAKTI,

GOVERNMENT OF INDIA, NEW DELHI

JUNE 2020

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NATIONAL MISSION FOR CLEAN GANGA

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION, MINISTRY OF JAL SHAKTI,

GOVERNMENT OF INDIA, NEW DELHI

IN THE MATTER OF OA No. 673 of 2018 - QUARTERLY REPORT ON BEHALF OF NATIONAL MISSION FOR CLEAN GANGA, MINISTRY OF JAL SHAKTI, IN TERMS OF NGT ORDER DATED 29.11.2019 (UPLOADED ON THE NGT WEBSITE ON 06.12.2019)

I. General:

In the matter OA No. 673 of 2018, vide order dated 29.11.2019 (which was uploaded on 06.12.2019), Hon'ble NGT has inter alia issued certain directions regarding remedial action to be taken for 351 polluted river stretches in the country, identified by the CPCB based on the analysis of the samples by the SPCBs under the National Water Quality Monitoring Programme. Besides others, the Ministry of Jal Shakti is a party in the matter.

II. The National Mission for Clean Ganga (NMCG) was made the nodal agency for monitoring compliance of the orders passed by the Hon'ble Tribunal and for furnishing the quarterly reports.

III. Directions of National Green Tribunal:

In the said order, the following directions were given:

a. 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28.08.2019 in O.A. No. 593/2017 by 31.03.2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide order dated 22.08.2019 in the case of river Ganga i.e. Rs. 5 lakhs per month per

drain, for default in in-situ remediation and Rs. 5 lakhs per STP for default in commencement of setting up of the STP.

b. Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31.03.2021 in terms of order dated 08.04.2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22.08.2019 in the case of river Ganga i.e. Rs. 10 lakhs per month per STP.

c. We further direct that an institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

d. For above purpose, a meeting at Central level must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

e. The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

f. Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

g. As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

h. Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

i. CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground

to delay the execution of the action plans prepared by the States which may start forthwith, if not already started.

j. The action plan prepared by the Delhi Government which is to be approved by the CPCB has to follow the action points delineated in the order of this Tribunal dated 11.09.2019 in O.A. No. 06/2012.

k. Since the report of the CPCB has focused only on BOD and FC without other parameters for analysis such as pH, COD, DO and other recalcitrant toxic pollutants having tendency of bio-magnification, a survey may now be conducted with reference to all the said parameters by involving the SPCB/PCCs within three months. Monitoring gaps be identified and upgraded so to cover upstream and downstream locations of major discharges to the river. CPCB may file a report on the subject before the next date by e-mail at judicial-ngt@gov.in.

l. Rivers which have been identified as clean may be maintained.

IV. Status of Compliance with regard to the NGT order dated 29.11.2019:

V. Monthly Meetings of Monitoring Committee:

That, since NMCG was made the nodal agency, the meeting at Central level with the States were held on 08.01.2020 and 19.02.2020 under the Chairmanship of Secretary, DoWR,RD&GR, Ministry of Jal Shakti. Third meeting of the Committee was scheduled on 26.03.2020, which was postponed due to lockdown in India to prevent spread of COVID-19. Minutes of the two meetings of the Committee are placed at **Annexure –I and II.**

In the meetings, Secretary, DoWR, RD&GR, Ministry of Jal Shakti stressed that for river rejuvenation, establishment of only STPs may not be sufficient. The States may also take measures for management of solid waste and work for restoration of floodplains, groundwater recharge and augmentation through rain water harvesting, emphasis on development of policy for recycle and reuse of water/ treated water, industrial waste remediation and by developing biodiversity parks along the banks of the river, which will help in augmenting the flow in rivers.

Further, the States were directed to submit Action Plans for the stretches falling under the category of **priority III and IV** to CPCB at the earliest for approval. They were

also directed to submit Monthly Progress Report (MPR) by 20th of every month to NMCG and a format in this regard was circulated along with the minutes of the meeting.

During the meeting, a number of States (Assam, Maharashtra, Madhya Pradesh, Odisha) informed that based on the recent water quality analysis by State Pollution Control Board, number of polluted river stretches in each of the category have changed or reduced and in some cases have become non-polluted stretches. The States were recommended to approach Hon'ble NGT for effecting revisions in priority categorization of polluted stretches.

Third meeting of Monitoring Committee is scheduled on 23rd June 2020 under chairmanship of Secretary, Department of Water Resources, River Development and Ganga Rejuvenation.

VI. 1st Field Visits to States by Officials of Jal Shakti Ministry:

It is to submit that in compliance to the decisions taken in the first meeting held on 08.01.2020, officials from National Mission for Clean Ganga (NMCG), National River Conservation Directorate (NRCD) and Central Pollution Control Board (CPCB), during the period from 30.01.2020 to 07.02.2020, had visited 5 States – Assam (44 polluted river stretches), Gujarat (20 polluted river stretches), Maharashtra (53 polluted river stretches), Madhya Pradesh (22 polluted river stretches) and Telangana (8 polluted river stretches) to review the status of pollution, available sewerage infrastructure and existing/ futuristic gap.

The major findings/ observations during the visit were highlighted in the second meeting held on 19.02.2020 to all the States through Video Conferencing. Further, the detailed site visit reports along with the observations and recommendations were shared with the Chief Secretary of the respective States for consideration and necessary actions at their end. Copies of the DO letter from Secretary (Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti) and are placed at **Annexure – III to VII.**

Findings of the Team:

Major findings of the various teams during the visits to the States are highlighted below:

i. Based on the recent water quality analysis by State Pollution Control Board, number of polluted river stretches in each of the category have changed or reduced and in some cases have become non-polluted stretches.

ii. For peninsular river/ non-glacier fed rivers, even after implementation of action plans through sewerage projects, the priority stretches may not change as dilution/ freshwater water may not be available during lean season.

iii. For sewerage infrastructure (STP) creation, either DPRs have been prepared or projects have been sanctioned or are under tendering or under construction. However, the timelines for implementing many of them do not conform to the NGT timelines of March 2021. State wise details of STPs and CETPs proposed towards abatement of pollution and their timelines is given Section- XII.

iv. Implementation of number of STPs in Gujarat is constrained due to land issues. Similar situation may also be prevailing in other States/ locations which will be reviewed in next meetings.

v. Maharashtra PCB is providing technical/ financial assistance for Rs. 900 crore in respect of solid and liquid waste management for gram panchayats and smaller villages not covered under AMRUT/ other State schemes. This may be replicated in other States also.

vi. In case of Assam, a number of polluted stretches are actually in lakes and water bodies.

vii. In case of Gujarat, performance of many existing STPs is an issue (non-complaint) and a number of CETP projects are under-construction.

viii. States have problem in implementation of bio-remediation projects due to lack of availability of vendors, non-availability of standard rates and large discrepancies in quoted amounts, absence of technical assistance and knowledge on the issue.

ix. It has been reported that most of the industries are complying and are working under ZLD conditions, so their contribution toward pollution has been reported as NIL in Maharashtra. In case of other states, industries were reported to be largely compliant without ZLD.

x. The discharge from many of the towns coming through drains is not reaching to the rivers and is being utilized for irrigation purposes in Maharashtra. In some case these

drains are also classified as rivers.

xi. States have not explored Faecal Sludge Management as one of the alternatives.

VII. 2nd Field Visits to States by Officials of Ministry of Jal Shakti:

Further during the period from 02.03.2020 to 07.03.2020, teams of officials from NMCG, NRCD and CPCB had visited 7 States – Haryana (2 polluted river stretches), Karnataka (17 polluted river stretches), Kerala (21 polluted river stretches), Meghalaya (7 polluted river stretches), Nagaland (6 polluted river stretches), Punjab (4 polluted river stretches) and Tamil Nadu (6 polluted river stretches).

Findings of the Team:

Major findings of the teams during the visits are highlighted below:

a. Despite having sufficient sewage treatment capacity in Haryana, the water quality in drains is observed to be poor, which shows either STPs are not operating properly or the sewage is being directly bypassing into the drains.

b. The dyeing sector of Ludhiana in Punjab is discharging treated/ untreated effluent into Budhanalla, which merges with River Satluj. The flow of river Satluj is impounded downstream at Harike Barrage, from where the feeder canal to Rajasthan carries water for drinking. This canal water is found to have traces of textile/ dyeing effluent, which may cause serious health risks to the residents.

c. In Tamil Nadu, non-perennial Rivers Vasista and Thirumanimuthar were observed to carry only wastewater discharges from the drains. Further, when there is no flow in the two rivers, samples from the piezometric installed in nearby wells or bore-wells are collected, which are not the representative samples and do not show the actual health of the River.

Utilisation of STP capacity was observed to be very low in Erode, Salem and Tirunelveli. Further, all the Industries were reported to be operating at ZLD. However, during the site visit industrial wastewater inflow was observed in STP at Salem.

d. Due to prolonged monsoon season-almost 7 months (from April to October) in Nagaland, the season of work is only between November to March. Solid waste management in the State is very poor.

e. In Kerala, River Killiyar which carries discharge from maximum number of drains

and was observed to be more polluted than River Karamana, and the same was not being monitored by the SPCB. Further, as per progress report, most of short term action plans have completion date of May 2020, however most of action plans are either showing slow progress or still is under tendering. There are no concrete efforts on proper collection, waste segregation and final disposal of different solid wastes in the State.

f. Similarly, in Karnataka, River Vrishabhavathy contributes to 576 MLD of sewage from Bengaluruis not monitored by SPCB and not included in the list of polluted river stretches. The proposal for sewerage infrastructure in the action plan of Karnataka has been prepared taking 2011 as the base year. Further, there are proposals for Under Ground Drainage (sewerage networks), which takes long time in execution and also are ineffective due to missing links and low number of house connections.

g. DPR is under-preparation for carrying out bio-remediation on the drains in Meghalaya.

h. A few States have policies for recycle and reuse of treated effluent such as Haryana, Gujarat, Maharashtra and Tamil Nadu.

Detailed site visit report along with observations and recommendations are placed at **Annexure –VIII to XIV**.

VIII. Next Proposed Field Visits:

Similar site visit of team of officials from NMCG, NRCD and CPCB to remaining States for reviewing the progress and ground situation, were proposed to be carried out in the following months, however due to COVID-19 pandemic, the same has been postponed and shall be carried out after normalization of the situation. The appraisal of works in remaining States will be undertaken after normalization of COVID situation.

IX. **Monthly Progress Reports**: Details of Monthly Progress Reports (MPRs) received from the States (as on 12th June 2020) are as below:

No.	STATE	January	February	March	April
1	ANDHRA PRADESH				
2	ASSAM	Yes	Yes		
3	BIHAR			Yes	
4	CHHATTISGARH	Yes	Yes		
5	DAMAN, DIU AND DADRA NAGAR HAVELI		Yes		
6	DELHI	Yes	Yes		
7	GOA				
8	GUJARAT	Yes	Yes	Yes	Yes
9	HARYANA	Yes	Yes		
10	HIMACHAL PRADESH	Yes	Yes		
11	JAMMU & KASHMIR	Yes	Yes		
12	JHARKHAND				
13	KARNATAKA				
14	KERALA	Yes			
15	MADHYA PRADESH	Yes			
16	MAHARASHTRA	Yes			
17	MANIPUR				
18	MEGHALAYA	Yes	Yes		
19	MIZORAM	Yes	Yes	Yes	
20	NAGALAND	Yes			
21	ODISHA		Yes	Yes	
22	PUDUCHERRY	Yes	Yes	Yes	
23	PUNJAB	Yes	Yes	Yes	Yes**
24	RAJASTHAN				
25	SIKKIM	Yes			
26	TAMIL NADU		Yes		
27	TELANGANA		Yes	Yes	
28	TRIPURA	Yes		Yes	
29	UTTAR PRADESH	Yes	Yes	Yes	Yes
30	UTTARAKHAND				
31	WEST BENGAL		Yes		

***As per Punjab State, due to lockdown, no progress have been made, hence the status of MPR remains same as March.*

Further, State-wise MPRs received will be uploaded on website of NMCG.

X. Even after repeated reminders during the meetings of the Committee and through various communications, MPR from the States of Andhra Pradesh, Goa, Jharkhand, Karnataka, Manipur, Rajasthan and Uttarakhand have not been received at NMCG till

date. Due to absence of response from these States in form MPR, the progress of activities for these States could not be monitored by Committee.

XI. Monitoring mechanism set up by States:

In the MPRs, the States have informed that monitoring mechanism has been set up under Chief Secretary Level and regular meetings are being held to monitor the progress at State level. Further, Nodal officer(s) have also been identified for coordination and their details have also been shared by them. Accordingly, the directions of Hon'ble NGT in so far as creation of institutional mechanism for monitoring the progress of implementation of activities as per approved Action Plans have been complied. This will be continued to be updated during subsequent rounds of monthly monitoring under Secretary(Water Resources, River Development & Ganga Rejuvenation).

States have failed to report reasons for delay in grounding the projects as well identification of officials responsible for the delays. The necessary reporting from the States will be taken up in next review meetings.

XII. State-wise Status of Projects:

It is to bring to the notice that based on the submissions made by the States in their Action Plan and the Monthly Progress Report (MPR), few States may not be able to adhere to the timeline(s) directed by Hon'ble NGT for completion of projects by 31.03.2021. State-wise details of projects proposed or under-construction are as follows:

1. Andhra Pradesh

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects is not known. However, the details of projects proposed or under-construction as per the Action Plan is as below:

- Two STPs of 2 MLD each are under-construction for pollution abatement works of river Krishna.
- A 10 MLD STP is proposed to be constructed under AMRUT for Nandyal town.
- STP proposed for Kurnool town.
- STP proposed for Rajahmundry town.
- STP proposed for the Srikakulam town.

Industrial waste management:

MPR has not been received from the State. Details of CETP and other measures have not

been provided in the Action Plan.

2. Assam

Municipal Sewage management:

Status of STP projects as per the Action Plan and the MPR submitted by the State

S.No	Towns/ River	Proposed STP	Completion Timeline as per the Action Plan	Remarks of Committee
1.	Guwahati -Bharalu river	3 STPs of 75 MLD	July 2021	Timelines spill beyond directions of NGT.
2.	Guwahati- Borsola Beel	15 MLD	2.5 years	
3.	Guwahati – Silisako Beel	45 MLD	3 years	
4.	Tezpur	23 MLD	May 2021	
5.	Silchar - Barak River	76 MLD	May 2021	
6.	Badarpur - Barak River	17.8 MLD	May 2021	
7.	Nagaon– Kolong River	16 MLD	May 2021	
8.	Digboi	5 MLD	March 2021	
9.	Jorhat	35 MLD	May 2021	
10.	Mangaldoi town – Bega River	3 MLD	May 2021	
11.	Golaghat, Dhansiri River	4.6 MLD	May 2021	
12.	Sibsagar town – Dikhow River	5.5 MLD	May 2021	
13.	Amguri area – Jhanji River	1 MLD	May 2021	
14.	Sonai River	1 MLD	May 2021	
15.	Nalbari town-Pagladia	3.5 MLD	May 2021	

Industrial waste management:

As per the MPR, there is only one major industry namely, Guwahati Refinery, IOCL and it has installed ETP and online monitoring system. Status of other small industries is as below.

No.	River	Industries	ETP Status	CETP Status
1	Bharalu	31	25 functional ETPs. 3 STPs installed in 3 units.	NIL
2	Borsola	20	16 functional ETPs	NIL
3	Silsako	1	1 functional ETP	NIL
4	Sorusola	20	16 functional ETPs	NIL
5	Deepar bill	9	8 functional ETPs	NIL
6	Digboi	2	2 functional ETPs	NIL
7	Barak	7	All have functional ETPs	NIL
8	Bega	8	3 have ETPs	NIL
9	Bhogdoi	28	17 have functional ETPs	NIL
10	Burhidihing	16	5 have functional ETPs	NIL
11	Dhansiri	30	16 functional ETPs	NIL
12	Dikhow	17	7 functional ETPs	NIL
13	Jhanji	15	7 ETPs functional. 6 do not require	NIL
14	Kalong	22	5 functional ETPs. 17 – Primary Treatment System.	NIL

Functioning of these ETPs and their compliance status will be monitored during subsequent meetings.

3. Bihar

Municipal Sewage management:

Status of STP projects as per the MPR submitted by the State

No.	Project	Project Status	Completion Timeline	Remarks of Committee
1.	Pahari STP	Ongoing	December 2020	
2.	Pahari Sewerage Network Zone IV_A(S)	Ongoing	December 2020	
3.	Pahari Sewerage Network Zone V	Ongoing	December 2020	
4.	Beur STP	Ongoing	March, 2020	
5.	Beur Sewerage Network	Ongoing	December 2020	
6.	Karmalichak Sewerage Network	Ongoing	December 2020	

7.	Saidpur STP & Adjoining Network	Ongoing	June, 2020	
8.	Saidpur Sewerage Network	Ongoing	December, 2020	
9.	Digha STP and Sewerage Scheme	Ongoing	December 2022	Timelines spill beyond directions of NGT.
10.	Kankarbagh STP and Sewerage Scheme	Ongoing	December 2022	
11.	Phulwarishariff I&D and STP	Tendered	December 2021	
12.	Sultanganj I&D and STP	Ongoing	December, 2020	
13.	Barh I&D and STP	Ongoing	December, 2020	
14.	Naugachhia I&D and STP	Ongoing	December, 2020	
15.	Mokama I&D and STP	Ongoing	December, 2020	
16.	Sonepur I&D and STP	Ongoing	December, 2020	
17.	Maner I&D and STP	Ongoing	June, 2021	Timelines spill beyond directions of NGT.
18.	Bakhtiyarpur I&D and STP	Ongoing	June, 2021	
19.	Bhagalpur I&D and STP	Tendered	June, 2022	
20.	Hajipur STP and Sewer Network	Tendered	December 2022	
21.	Chhapra I&D and STP	Ongoing	December 2021	
22.	Buxar STP and Sewer Network	Tender to be floated.	December 2022	
23.	Begusarai STP and Sewer Network	Ongoing	June, 2022	
24.	Danapur I&D and STP	Tendered	December 2021	
25.	Khagaria I&D and STP	Tendered	December 2021	
26.	Munger STP and Sewer Network	Tendered	December 2022	
27.	Barahiya I&D and STP	Sanctioned	June, 2022	
28.	Kahalgaon I&D and STP	Sanctioned	June, 2022	
29.	Fatuha I&D and STP	Tendered	December 2021	
30.	Dighwara I&D and STP	Proposed	December 2021	
31.	Teghra I&D and STP	Proposed	December 2021	
32.	Manihari I&D and STP	Proposed	December 2021	
33.	Jamalpur I&D and STP	Proposed	December 2021	
34.	Khagaul I&D and STP	DPR is under preparation	December 2021	

Industrial waste management:

As per the Action plan and MPR, the State is contemplating to have following CETPs for the industrial areas:

- Fatuha - 02 MLD in Patna

- Barari - 01 MLD in Bhagalpur
- Hajipur - 06 MLD in Vaishali
- Bela - 05 MLD in Muzaffarpur).

Environmental Clearance (EC) has been accorded by SEIAA for aforesaid proposed CETPs in Bihar. However, completion timelines of the projects have not been provided.

4. Chhattisgarh

Municipal Sewage management:

As per MPR, all the STP projects are expected to be completed by 31.03.2021 and the status is as below:

- Work in progress for 75 MLD STP at Chandandih (AMRUT)
- Work in progress for 35 MLD STP at Kara in progress (AMRUT)
- Work in progress for 90 MLD STP at Nimora in progress (AMRUT)
- Work in progress for 06 MLD STP at Bhatagaon in progress (by MC Raipur)
- DPR for 35 MLD STP for the Korba town prepared.
- DPR for 7.7 MLD STP for the Kanker town prepared.
- DPR for 19.6 MLD STP for the Dhamtari town prepared.
- DPR for 7.6 MLD STP for the Nawapara town prepared.
- DPR for 2.8 MLD STP for the Rajim town prepared.
- DPR for STP of 2.8 MLD capacity for Simga town prepared.
- 2 STP's of 25 MLD and 07 MLD capacities are proposed for the Raigarh town.

Industrial waste management:

As per MPR, there is no existing CETP in the State. Industries situated in the polluted river stretches are up-grading their existing captive ETPs and constructing new ETPs as and when required.

5. Daman, Diu and Dadra Nagar Haveli

Municipal Sewage management:

- As per the Action Plan, a 14 MLD STP with completion timeline of December 2019 is under construction in Vapi Gujarat and a 29 MLD STP is under planning stage. Updated status of the projects not provided in the MPR. It will be obtained in next meetings as timeline of December 2019 is already over.
- In Nani Daman, work is in progress for establishment of 16 MLD STP and sewerage network system. Further, modular STPs at gram panchayat level are proposed. The STPs are expected to be completed by March 2021 as per the MPR.

Industrial waste management:

As per the MPR, industries situated in Daman and Dadra Nagar Haveli, all the wastewater generating industries have installed ETPs and are recycling the water in the plant. There are no CETPs in Daman and Dadra Nagar Haveli.

6. Delhi

Municipal Sewage management:

As per the MPR, Rehabilitation works of following STPs are under progress:

- STP at Coronation, expected completion of Phase I, II, III by October 2020

Projects whose timelines spill beyond directions of NGT

- STP at Kondli, expected completion of Phase I & III by June 2021 and Phase II by July 2022
- STP at Rithala, expected completion by June 2022
- STP at Yamuna Vihar, expected completion of Phase II by March 2022
- STP at Okhla, expected completion of of Phase I, II, III, IV by December 2022

Following STPs are proposed:

- 14 (7+7) STPs in Najafgarh Drainage Zone. Timeline for completion of these projects is 18 to 30 months after approval of funding and allotment of land.
- 42 decentralized STPs at various locations. Timeline for completion of these projects is 24 to 36 months after allotment of land

Industrial waste management:

As per the MPR, there are 13 CETPs with total capacity of 212.3 MLD to cater the waste water generated from 17 industrial areas. 53.4 MLD effluent is reaching to the CETPs.

7. Goa

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects not known. Details of projects proposed or under-construction as per the action plan is as below:

- Three STP's are proposed at Curti, Kavelem and Bandora of capacity 8 MLD, 15 MLD and 15MLD respectively.

Industrial waste management:

- River Khandepar: 2 units in catchment area have their own ETPs for treatment of wastewater and the discharge is being reused.
- River Mandoni: Corlim Industrial Estate is located in the area. However there is no discharge from the units in to the River. Deccan fine chemicals is having the Effluent Treatment facility and discharging the treated waste water into Cumbarjua canal with valid consent to Operate.

8. Gujarat

Municipal Sewage management:

Status of STP projects as per the MPR submitted by the State:

No.	River	STP projects Proposed or under-construction	Expected time line	Remarks of Committee
1	Sabarmati	Pirana -155 MLD	May-2020	
2		Shankar Bhuvan - 25MLD. Trial run started	Mar-2020	
3		Dafnala - 25 MLD. Land under approval of Cantonment.	Mar-2021	Timelines spill beyond directions of NGT
4		Kotarpur - 60 MLD	-	
5	Khari	Vinzol - 100 MLD	Dec-2020	
6	Bhadar	23.5 MLD STP at Jetpur – Navagadh Nagarpalika	Apr-2020	
7	Bhogavo	Vadhwan - 12.1 MLD. Land proposal at revenue level.	Mar-2021	
8	Amlakhad	Ankleshwar - 14MLD	Mar-2021	
9	Vishwamitri	Kapurai (new) (STP+ Network) (60 MLD) Land Issues (Rising Main)	Dec-2020	
10		Sayaji garden (7.5 MLD)	Mar-2021	
11		Channi (New) (STP+ Network) - 50 MLD. Land issue.	Dec-2021	Timelines spill beyond directions of NGT
12		Atladara (new) (24 MLD) VMC(P)	Dec-2021	
13		Tarsali / GIDC (new) (20 MLD STP + Network). Land Issues (Rising Main)	Dec-2021	
14	Mindhola	STP (2 MLD + 2 MLD)	2020	
15	Dhadhar	Karjan STP - 5.2 MLD	Mar-2021	Timelines spill beyond irections of NGT
16	Kolak	Gunjan (10 MLD) VPAA. Land Issue	2020	
17	Anas	Dahod STP - 13.7MLD	Oct-2020	

18		Zalod STP - 4.6 MLD	Oct-2020	
19	Damanganga	Vapi Namdha STP - 14 MLD	Sep–2020	
20		VapiChandor STP - 29.53 MLD. Land proposal at revenue level	May-2021	Timelines spill beyond directions of NGT
21		5 MLDSTP VNAA	September-2021	
22	Shedhi	To Channel untreated sewage into STP (Nadiad)	Feb-2021	
23		Kheda STP - 5.2 MLD	Feb-2021	
24	Tapi	Total 37 STPs. Land Issues to be resolved.	Feb-22 to Dec-22	Timelines spill beyond directions of NGT

Industrial waste management:

Status of CETP projects as per the MPR submitted by the State:

River	Name of CETPs Existing/ New	Proposal submitted in Action Plan	Timeline
Sabarmati	Green Environment Co-Operative So. Ltd., (GECSL)	Proposed Expansion : 16 to 35 MLD	Dec-2020
	Naroda Enviro Projects Ltd. (NEPL)	Proposed Expansion from 3 to 14 MLD	Feb - 2020
	Odhav Enviro Projects Ltd. (OEPL)	Upgradation:- Proposed Spray Dryer	Mar-2020
	Narol Dyestuff Enviro Society (NDES)	Proposed Expansion from 0.03 upto 0.45 MLD	Mar-2020
	Narol Textile Integrated Enviro Management (NTIEM)	Proposed Expansion 100 to 130 MLD	Mar-2020
	Gujarat Vepari Mahamandal Sahakari Audhyogik Vasahat Ltd (GVMM)	No expansion proposed	---
	Odhav Green Enviro Project Ltd (OGEPL)		---
	Ahmedabad Hand Screen Printing Association (AHSPA)- Danilimda	Proposed New CETP of 30 MLD	Dec 2021
Bhadar	Jetpur Dying & Printing Association (JDPA)	Proposed Up gradation – 23.5 MLD	Apr- 2020
	Shri Dhareshwar	Proposed Modification	Completed

	JDPA (20 MLD) at Monpar-Derdi	Proposed New CETP	Dec - 2020
	Shifting of washing ghats	Shifting of washing ghats	Apr- 2020
Baleshwar	Gujarat Eco Textile Park Ltd,- GETPL, Palsana	Proposed Up gradation	2021
	New Palsana Industrial Co-Op. Soc. Ltd	No expansion proposed	--
Damanganga	CETP Vapi (VGEL)	Proposed Expansion 55 to 70 MLD	March 2020
	GHCL, Sarigam	No expansion proposed 2.5 MLD	--
Shedhi	Mafatlal Ind. Ltd.	Up gradation of ETP (5 MLD)	
	CETP Nadiad	Proposed New CETP (0.5 MLD)	Dec - 2020

9. <u>Haryana</u>

Municipal Sewage management:

Status of STPs under construction in the catchment area of River Yamuna (Haryana) as per the MPR received from the State:

No.	Name of town/city	Capacity (MLD)	Completion Timeline	Remarks of Committee
1.	Shiv Colony, Karnal	8	30.10.2020	
2.	Phooshgarh, Karnal	20	31.12.2020	
3.	Transport Nagar, Karnal	50	30.06.2020	
4.	GarhiBohar, Rohak	12	31.12.2020	
5	Singhpura, Rohtak	10	31.12.2020	
6	Peer Bodhi, Rohak	15	30.06.2021	Timelines spill beyond directions of NGT
7	SaraiAlawardi	1	29.02.2020	
8	GadoliKalan	1	29.02.2020	
9	Baliawas (against Gwalpahadi)	1	31.07.2020	

10	Jajzgarh (against Khiwari, Gurugram)	10	30.11.2020	
11	Mohmadpur Jharsa	2	30.11.2020	
12	Darbaripur	1	31.07.2020	
13	Sector-21, Faridabad	10	31.07.2021	Timelines spill beyond directions of NGT
14	Faridabad (New)	7.5	30.04.2020	
15	Kithwari (against Ferozpur, Palwal)	10	30.11.2020	
16	Jodhpur Road, Palwal	15	31.07.2020	
17	Ferozpur, Palwal	2.5	31.08.2020	

Status of STPs proposed in the catchment area of River Yamuna (Haryana) as per the MPR received from the State.

No.	Name of the district	Capacity (MLD)	Date Completion	Remarks	
1.	Gurugram	10	31.12.2023	DPR under preparation	Timelines spill beyond directions of NGT
2.	Gurugram	50	31.12.2022	DPR under preparation	
3.	Sonepat	15	31.12.2020	__	
4.	Rohtak	10	31.12.2020	__	
5	Faridabad	30	31.12.2020	__	
6	Gurugram	2	31.12.2020	__	
7	Gurugram	2	31.12.2020	__	
8	Faridabad	80	31.12.2021	DNIT under preparation	Timelines spill beyond directions of NGT
9	Faridabad	100	31.12.2021	DNIT under preparation	
10	Sonepat	3	31.03.2021	Tender invited	
11	Gurugram	1	31.10.2020	Tender invited	

Ghaggar River

Status of STPs under construction in the catchment area of River Ghaggar (Haryana)

No.	Name of the Town	Capacity (in MLD)	Timelines proposed as per Action Plan
1.	12 Cross Road, Ambala	12	31.06.2020
2.	Khagesara & Toka	0.5	31.03.2020
3.	Nangal & Allipur	0.5	31.03.2020
4.	Khatoli	0.75	31.03.2020
5	Kot	0.75	31.01.2020
6	Sukhdarshanapur	0.75	31.03.2020
7	Billa	0.75	31.12.2020
8	Village Dabra	8	31.03.2020
9	Ambala	5	31.03.2020
10	KhudaKhurd, Ambala	12	31.06.2020
11	Bhuna	8	30.06.2020

Status of STPs proposed in the catchment area of River Ghaggar (Haryana)

No	Name of the district	Capacity (MLD)	Completion Timeline	Remarks of Committee
1	Ambala	5	31.12.2021	Timelines spill beyond directions of NGT
2	Ambala	1	30.09.2022	
3	Panchkula	8	30.4.2023	
4	Jind	5	30.06.2023	
5	Hisar	5	30.06.2025	
6	Hisar	10	31.3.2024	
7	Hisar	5	30.06.2024	
8	Sirsa	7.5	30.06.2023	
9	Ambala	10		
10	Ambala	5		

Industrial waste management:

Status of CETPs in the catchment area of River Ghaggar (Haryana) as per the MPR received from the State:

No.	Town	Existing CETP Capacity in MLD	Proposed CETP Capacity in MLD	Expected Completion by
1.	Panchkula	0.5	0	-
2.	Ambala	5.5	0	-

3.	Jind	0.1	1.5	30.06.2020
4.	Sirsa		1.5	30.06.2020
	Total	**6.1**	**3**	

Status of CETPs in the catchment area of River Yamuna (Haryana) as per the MPR received from the State:

No.	Town	No. of CETPs	Existing CETP Capacity in MLD	No. of Proposed CETPs	Proposed CETP Capacity in MLD	Expected Completion by
1.	Panipat	2	42	0	0	
2.	Sonipat	4	25.2	0	0	
3.	Rohtak	2	13	0	0	
4.	Jhajjar	1	12.5	1	10	31.12.2021
5.	Gurgaon	2	55.2	3	11.25	31.12.2021
6.	Faridabad	2	10.8	3	96	31.12.2021
7.	Yamuna Nagar	0	0	1	3	31.12.2021
	Total	**12**	**158.7**	**8**	**120.25**	

10. <u>Himachal Pradesh</u>

Municipal Sewage management:

As per MPR, all the STP projects are expected to be completed by March 2021 and the status is as below:

- For Parwanoo city, 2 STPs of 1 MLD each are proposed for which land has been finalized. Financial bid assessment is under progress and works will be completed by December 2020.
- 2 STPs of 1.7 MLD for Kala Amb & Moginand area and 1.5 MLD for Trilokpur area along with laying of sewer network is proposed for which contract was awarded on 07.03.2020 and will be completed by December 2020.
- For Shimla town, 3 STPs at Dhalli, Malyana & Lalpani are being upgraded under AMRUT and will be completed by March 2021. 1 STP of 2 MLD capacity at Panthagati area is proposed for which tenders have been called and is scheduled for completion by March 2021.
- DPR for septage management under AMRUT sub-mission has been prepared and shall be completed within 12 months after receipt of funds.
- Laying of sewer network in Marhi is complete and work for construction of STP is in progress.
- The work for up gradation of STPs in Zone I & II in Kullu has been awarded under AMRUT scheme.
- The proposal for up gradation of STPs in Zone III, Kullu & Bhunter (Zone III) is under

process. The work is not awarded due to non-availability of funds. Expansion of existing STP & new STPs in Manali, Mandi & Dehra are proposed.

Industrial waste management:

As per the MPR, there is 1 CETP at Baddi which is receiving around 17-17.5 MLD of effluent in the state. A CETP of 5 MLD capacity at Kala Amb is proposed with a completion timeline of January 2022 (as per the action plan for Phase-I of the project).

11. Jammu& Kashmir

Municipal Sewage management:

As per the MPR, following projects are under-progress:

- In Udhampur town, 3 STPs having capacity of 8, 4 and 1.6 MLD are under implementation for pollution abatement of River Devika.
- In Katra town, 2 STPs of 1.10 and 3.50 MLD capacity proposed by UEED and 1 STP of 400 KLD capacity proposed in Adh Kumari by SMVD.
- In Jammu, a 4 MLD STP and sewerage network is under implementation.
- At Samba, a project with STP of 6 MLD has been sanctioned.
- For Akhnoor town, a 3 MLD STP proposed by HUDD Department.
- For Srinagar, 2 STPs of 4.0MLD and 5MLDproposed.
- A 3.5 MLD STP proposed for sewage from Gawkadal to Nowhata.
- A 4 MLD STP proposed for Gander Bal.
- Municipal Bodies proposed 14 MLD STP at Anantnag, 3 MLD at Bijbehara, 1.6 MLD at Awantipora and 2.7 MLD at Pampore.

However, estimated completion timeline for the projects have not been mentioned. The progress will be appraised in next meeting.

Industrial waste management:

As per the Action Plan, 1 MLD CETP for IGC – Samba was proposed to be constructed within 6 months.

12. Jharkhand

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects not known. Details of projects under-construction as per the action plan are as below:

- 37 MLD STP in Ranchi Muncipal Corporation (Zone – 1) by Dec-2019
- 36 MLD STP in Adityapur Muncipal Corporation by May 2020
- 12 MLD STP in Sahibganj nagar parishad by August 2019
- 3.5 MLD STP in Rajmahal Nagar Panchayat by June 2020

Details of projects proposed as per the action plan are as below:

- Mango Municipal Corporation – 43 MLD STP
- Jugsalai Nagar Parishad – 8.5 MLD STP

- Ranchi Municipal Corporation (Zone -2,3,4) – 380 MLD STPs
- Dhanbad Municipal Corporation – 84 MLD STP
- Phusro Nagar Parishad – 14 MLD STP

Industrial waste management:

MPR has not been received from the State and as per the Action Plan the wastewater generating industries have installed ETPs and the liquid discharge from them is within the prescribed norms as per the monitoring data of the Pollution Control Board.

13. <u>Karnataka</u>

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects not known. Details of projects proposed or under-construction as per the action plan is as below:

River Name	Local Bodies	Capacity of STP	Status of STP
Arkavathi	V. Valley, Nayandahalli	150 MLD	Work under progress. Completion by July 2020.
Lakshmantirtha	Hunar town	7.5 MLD	Proposed
Malaprabha	Ramadurga	2 STPs of 4.3 MLD	Proposed
	Khanpur	2 MLD	Proposed
	Saundatti	2 STPs of 9 MLD	Proposed
	Mugat Khan Hubli	3 MLD	Proposed
	Munavalli	8 MLD	Proposed
Tungabhadra	Harihara	18 MLD	Under Construction
Cauvery	Narasipura	5 MLD	Work under progress
Kagina	Shahabad	13.50 MLD	Proposed
Kali	Dandeli	8.5 MLD	Proposed
Krishna	Ugarkurd	3 MLD	Proposed
	Kudachi	4.62 MLD	Proposed
	Examba	4 MLD	
	Chinchali	4 MLD	
	Ainapur	4 MLD	
Krishna (Asangi barrage)	Rabakavi-Banahatti	9.2 MLD	Work under progress
	Terdal	3 MLD	Proposed
Bhima	Jewargi	3.25 MLD	Work under progress
Netravathi	Bantwal	4.4 MLD	Not yet

	Belthanagady	1.0 MLD	Constructed
	Uppinangadi	2.0 MLD	
Tunga		5.13 MLD	Proposed

Industrial waste management:

MPR has not been received from the State and as per the Action Plan there are 2 CETP in Bengaluru having capacities of 300KLD & 40 KLD respectively. Further, following 3 CETPs were proposed to be constructed within 2 years:

- 200 KLD CETP at Peenya Industrial Area
- 50 KLD CETP at Bidadi Industrial Area
- 50 KLD CETP at Harohalli Industrial Area

14. <u>Kerala</u>

Municipal Sewage management:

- As per MPR, 5 MLD STP at Medical college is under construction in Thiruvananthapuram city (Karamana River stretch in Priority – I) and expected to be completed by May 2020.
- Details about remaining river stretches not provided in the Action Plan neither in the MPR.

Industrial waste management:

- As per the Action Plan, 2 industrial units are existing in the catchment area of River Karamana, and individual ETPs are installed at both the units for treatment of generated waste water.
- Details about remaining river stretches not provided in the Action Plan neither in the MPR.

15. <u>Madhya Pradesh</u>

Municipal Sewage management:

Status of STP projects as per the MPR submitted by the State

No.	River/ Town	Under-construction STP	Proposed STP	Completion Timeline	Remarks of Committee
1.	Khan River	5 STPs of 67 MLD		March 2020	
2.		10 MLD		December 2020	
3.	Kshipra River	92.5 MLD		December 2020	
4.	Chambal		16 MLD	December 2022	Timelines spill beyond directions of NGT
5.	Mandideep – Betwa		2 STPs of 3 MLD	December 2022	
6.	Bhopal - Betwa	4 STPs of 66.5 MLD		December 2022	

7.	Vidisha – Betwa River	22.25 MLD		December 2020	
8.	Sone River	2 STPs of 2.25 MLD			
9.	Burhanpur – Tapti River	21 MLD		March 2020	
10.	Bichia River	7 STPs of 25 MLD		December 2021	Timelines spill beyond directions of NGT
11.	Katni	3 STPs of 24.5 MLD		December 2021	
12.	Maleni River		5 MLD	December 2021	
13.	Mandakini River	4.7 MLD		December 2021	
14.	Newaj River		5 MLD	December 2021	
15.	Waiganga River		2.5 MLD	December 2021	

Industrial waste management:

Status of CETP projects as per the State visit

No.	River/ Town	Existing	Under-construction or Proposed STP	Completion Timeline
1.	Khan River	4 MLD CETP		
2.	Chambal		11.5 MLD CETP	January 2021

16. <u>Maharashtra</u>

Municipal Sewage management:

Status of STP projects as per the MPR submitted by the State

No.	City/ Municipal Council	Under-construction STP	Proposed STP	Completion Timeline	Remarks of Committee
1.	Nanded	10 MLD	-	December 2021 (for future)	Timelines spill beyond directions of NGT
2.	Nashik	32 MLD	-	March 2021 (for future)	

3.	Paithan		7.50 MLD	March 2022	Timelines spill beyond directions of NGT
4.	Gangakhed	2 STPs of 5 MLD	-	December 2020	
5.	Vadawali	-	21 MLD STP	2022	
6.	Roha	-	Ps of 4 and 1 MLD	March 2022	Timelines spill beyond directions of NGT
7.	Greater Mumbai	-	8 STPs of 2484 MLD	2025	
8.	Akola	2 STPs of 37 MLD	-	June 2020	
9.	Pune	-	12 STPs of 416 MLD	2023	Timelines spill beyond directions of NGT
10.	Pandharpur	-	5 MLD STP.	2021 (for future)	
11.	Phaltan	-	2 STPs of 8 MLD	-	
12.	Pimpri-Chinchwad	12 MLD STP	15 MLD STP	-	
13.	Alandi	-	4 MLD STP. Land constraint.	STP to be completed within 6 months.	
14.	Desaiganj	-	DPR under preparation	-	
15.	Gadchiroli	-	11.5 MLD STP	-	
16.	Bramhapuri	-	7 MLD STP	-	
17.	Bhandara	-	15 MLD STP	-	
18.	Pauni	-	7.0 MLD STP	-	
19.	Ballarpur	-	2 STPs of 16 MLD	-	
20.	Rajura	-	5.5 MLD STP	-	
21.	KanhanPimpri	-	8 MLD STP	-	
22.	Kamptee	-	12.5 MLD STP	-	
23.	Mouda	-	2 STPs of 1 MLD	2021	
24.	SangliMiraj	22.5 MLD	-	April 2020	
25.	Islampur	2 STPs of 12 MLD	-	March 2021	

26.	Ashta	-	5.5 MLD STP	-	
27.	Wai	-	6 MLD STP	-	
28.	Satara	-	17.5 MLD STP	March 2022	Timelines spill beyond directions of NGT
29.	Khopoli	-	DPR under preparation	March 2022	
30.	Khalapur	-	3 MLD STP	January 2023	
31.	Amravati	-	2 STPs of 26 MLD	-	
32.	Umarkhed	-	9.6 MLD STP	-	
33.	Bhusawal	-	12.5 MLD STP	-	
34.	Hingnaghat	2 STPs of 13.5 MLD	-	March 2021	
35.	Beed	35 MLD	-	April 2021	Timelines spill beyond directions of NGT
36.	Amalner	12.5 MLD	-	December 2020	
37.	Jalgaon	48 MLD	-	August 2021	Timelines spill beyond directions of NGT
38.	Pachora	9 MLD	-	March 2020	
39.	Vasai Virar	-	7 STPs of 175 MLD	2022	Timelines spill beyond directions of NGT
40.	Solapur	12.5 MLD	-	March 2021 (for future)	
41.	Chalisgaon	-	2 STPs of 25 MLD	Sept 2021	Timelines spill beyond directions of NGT
42.	Latur	-	2 STPs of 72 MLD	April 2021	
43.	Kolhapur	-	2 STPs of 10 MLD	-	
44.	Ichalkaranji	-	1 STP of 20 MLD	March 2021	
45.	Dhule	-	2 STPs of 57 MLD	May 2021	Timelines spill beyond directions of
46.	Mahad	-	3.7 MLD STP	March 2022	

47.	Ulhasnagar		4 STPs of 54.26 MLD		NGT
48.	Kulgaon Badlapur	2 STPs of 22 MLD		March 2021	

Industrial waste management:

In order to maintain a safe distance between industrial units and rivers to avoid discharge of effluent into water bodies, the State has its policy which also states that no industry will be allowed to establish along a river bank. Industries are being encouraged to recycle and reuse waste. Maharashtra Pollution Control Board does not allow any industry to discharge treated/untreated effluent to the rivers. Status of CETPs as per the Action Plan:

Godavari River

0.5 MLD CETP proposed at MIDC Satpur with ZLD condition.

Kundalika River

Roha Industrial Area has 41 industrial units and a CETP of 22.5 MLD capacity is operational.

Bhima River

There are 7 Industrial Estates are situated in the catchment area of the river. Total 9209 industries are situated in these industrial areas and generate industrial effluents of about 18.33 MLD. All such industries have their captive Effluent Treatment Plants. 2 CETPs are existing in the catchment area.

Patalganga River

There are 1310 industries in catchment area. Only 18 industries are generates effluent, which is of 35.44 MLD. These 18 industries have captive ETP of 50 MLD. 1 CETP of 15 MLD capacity is existing in the catchment area.

Pedhi River

There are 9 industries in catchment area generating effluent of 4.57 MLD. All the industries have captive ETP of 2.133 MLD. 1 CETP of 5 MLD capacity is existing in the catchment area.

Purna River

There are 9 industries in catchment area, generating effluent of 4.57 MLD. All the industries have captive ETP of 2.133 MLD. 1 CETP of 5 MLD capacity is existing in the catchment area.

Sina River

Industrial effluent generation is 2.5 MLD, 327 industries have captive ETPs. One CETP of 3 MLD is operational.

Panchganga River

There are total 105 industries located in the Panchganga river basin having major

industrial effluent generation of 18 MLD. All effluent generating units have provided their own ETP and are members of the 3 CETPs operational in the area having total capacity of 23 MLD.

Savitri River

There are total 445 industries in Mahad. Of which 135 industries generate effluent of 6.7 MLD. All the 135 effluent generating industries have captive ETPs and are connected to the operational CETP having capacity of 7.5 MLD.

Ulhas River

Badlapur MIDC is in the catchment of Ulhas river polluted stretch having 1 CETP (8 MLD) with 120 member industries contributing to CETP.

17. Manipur

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects not known. Details of projects proposed or under-construction as per the action plan is as below:

- DPR for 41 MLD STP for the Imphal town has been prepared and approval awaited. Therefore completion timeline not provided.
- 2 STPs of 16 MLD (Mongsangei) and 1 MLD (Samusang) capacities with MBBR technology have been approved under NRCP with completion timeline of April 2021.

Industrial waste management:

MPR has not been received from the State and as per the Action Plan, there are no water polluting industries within the river catchment areas.

18. Meghalaya

Municipal Sewage management:

A concept on "Feacal sludge treatment plant, intermediate sewage pumping stations and nallah waste water treatment plant (STP)" has been prepared for the 2 outfalls of the Umkhrah river stretch under AMRUT Scheme and is expected to be completed by March 2021.

Industrial waste management:

There are no CETPs. The industries are having captive ETPs and are treating the effluent generated.

19. Mizoram

Municipal Sewage management:

As per the MPR, on-Site liquid treatment system for Grey water at household levels is under process. This technology is considered most feasible for Mizoram in place of STP which involves complications and high costs for setting up and operations.

Industrial waste management:

As per the MPR, River Pollution due to industrial effluents is insignificant in case of Mizoram. There is no CETP in the State.

20. <u>Nagaland</u>

Municipal Sewage management:

- I&D with 25.43MLD STP based on WSP technology (under NRCP funding) is under construction in Dimapur (Dhansiri River). The project is expected to be completed by June 2021. Delayed is due to prolonged monsoon season.
- Details about remaining river stretches not provided in the Action Plan neither in the MPR.

Industrial waste management:

No CETP existing in Nagaland.

21. <u>Odisha</u>

Municipal Sewage management:

As per Action Plan and MPR, following STP with sewerage projects are under construction:

- At Meherpalli, STPs having capacity of 56 MLD capacity, by July 2020
- 43.5 MLD STP at Kochilaput by July 2020
- 28 MLD STP at Basuaghai by October 2020
- 8.5 MLD STP at Paikarappur by July 2020
- 16 MLD STP for Cuttak city by 2020
- 40 MLD STP at Sambalpur under construction by 2020
- 40 MLD STP at Rourkela under construction by 2020

Industrial waste management:

As per the MPR, there is no CETP existing/ proposed in the State of Odisha. Out of 22 nos. of industries, 12 nos. of industries have already adopted ZLD. 3 nos. of industries have been directed to adopt ZLD. Other 7 nos. of industries discharging to river and sea after meeting prescribed standard.

22. <u>Puducherry</u>

Municipal Sewage management:

- Project for 3 MLD STP at Karaikal under tendering stage. Timeline not provided.
- Project for 3 MLD STP at Villianur under tendering stage. Timeline not provided.

Industrial waste management:

No CETP existing.

23. <u>Punjab</u>

Municipal Sewage management:

As per the latest MPR, 93 STPs (new/ up-gradation) are being set up in the catchment areas of rivers (Sutlej- 43,Ghaggar-35 and Beas-15) by30.09.2022 as per the following details:

- Completed: 6
- Work under progress: 16
- Tender Stage: 56
- Land Issue: 15

Industrial waste management:

As per MPR, 3 CETPs of 5.5 MLD are existing.

No.	Activity	Completion Timeline
1	Setting up of 15 MLD CETP at Ludhiana	Commissioned
2	Setting up of 40 MLD CETP at Ludhiana	31.08.19
3	Setting up of 50 MLD CETP at Ludhiana	31.01.20
4	Setting up of 0.15 MLD CETP at Jalandhar	31.03.20
5	Up-gradation up of 5 MLD CETP at Jalandhar	31.03.20

A total of 204.02 MLD of industrial effluent is generated, out of which, 203.57 is treated in captive ETPs installed by the industries. 509 ETPs are operational in the catchment area of rivers.

24. <u>Rajasthan</u>

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects not known. Details of projects proposed or under-construction as per the action plan is as below:

- At Kota, 61 MLD is under construction with completion timeline of 2023.
- Two STPs of capacity 680 KLD and 2.6 MLD are proposed for Keshoraipatan.

Industrial waste management:

As per the Action Plan, 1 CETP of 12.3 MLD at Sanganer is under progress. Timeline not provided.

25. <u>Sikkim</u>

Municipal Sewage management:

As per the Action Plan,1.7 MLD STP at Jorethang is proposed to be constructed within one year (by 2020). Update status of the project not provided in the MPR.

Industrial waste management:

No CETP existing. The industrial units are equipped with functional ETP and no treated effluent is allowed to discharge ensuring zero discharge.

26. <u>Tamil Nadu</u>

Municipal Sewage management:

Status of STPs proposed or under-construction as per the Action Plan and MPR:

No.	Town	STP projects Proposed or under-construction	Completion timeline	Remarks of Committee
1.	Salem	35 MLD	June 2020	
2.		44 MLD	March 2021	
3.	Trichy	37 MLD	June 2021	Timelines spill beyond directions of NGT
4.	Tirunelveli	34 MLD	June 2022	

Industrial waste management:

- One CETP operational in Thirumanimuthar catchment area.
- There are two CETP proposals under process in Kumarapalayam jurisdiction.
  1. M/s. Green Environmental Association (M/s. Ever Green Enviro Tech) - (118 Members) - The CETP is in the process of applying for CTE.
  2. M/s. Kumarapalayam Green Cauvery Dyeing Cluster (83 Members) Feasibility report submitted to the Government of Tamil Nadu TWICL- 22.5 acres Land has been purchased.
- As per the MPR, no industrial discharge of effluent. The effluent generating industries are provided with individual ETP/STP/connected to CETP/CSTP. The treated effluent is utilized for process in case of ZLD/ others gardening/irrigation inside the unit premises.

27. <u>Telangana</u>

Municipal Sewage management:

Status of STP projects as per the Action Plan and MPR submitted by the State with design year of 2029 is as below. Timelines of all these projects spill beyond directions of NGT.

No.	River	STP projects Proposed or under-construction	Completion timeline
1.	Musi	21 STPs of 900 MLD Proposed for year 2029	2023
2.	Manjeera and Nakkavagu	11 STPs of 71 MLD	2023
3.	Karakavagu and Kinnersani	Palvancha - Construction of 4 Nos of STPs of Capacity 15.20 MLD	2023

4.	Maner	Karimnagar (38 MLD – Commissioned) - Completed.	2020
5.		Huzurabad - Construction of 2 Nos. of STPs of capacity 7.30 MLD	2023
6.		Jammikunta - Construction of 2 Nos. of STPs of Capacity 6.30 MLD	2023
7.		Parkal - Construction of 2 Nos. of STPs of Capacity 6.00 MLD	2023
8.		Bhupalpally - Construction of 3 Nos. of STPs of Capacity 11.15 MLD	2023
9.	Godavari	Mancherial - Construction of 4 Nos of STPs of Capacity 16.50 MLD Ramagundam - Construction of 3 Nos of STPs of Capacity 45.00 MLD	2023
10.	Krishna	9 STPs OF 70 MLD	2023

Industrial waste management:

- As per Action Plan, One CETP is located along the Nakkavagu stretch at Patancheru (PETL) with 135 member units of which 89 industries are located in the catchment area of Manjeera.
- As per MPR, 4 CETPs with 7.4 MLD are existing, of which 5.4 MLD discharged into River Musi after treatment through STP Amberpet Outlet and 2 MLD is discharged into Nalla Cheruvu.

28. <u>Tripura</u>

Municipal Sewage management:

Status of STP projects as per the MPR submitted by the State. Timelines for all projects spill beyond directions of NGT

- DPR for STP of 4 MLD at Bishalgarh is under preparation. The project is expected to be completed by March 2022.
- DPR for STP of 8 MLD at Udaipur is under preparation. The project is expected to be completed by March 2022.
- Work in progress for STP of 8 MLD at Akhaura. The project is expected to be completed by March 2022.
- DPR for STP of 8 MLD at middle point between Dharmanagar and Kailasahar is under preparation.The project is expected to be completed by March 2022.

Industrial waste management:

As per the MPR, ETP has been constructed in almost all the industries where ever required. CETP is not required.

29. <u>Uttarakhand</u>

Municipal Sewage management:

MPR has not been received from the State, therefore updated status of STP projects not known. Details of projects proposed or under-construction as per the action plan is as below:

No.	River	STP projects Proposed or under-construction	Expected completion timeline
1.	Bhela	Proposal for 2 STPs submitted for approval	2 years after sanctioning of project
2.	Dhela	18 MLD STP under construction	December 2019
3.		Proposal for 14 MLD STP submitted for approval	2 years after sanctioning of project
4.	Suswa	1 MLD STP Daudwala under-construction	March 2021
5.		3 MLD STP Kaulagarh under-construction	
6.		Proposal for 3 STPs of 7.5 MLD STP submitted for approval	2 years after sanctioning of project
7.	Kalyani	Proposed STPs at – 18 MLD at Rampura Trenching Ground and 26 MLD at Ravindra Nagar Maidan	2 years after sanctioning of project
8.	Kosi	110 KLD STP proposed at Mukundpur	2 years after sanctioning of project
9.	Nandhor-Kailash	2 MLD STP proposed	2 years after sanctioning of project

Industrial waste management:

MPR not received from the State, status of CETPs as provided in the Action Plan:

- River Bhela: Out of 8-GPIs, 2- GPIs are maintaining ZLD while rest of 6-industries are generate about 4620 KLD of wastewater. Apart from GPIs there are 40 other water polluting industries located in the catchment and generating about 3430 KLD wastewater. Individual industries have provided their own wastewater treatment system (ETP /STP) of appropriate capacity.
- River Dhela: There are 14 GPIs operating in the catchment area which have their own wastewater treatment system (ETP /STP) of appropriate capacity.
- River Suswa: Two grossly polluting industries are located in the catchment area, having own ETPs.
- River Kiccha: 4 grossly polluting industries are located in the catchment area, with their own wastewater treatment system (ETP /STP) of appropriate capacity.

- River Kalyani: receives wastewater from CETP having installed capacity of 4.0 MLD (Pantnagar), however, presently CETP receiving about 1.5 MLD to 1.8 MLD wastewater from 236 industrial Unit. Work in progress to connect remaining industries to the CETP.
- River Ganga: There are 80 water polluting industries. As per the Action Plan, Inventorization of all the industries in Haridwar and regular monitoring of the industries is proposed for management of industrial effluent.
- River Kosi: 4 grossly polluting industries are located in the catchment area. Both have operational ETPs.
- River Nandour: Within the catchment of the river, about 73 operating industries are located in the ESIPL Sitarganj, which contributes its wastewater to CETP for treatment and disposal. CETP receives about 2.4- 2.5 MLD wastewater against the installed capacity of 4.0 MLD. Work in progress to connect remaining industries to the CETP.
- River Pilakhar: There are 144 industries. As per the Action Plan, Inventorization of all the industries in Haridwar and regular monitoring of the industries is proposed.

30. <u>Uttar Pradesh</u>

Municipal Sewage management:

Status of STP projects as per the Action Plan and MPR submitted by the State:

No.	City	Proposed STP Capacity in MLD	Status of Project	Completion Timeline
1.	Saharanpur	93.65	DPR under preparation	-
2.	Muzaffarnagar	32	Work under progress	February 2021
3.	Shamli	-	To be planned	March- 2022
4.	Sardhana (Meerut)	-	To be planned	March- 2022
5.	Baghpat	14	Proposed	March- 2021
6.	Khatauli	-	To be planned	March- 2022
7.	Meerut	200	Work under progress	January 2021
8.	Hapur	80	30 MLD – sanctioned 50 MLD – submitted for approval	2021-2022
9.	Modi Nagar	20	Work under progress	March- 2022
10.	Bulandshahar (Galaothi)	7	Proposed DPR to be prepared	-
11.	G B Nagar	-	To be planned	March- 2022

12.	Aligarh	45	Proposed	-
13.	Hathras	-	To be planned	March- 2022
14.	Mathura	30	Sanctioned project	January 2021
15.	Agra	175	Sanctioned project	December 2020
16.	Firozabad	67	Under-construction	September 2020
17.	Etawah	21	Sanctioned project	March 2021
18.	Kalpi	-	To be planned	March- 2022
19.	Hamirpur	-	To be planned	March- 2022
20.	Rajapur, Chitrakoot	3.42	To be planned	-
21.	Prayagraj	72	Under-construction	September 2021
22.	Sitapur	-	To be planned	March- 2022
23.	Lucknow	326		
24.	Barabanki	-	To be planned	March- 2022
25.	Jagdishpur	-	To be planned	March- 2021
26.	Sultanpur	17	Under-construction	July 2021
27.	Jaunpur	30	Under-construction	October 2021
28.	Kerakat	-	To be planned	March- 2021
29.	Moradabad	99	25 MLD STP project sanctioned. DPR under preparation for 34 & 40 MLD STP	February 2022
30.	Rampur	-	To be planned	March- 2022
31.	Bareilly	98	DPR prepared	March- 2022
32.	Jhansi	26	Under construction	March- 2022
38.	Gorakhpur	3 STPs of 168 MLD	Proposed	
39.	Raebareli	18 MLD	Proposed	March- 2022
40.	Pratapgarh	8.95 MLD	Commissioned. Sewer network connections in progress.	March- 2021
41.	Faizabad	35 MLD	Proposed	

Industrial waste management:

Status of CETPs as per the Action Plan:

No	River	Industries in the catchment area	CETP Status
1	Hindon	453 industries (including kali East &Krishni Rivers). ETPs installed.	06 MLD CETP at Loni
2	Yamuna	300 industries.	6.5 MLD CETP at Mathura existing. Upgradation of the CETP under progress.
3	Varuna	11 industries. ETPs installed	-
4	Kali	94 industries. ETPs installed.	2.1 MLD CETP at Pilkhuwa existing. Upgradation proposed in the Action Plan.
5	Gomti	30 industries. ETPs installed	-
6	Ganga	591 industries. 463 units are member of above 4 CETPs. Rest 138 units have installed their own ETPs	• CETPs of 36 MLD (Jajmau), 1.5 MLD (Rooma), 4.5 MLD (Banthar) and 2.15 MLD (Unnao) existing. • Upgradation of CETP at Jajmau in progress. • Upgradation of CETPs at Banthar & Unnao sanctioned.
7	Ramganga	121 industries. ETPs installed.	-
8	Betwa	1 water polluting industry. ETP installed	-
9	Ghaghara	No industrial activity	-
10	Rapti	10 industries. ETP installed	-
11	Sai	3 industries. 2 closed.	-
12	Saryu	2 industries. ETP installed	-

31. <u>West Bengal</u>

Municipal Sewage management:

Status of STP projects as per the Action Plan and MPR submitted by the State:

No.	River	STP projects proposed or under-construction	Expected completion timeline
1.	Mahananda	DPR prepared for 32 MLD at Noukaghat	
2.		DPR prepared for 15 MLD at Jorapani	
3.	Ganga	• 11 STPs under construction • 15 STPs under different stages of upgradation • 5 STPs under tendering stage • 4 STPs under DPR stage	2023
4.	Churni	DPR prepared and are under tendering: • 4 MLD treated lagoon at Sreenathpur • 5.2 MLD Aerated lagoon at Chaitanya ghat • 2.6 MLD constructed Wetland at Silver Jubliee Road	December 2023
5.	Vidyadhari	New Town-Rajarhat - 24 MLD STP	June 2020
6		Proposed Borobaro STP by KEIIP - 70 MLD, DPR is under preparation by KEIIP	
7		Proposed STP at Ghusighata of 170 MLD	

Industrial waste management:

There is only 1 CETP in West Bengal, mainly for treating effluent generated from 335 no. of tanneries located at Calcutta Leather Complex at Bantala, south 24 Parganas. Total quantity of effluent generation is approximately 19.9 MLD. Actual effluent quantity varies from 15 MLD to 20 MLD. Present capacity of CETP is 20 MLD. Additional 4 modules of CETP of capacity 5MLD each (i.e. total capacity of 20 MLD) has been proposed within Calcutta Leather Complex at Bantala, South 24 Parganas.

XIII. Status of Ground Water Augmentation, Afforestation, Floodplain and E-flow Management

State-wise status of ground water management, good irrigation practices adopted by farmers, installation of rain water harvesting, protection and management of Floodplain Zones and maintenance of minimum E-flow in the river stretches as per the Action Plan and MPR submitted by the States is placed at **Annexure- XV**. The status and progress will be monitored in subsequent meetings of Monitoring Committee.

XIV. Status of Bio-remediation/ phyto-remediation works:

During the second meeting held on 19.02.2020, States expressed their inability to take up in-situ remediation measures due to lack of technological expertise and appropriate agencies with proven capability to implement such works. Accordingly, it was decided that a workshop may be convened for dissemination of information amongst all States by inviting expert agencies. Therefore, NMCG, had organized a one-day Consultation Workshop on '*Alternate sewage treatment technologies (bio-remediation/ phytoremediation / constructed wetlands) and septage management*' on 20.03.2020, wherein experts in the field and representatives from the States were invited. However, due to the concerns raised by various States owing to COVID-19, related directions issued by various States and the reservations expressed by few States and Experts, the consultation workshop was postponed.

Further, based on decision taken in the meeting dated 19.02.2020, Hon'ble NGT's order dated 22.01.2020 in the matter OA No. 06 of 2012 regarding bio-remediation and the report of Yamuna Monitoring Committee on "*Approach to in-situ bio-remediation/ phyto-remediation of sewage in drains of Delhi*", in the NGT matter OA No. 06 of 2012 was shared with the States vide email dated 05.03.2020 for consideration and their guidance.

XV. Standardization of procedure for preparation of DPRs/ tender process:

With regard to standardization for DPRs/tender process, NMCG has issued Guidelines for preparation of DPR for sewage infrastructure projects and have also conducted trainings for the 5 Ganga basin States through IIT Roorkee. The guidelines also has section for project cost estimation. Project estimates are prepared by State using standard Schedule of Rates (SoRs) notified by States which are regularly being reviewed at the State levels. The States have been advised to use these documents for their tendering purposes.

XVI. Scrutiny of Action Plans for P-II and P-IV:

As per the information provided by CPCB, for the purpose of scrutiny of the action plans with regard to the Priority –I and Priority-II polluted river stretches submitted by the respective State Government/UT Administration in compliance to the Hon'ble NGT order dated 20.09.2018, CPCB has constituted a '*Task Team*' under the Chairmanship of 'Member Secretary, CPCB'. Till date, CPCB has organized twelve

meetings of the Task Team. Action plans received from the concerned States/UTs were considered and reviewed randomly in respect of P-I to P-IV identified polluted river stretches (PRS).Till date, all 61 out of total 61 action plans pertaining to P-I and P-II PRS received by CPCB from18 States and 2 UTs have been approved by CPCB Task Team along with the conditions.

Further, in pursuance to Hon'ble NGT directions dated 06.12.2019, CPCB also organized three Task Team meetings for review of action plans pertaining to P-III and P-IV category PRS. 91 out of 115 Action plans pertaining to P-III and P-IV polluted river stretches, submitted by 17 States and 01 UT has been approved by CPCB Task Team. The Action Plans in respect of the States viz., Chhattisgarh, Jharkhand, Punjab, Rajasthan, Uttarakhand and West Bengal requires modification in light of the recommendations of the CPCB Task Team whereas Nagaland State could not participate in Video Conferencing of 12 Task Team meeting in view of the technical problem.

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ANNEXURE - I

File No: L-34/2014-15/Legal/2019 (Part)
National Mission for Clean Ganga
DoWR, RD &GR
Ministry of Jal Shakti, GoI

1st Floor,
Major Dhyan Chand National Stadium
India Gate, New Delhi-110002
Dated: 22.01.2020

OFFICE MEMORANDUM

Subject: Minutes of the 1st meeting of the Central Monitoring Committee regarding 351 polluted stretches based on the directions of Hon'ble NGT in the matter OA No. 673 of 2018 held on 08.01.2020 at 10:30 AM under the Chairmanship of Secretary, DoWR, RD&GR, Ministry of Jal Shakti

A copy of Minutes of the 1st meeting of the Central Monitoring Committee regarding 351 polluted stretches based on the directions of Hon'ble NGT in the matter OA No. 673 of 2018 held in the Conference Room, Ministry of Jal Shakti on 08.01.2020 at 10:30 AM under the chairmanship of Secretary, Department of Water Resources, RD&GR, Ministry of Jal Shakti is forwarded herewith for kind information & necessary action.

The format for submission of requisite information by the States/UTs is also enclosed.

(D. P. Mathuria) 22.1.2020
Executive Director (Technical), NMCG

Encl: As above

To

1. The Chief Secretary,
States/UTs (as per list)

2. List annexed

To

1. Chief Secretary, Government of Andhra Pradesh, I[st] Block, A.P Secretariat Office, Velagapudi – 522503
2. Chief Secretary, Government of Assam, Block- C, 3rd Floor, Assam Sachivalaya, Dispur - 781006, Guwahati
3. Chief Secretary, Government of Bihar, Main Secretariat, Patna – 800015
4. Chief Secretary, Government of Chhattisgarh, Mahanadi Bhawan, Mantralaya, Naya, Raipur – 492002
5. Chief Secretary, Government of Goa, Secretariat, Porvroim, Bardez, Goa – 403521
6. Chief Secretary, Government of Gujarat, 1[st] Block, 5[th] Floor, Sachivalaya, Gandhinagar – 382010
7. Chief Secretary, Government of Haryana, 4[th] Floor, Haryana Civil Secretariat, Sector-1, Chandigarh – 160019
8. Chief Secretary, Government of Himachal Pradesh, H P Secretariat, Shimla –171002
9. Chief Secretary, Government of Jammu & Kashmir, R. No. 2/7, 2[nd] Floor, Main Building, Civil Secretariat, Jammu -180001
10. Chief Secretary, Government of Jharkhand, 1[st] Floor, Project Building, Dhurwa, Ranchi-834004
11. Chief Secretary, Government of Karnataka, Room No. 320, 3[rd] Floor, Vidhana Soudha, Bengaluru -560001
12. Chief Secretary, Government of Kerala, Secretariat, Thiruvananthapuram -695001
13. Chief Secretary, Government of Madhya Pradesh, MP Mantralaya, Vallabh Bhavan, Bhopal – 462004
14. Chief Secretary, Government of Maharashtra, CS office main Building, Mantralaya, 6[th] floor, Madame Cama Road, Mumbai – 400032
15. Chief Secretary, Government of Manipur, South Block, Old Secretariat, Imphal – 795001
16. Chief Secretary, Government of Meghalaya, Main Secretariat Building, Room no 316, Shillong – 793001
17. Chief Secretary, Government of Mizoram, New Secretariat Complex, Aizwal – 796001
18. Chief Secretary, Government of Nagaland, Civil Secretariat, Kohima – 797004
19. Chief Secretary, Government of Odisha, General Administration Department, Odisha Secretariat, Bhubaneswar – 751001
20. Chief Secretary, Government of Punjab, Chandigarh – 160001
21. Chief Secretary, Government of Rajasthan, Secretariat, Jaipur – 302005
22. Chief Secretary, Government of Sikkim, New Secretariat, Gangtok – 737101
23. Chief Secretary, Government of Tamil Nadu, Secretariat, Chennai-600009
24. Chief Secretary, Government of Telangana, Block C, 3[rd] floor, Telangana Secretariat Khairatabad, Hyderabad, Telangana
25. Chief Secretary, Government of Tripura, New Secretariat Complex Secretariat – 799010, Agartala, West Tripura
26. Chief Secretary, Government of Uttar Pradesh, 1[st] floor, Room No. 110, Lal bahadur Sastri Bhawan, Uttar Pradesh Secretariat, Lucknow – 226001

27. Chief Secretary, Government of Uttarakhand, 4 Subhash Road, Uttarakhand, Secretariat Dehradun – 248001
28. Chief Secretary, Government of West Bengal, Nabanna, 13th Floor, 325, Sarat Chatterjee Road, Mandirtala, Shibpur, Howrah – 711102
29. Administrator, Daman & Diu and Dadra and Nagar Haveli, Secretariat, Moti, Daman -396220
30. Chief Secretary, Govt. of NCT of Delhi, Delhi Secretariat, IP Estate, New Delhi – 110002
31. Chief Secretary, Govt. of Puducherry, Main Building, Chief Secretariat, Puducherry-605001

Copy to:

1. The Member Secretary, Assam Pollution Control Board, Bamunimaidam, Guwahati – 781021
2. The Member Secretary, Andhra Pradesh Pollution Control Board D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre, Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010
3. The Member Secretary, Bihar State Pollution Control Board, Parivesh Bhawan, Plot No. NS-B/2 Paliputra Industrial Area, Patliputra, Patna (Bihar) - 800 010
4. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Atal Nagar Dist- Raipur (C.G.) 492002
5. The Member Secretary, Delhi Pollution Control Committee, Government of N.C.T. Delhi 4th Floor, ISBT Building, Kashmere Gate, Delhi-110006
6. The Member Secretary, Daman, Diu & Dadra Nagar Haveli Pollution Control Committee, Office of the Deputy Conservator of Forests, Fort Area, Court Compound, Moti Daman, Daman – 396220
7. The Member Secretary, Goa State Pollution Control Board, 1st Floor, Dempo Tower, EDC Patto Plaza, Panaji, Goa-403 001
8. The Member Secretary, Gujarat Pollution Control Board Paryavan Bhavan, Sector 10- A, Gandhinagar – 382 043
9. The Member Secretary, Haryana State Pollution Control Board, C-11, Sector-6, Panchkula-134109, Haryana
10. The Member Secretary, Himachal Pradesh Pollution Control Board, Him Parivesh, Phase-III, New Shimla, Himachal Pradesh 171009
11. The Member Secretary, Jammu & Kashmir State Pollution Control Board, Parivesh Bhawan, Forest Complex, Gladni, Narwal, transport Nagar, Jammu, Jammu and Kashmir 180004
12. The Member Secretary, Jammu & Kashmir State Pollution Control Board, Shiekh-ul-Campus, behind Govt. Silk Factory, Raj Bagh, Srinagar (J&K)
13. The Member Secretary, Jharkhand Pollution Control Board, T.A Building, HEC, P.O. Dhurwa, Ranchi – 834004
14. The Member Secretary, Karnataka State Pollution Control Board, Parisara Bhavan, 4th & 5th Floor, # 49, Church St., Bengaluru-560 001
15. The Member Secretary, Kerala State Pollution Control Board, Plamoodu Jn., Pattom Palace P.O. Thiruvananthapuram - 695 004
16. The Member Secretary, Manipur Pollution Control Board, Lamphelpat, Imphal West D.C. Office Complex Imphal– 795004

17. The Member Secretary, Meghalaya Pollution Control Board Arden- Lumpyngngad Shillong: 793014
18. The Member Secretary, Nagaland Pollution Control Board, Signal Point, Dimapur Nagaland – 797112
19. The Member Secretary, Madhya Pradesh Pollution Control Board, E-5, Arera Colony, Paryavaran Parisar,
    Bhopal - 462 016, Madhya Pradesh
20. The Member Secretary, Maharashtra Pollution Control Board, Kalpataru Point, 2nd – 4th Floor Opp. Cine Planet Cinema, Nr. Sion Circle, Sion (E) Mumbai – 400 022
21. The Member Secretary, Mizoram Pollution Control Board, New Secretariat Complex, Khatla Thlanmual Peng, Khatla, Aizawl, Mizoram: 796001
22. The Member Secretary, Puducherry Pollution Control Committee, Housing Board Complex, Anna Nagar, Puducherry -600 005
23. The Member Secretary, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala, Punjab 147001
24. The Member Secretary, Odisha Pollution Control Board, A-118, Nilakanta Nagar, Unit –VIII, Bhubaneshwar – 751012
25. The Member Secretary, Rajasthan Pollution Control Board, 4, Jhalana Institutional Area, Jhalana Doongri, Jaipur (Rajasthan) - 302 004
26. The Member Secretary, Sikkim State Pollution Control Board, Department of Forest, Environment & Wildlife Management Government of Sikkim, Deorali, Gangtok, -737102
27. The Member Secretary, Telangana State Pollution Control Board, Paryavaran Bhawan, A-3, I.E. Sanath Nagar, Hyderabad-500 018
28. The Member Secretary, Tripura Pollution Control Board, Vigyan Bhawan, Pandit Nehru Complex, Gorkhabasti, PO: Kunjaban Agartala – 799006
29. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032
30. The Member Secretary, Uttarakhand Environmental Protection & Pollution Control Board, 29/20, Nemi Road, Dehradun, Uttarakhand – 248001
31. The Member Secretary, Uttar Pradesh Pollution Control Board, Building.No. TC-12V, Vibhuti Khand, Gomti Nagar, Lucknow-226 010
32. The Member Secretary, West Bengal Pollution Control Board, Paribesh Bhavan, 10A, Block-L.A., Sector III, Salt Lake City, Kolkata - 700 106

Copy for kind information:

1. PPS to Secretary, Department of Water Resources, RD&GR, Ministry of Jal Shakti, Shram Shakti Bhavan, Rafi Marg, Sansad Marg Area, New Delhi- 110001
2. PS to Director General, NMCG
3. Chairman, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
4. Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
5. PS to ED (DDG/Project/ Finance/Admin), NMCG

Copy To:

1. Secretary (Technical) Forest, Environment and Ecology Department Jammu, 4th Floor, Mini Block Secretariat, Jammu.
2. Secretary, Department of Environment, Science and Technology Paryavaran Bhawan, Near US Club, Shimla, Himachal Pradesh-171001
3. Principal Secretary, MGSIPA Complex, Sector-26, adjacent Sacred Heart School, Chandigarh, 160019
4. Additional Chief Secretary to Govt. of Haryana, Environment Department of Environment & Climate Change, R.No. 108, 7th Floor, Main Secretariat Sec16, Chandigarh 160017
5. Principal Secretary, Department of Environment, U.P., Room No. 601, Bapu Bhawan Secretariat, Vidhan Sabha Marg, Lucknow – 226001.
6. Special Chief Secretary, Department of Environment, Forest, Science & technology, 4th Block, Ground Floor,Room No:268, A.P Secretariat Office, Velagapudi
7. Secretary, Department of Environment and Forest, H-Block, 2nd Floor Janata Bhawan, Dispur, Guwahati 781006, Assam
8. Principal Secretary, Department of Environment, Forest and Climate Change, Van Vibhag Rd, Nehru Nagar, Patliputra Colony, Patna, Bihar 800013
9. Additional Chief Secretary (Forests & Environment), Forests & Environment Department, Block 14, 8 th floor, Sachivalaya, Gandhinagar - 382 010 Gujarat.
10. Principal Secretary, Department of Environment, Room No. S-2/23, Mahanadi bhawan, Mantralaya, Nava Raipur, Atal Nagar, Raipur - 492001
11. Additional Chief Secretary to Government, Forest, Environment and Ecology, Department, Karnataka Government Secretariat, Room No. 447, 4th Floor, Gate no. 2, Multi-storey Building, Bangalore-560001.
12. Principal Secretary, Department of Environment, Room No. 406 4th Floor Annex II, Secretariat, Kerala Thiruvananthapuram, Kerala, PIN- 695001
13. Principal Secretary, Department of Housing and Environment, Government of Madhya Pradesh, Paryavaran Parisar, E- 5, Arera Colony, Bhopal, Madhya Pradesh, 462016
14. Principal Secretary, Environment Department, Maharashtra 15th Floor, New Administrative Building, Madam Cama Road, Mantralaya, Mumbai – 400032
15. Additional Secretary, Forests & Environment Deptt, Secretariat Building, North Range, Forest Colony, Khasi Hills, Shillong, Meghalaya 793001

16. Deputy Conservator of Forest (Headquarters) Environment, Forests & Climate Change Department Tuikhuahtlang, Aizawl Mizoram.
17. Principal Secretary, Department of Environment, Forest & Climate Change, New Secretariat, Kohima, Nagaland Tel.- 0370-2243025
18. Additional Chief Secretary, State Silvicultural garden, Khandagiri, Bhubaneswar, Odisha 751003
19. Principal Secretary, Forest and Environment Department, Rajasthan 4, Jhalana Institutional Area, Jhalana Doongri, Jaipur, Rajasthan 302004
20. Principal Secretary, Chief Project Director (SBFP-JICA), Forests, Environment & Wildlife Management Department, Government of Sikkim
21. Principal Secretary, Namakkal Kavignar Maaligai, Fort St. George, Chennai 600 009
22. Secretary, Department of Science, Technology & Environment, Vigyan Prajukti O Paribesh Bhawan, P.N. Complex, Gorkhabasti, Agartala,West Tripura, PIN-799006
23. Special. Chief Secretary, TSCOST, 4th Floor, Aranya Bhavan, Saifabad, Hyderabad, Telangana State, Pin – 500004
24. Deputy Conservator of Forests, (Territorial Division), Department of Environment & Forest Office of the Deputy Conservator of Forest, Daman, Fort Area, Post Office Moti Daman Daman & Diu (U.T.)
25. Deputy Conservator of Forests, (Territorial Division), Van Bhavan, Dadra and Nagar Haveli
26. Secretary, Department of Environment, Govt. of NCT of Delhi, 6th Floor, Delhi Secretariat, IP Estate, New Delhi 110002
27. Secretary, Environment & Forest, Govt. of Uttarakhand, 4 Subhash Road, Secretariat, Forth Floor, New Building Dehradun, Pin code-248001
28. Joint Secretary, Department of Science, Technology & Environment, 1st Floor, Pandit Deendayal Upadhay Bhavan, Behind Pundalik Devasthan, Near Sanjay School, Porvorim, Bardez - Goa
29. Secretary, Environment, Office of Environment, Chief Secretariat, Goubert Avenue, Puducherry 605001
30. Principal Secretary, Department of Environment, 5th Floor, Pranisampad Bhawan, Block LB-II, Salt Lake, Sector III, Bidhannagar, Kolkata – 700 106
31. Additional Chief Secretary Forest, Environment & Climate Change Deptt., Nepal House, Doranda, Ranchi-834002, Jharkhand

Minutes of the 1st meeting of the Central Monitoring Committee held on 08.01.2020 in Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD & GR), Ministry of Jal Shakti regarding 351 polluted stretches based on the directions of Hon'ble NGT in the matter OA No. 673 of 2018

The 1st meeting of the Central Monitoring Committee constituted by Hon'ble NGT in the matter OA No. 673 of 2018 was held on 08.01.2020 at 10.30 am in Conference Room, DoWR, RD&GR, Ministry of Jal Shakti under the Chairmanship of Secretary, DoWR, RD & GR. The list of participants of the meeting is at *Annexure-I.*

II. Secretary, DoWR, RD & GR, Ministry of Jal Shakti, welcomed all the participants and briefed about the importance of rejuvenation of rivers and water bodies. Thereafter, the directions of Hon'ble NGT passed in the Order dated 06.12.2019 in OA No. 673 of 2018 were discussed and all the States/UTs were directed to carefully examine the order for compliance and submissions. Main directions of the order are as follows:

i. To ensure 100% treatment of sewage, at least in-situ remediation of drains, by March, 2020.

ii. Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured by March, 2020.

Compensation liable on the local bodies and the concerned departments of the States/UTs is Rs.5 lakhs per month per drain for default in in-situ remediation and Rs. 5 lakhs per month per STP for default in commencement of setting up of the STP.

iii. Timeline for completing all steps of Action Plans, including completion of setting up STPs and their commissioning, is by March, 2021. Compensation liable is Rs. 10 lakhs per month per STP for default.

iv. Evolve institutional mechanism for ensuring compliance of directions.

Monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at Central level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

v. Meeting at Central level must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance, who may take assistance of CPCB. Submission of quarterly report by NMCG to Hon'ble NGT commencing 01.04.2020.

vi. Chief Secretaries may set up appropriate monitoring mechanism at State level. Specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Chief Secretaries may have an accountable person attached in their office for this purpose. Monitoring at State level must take place fortnightly.

vii. Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB.

viii. Procedures for DPRs/tender process needs to be shortened and if found viable, business model developed at Central/State level.

ix. Performance guarantee must be taken from the contractor

x. Rivers which have been identified as clean may be maintained.

III. Secretary, DoWR, RD & GR, Ministry of Jal Shakti directed the States to also submit Action Plans for the stretches falling under the category of priority III, IV and V to CPCB urgently so that they can be approved by CPCB as per timelines fixed by Hon'ble NGT. They were also directed to submit compliance status based on the Action Plans already approved by CPCB for the stretches falling under priority I & II to NMCG and CPCB regularly.

IV. Subsequently, State-wise discussions held are as follows:

1. Puducherry (UT)

Chief Secretary, Puducherry, through Video Conferencing, informed that 2 polluted stretches identified on River Arasalar and Chunnambar in Puducherry fall under Priority IV & V, and Action Plans for the same have been submitted to CPCB. Further, it was informed that the UT had floated tenders for appointment of consultants for preparation of DPRs for sewage management, but no bid was received. Now, the option of limited tenders involving only the companies having experience in the field is being considered and it proposed to initiate the process within 15 days. It was informed that appropriate actions are being taken against the industries discharging effluents into the river. Further, it was informed that special toilets were being constructed along the rivers in order to attain ODF, plantation activities along the sides of the river are being undertaken, consultant is being hired for installation of screens on the drains and laying of sewage network has been proposed.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, recommended that States requiring technical assistance in preparation of DPRs may intimate the same. Organizations of the

Ministry of Jal Shakti such as NRCD, NMCG and WAPCOS (which is a consultancy organization under the Ministry) could provide technical expertise, if required.

2. Punjab

Chief Secretary, Punjab, through Video Conferencing, informed that the deadlines for in-situ remediation of drains and setting up the STPs are not achievable. Govt. of Punjab is in process to deploy single operator for operation and maintenance of STPs of Ludhiana and the same shall be in place by October, 2020. There are 38 towns in Punjab on the identified polluted stretches and it is not possible to cover all the drains in these towns by in-situ treatment by March, 2020. Govt. of Punjab has approached NGT for seeking relaxation in the timelines to complete all the identified activities.

3. Jammu & Kashmir

Principal Secretary (Urban Development Department), J&K, through Video Conferencing, informed that the STP project is already under execution for 1 identified stretch on river Devika falling in Priority II, and Action Plans for 8 stretches falling in Priority III to V have been submitted to CPCB.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, directed State to expedite the project for Devika River, which is being funded under NRCP, as its execution has been inordinately delayed.

4. Andhra Pradesh

The representative from Andhra Pradesh informed that all the identified 5 stretches are in Priority IV and V. Based on the observations of CPCB, the State shall submit revised Action Plans to CPCB shortly for these stretches.

5. Assam

Representative from Assam informed that out of 44 polluted river stretches in the State, 4 stretches falling in Priority I & II on rivers Bharalu, Borsola, Silsako, Sorusola are of Guwahati town. Action Plans for Priority I &II have already been approved by CPCB. It was informed that based on the approved Action Plans, the State is undertaking survey work. The State Govt. was directed by DG, NMCG to provide details of the action taken on the approved Plans as well as comply with the directions of Hon'ble NGT with regards the finalization of Action Plans for balance 40 stretches in priority III to V.

6. Bihar

Representative from Bihar informed that 1 identified stretch falls under Priority III on River Sirsia, and 5 stretches are in Priority V identified on River Parmar, Ganga, Punpun, Ram Rekha and Sikrahna. River Rejuvenation Committee (RRC) has been formed and Action Plans were submitted to CPCB in July, 2019. It was further informed that Namami Gange projects are under different stages of implementation in 23 cities on River Ganga, 1 I&D with STP project for Fathua town has been sanctioned under Namami Gange for River Punpun and for rivers Sirsia, Parmar, Ram Rekha and Sikrahna, NEERI has been engaged for preparation of DPRs.

7. Chhattisgarh

Representative from Chhattisgarh informed that 4 stretches are falling in Priority IV and 1 stretch falls under Priority V, for which Action Plans have been prepared and submitted to CPCB. It was further informed that DPRs for STPs are under preparation, the State is trying to maintain the e-flow in the rivers, plantation along rivers is in progress, river regulation policy is under preparation and the State is working on water sustainability issues.

Shri. A.Sudhakar, Scientist E, CPCB informed that the Action Plans from Chattisgarh has been received in CPCB, however they have not been approved by the Task Team as yet.

8. Daman & Diu

No official from the UT attended the meeting personally or through Video Conferencing.

9. Delhi

The Action Plan prepared by Delhi Govt. for Yamuna river (falling in Priority I) has not yet been approved by CPCB in view of lack of clarity on the timelines and responsibility of various organizations.

The Chief Secretary, Delhi informed that the actions initiated are being intimated to Hon'ble NGT and the Yamuna Monitoring Committee of Hon'ble NGT in the matter of OA No. 6 of 2012. The steps taken so far were as follows.

- Setting up of STPs to bridge the gap will be completed by 2022.
- Plan of septage management have been notified in November, 2018

- State Wetland Authority have been constituted.
- Successful implementation of Idol Immersion guidelines.
- Industries in non-confirming areas have been closed as per the order of Hon'ble NGT and Hon'ble Supreme Court of India.
- Monitoring of water quality of river Yamuna and drains done on monthly basis
- Setting up of online continuous monitoring system on STPs and CETPs.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, raised concern over the revision of completion timelines of ongoing sanctioned projects since past two years and slow progress of Interceptor Sewer project, and directed to adhere to the completion timelines.

10. Goa

Representative from Goa informed that 11 stretches fall under Priority III to V, and Action Plans for the same shall be submitted shortly. The concerned officials dealing the matter of management of sewerage system and STPs did not attend the meeting to provide the details. DG, NMCG directed that the State Govt. may work out the details as per the directions summarized in the Agenda and submit the information to NMCG urgently.

11. Gujarat

Representative from Gujarat informed that 6 identified stretches fall under Priority I & II on rivers Amlakhadi, Bhadar, Bhogavo, Khari, Sabarmati & Vishwamitri, which are non-perennial in nature. Further, it was informed that pollution in rivers Amlakhadi, Bhadar, Bhogavo & Khari is primarily due to industrial clusters in their vicinity.

Action Plans for these 6 stretches have been approved by CPCB and the State is undertaking tendering of the projects proposed in the Action Plans. Further, Action Plans for balance 14 stretches of rivers in Priority III to V have already been submitted to CPCB. 162 STPs are proposed in Gujarat, of which 2 STPs have been completed. It was further, informed that work has already initiated in the State for recharge of groundwater.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, raised concern over the slow progress of the projects sanctioned under NRCP on Sabarmati and Tapi rivers. It was further directed that the State expedite the implementation of these projects & ensure timely release of funds to the Executing Agency/Municipal Body. The State Govt. was also directed to furnish the Action Taken report, post approval of the 6 Action Plans.

12. Haryana

Additional Chief Secretary (E&F), Haryana informed that 2 stretches falling under Priority I are identified on rivers Ghaggar and Yamuna. It was also informed that Hon'ble NGT in the matter OA No. 06 of 2012 had constituted a Yamuna Monitoring Committee for monitoring compliance of the directions of the NGT judgement. Similarly, a Ghaggar Monitoring Committee has been constituted, which also monitors issues relating to solid waste management in whole of Haryana. Further, the State Level Monitoring Committee headed by Chief Secretary has been formed for monthly monitoring of the progress. As per the Action Plan, 60 STPs are proposed for river Ghaggar and 62 STPs for River Yamuna. 40 STPs are existing, of which 50% are being upgraded. Most of the new STPs would be completed by December, 2020, 10 STPs by 2021 and few by 2022. Solid waste management in 14 clusters have been proposed and tenders have been floated for establishment of processing units. 100% door-door waste collection is being carried out in 80 towns and quarterly report is being submitted to CPCB. All the CETPs in Haryana have installed online monitoring system, while STPs are also being directed to install online monitoring systems. The process for increasing manpower in HSPCB is in process. A Pond Development Authority has been constituted for reviving the existing ponds in Haryana.

The State Govt. was directed to submit a comprehensive note to NMCG.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti also highlighted the issue of pollution in Yamuna due to industrial as well as sewage discharge from Sonipat and Panipat, and directed that the issue may also be resolved expeditiously.

13. Himachal Pradesh

Representative from HP informed that Action Plans for 2 stretches in Priority I and II have been approved by CPCB. Further, the revised Action Plans for 5 stretches in Priority III and V have been submitted to CPCB. It was also informed that rivers Sukhana and Markhanda in Priority I and II do not have sufficient water, resulting in high BOD levels in the rivers.

14. Jharkhand

Director (Urban Development), Jharkhand informed that 3 stretches fall in Priority IV and 4 stretches in Priority V. To address the sewage pollution, 7 STP projects have been

proposed, of which 5 projects have been approved. He also informed that Action Plans for these 7 stretches have been submitted to CPCB.

15. Karnataka

Representative from Karnataka informed that all the 17 stretches in the State fall in Priority III to V, for which Action Plans have been submitted to CPCB. As per the Action Plans, total estimated project cost amounts to Rs. 1027 crore, of which Rs. 827 crore have already been approved by the State Government, while the remaining is expected to be approved by February, 2020.

16. Kerala

Resident Commissioner, Kerala informed that 3 STPs are existing in Kerala. CPCB has approved the Action Plan for 1 identified stretch in Priority I on River Karamana, Action Plans for balance 20 stretches falling in Priority IV and V have already been submitted to CPCB. It was informed that the timeline stipulated by NGT require relaxation upto 30th June, 2020 to meet the requirement of in-situ treatment facility.

17. Madhya Pradesh

No official from the State attended the meeting personally or through Video Conferencing.

18. Maharashtra

Member Secretary, MPCB informed that Action Plans for 15 stretches in category I & II have been approved by CPCB, while the Action Plans for balance 38 stretches have been submitted to CPCB. DPRs for sewage infrastructure and solid waste management has been prepared and are under approval. The Chief Secretary has so far convened 9 meetings on the matter to review the progress of Action Plans. It was informed that the setting up of STPs in towns along the polluted river stretches will be completed by the year 2024 and in respect of river Mithi the time line will be March, 2025. Secretary suggested to compress the proposed time line at least by two years to complete all the projects.

Member Secretary, MPCB further informed that with respect to industrial pollution, action have been taken under the provisions of Water (Prevention & Control of Pollution) Act, 1974 and the closure orders have been issued to the non-complying units. Scientific disposal of municipal solid waste is being done for only 50% of the waste generated. The matter of

performance guarantee was deliberated in detail in the State and it was informed by the Member Secretary, MPCB that the Hon'ble Supreme Court has been approached for granting relaxation to the timelines imposed by Hon'ble NGT.

19. Manipur

No official from the State attended the meeting personally or through Video Conferencing.

20. Meghalaya

The representative from Meghalaya informed that 2 stretches in Priority I identified on rivers Umkhrah and Umshyrpi are in Shillong town and WAPCOS has been assigned the work of DPR preparation. The Actions Plans for these 2 stretches have been approved by CPCB. Action Plans for remaining 5 stretches falling in Priority IV & V will be submitted to CPCB.

21. Mizoram

No official from the State attended the meeting personally or through Video Conferencing.

22. Nagaland

No official from the State attended the meeting personally or through Video Conferencing.

23. Odisha

Representative from Odisha informed that out of 19 stretches identified, only 1 stretch falls under Priority I and remaining 18 stretches are under Priority III to V. Action Plan for the Priority I stretch has been approved by CPCB. Further, as per the latest water quality data, 10 river stretches are having BOD values below 3 mg/l, therefore CPCB has been requested to re-consider the number of polluted stretches in Odisha. It was also informed that for the balance 8 stretches in Priority III to V, the Action Plans will be submitted to CPCB.

Scientist E, CPCB informed that for such reliefs, States may directly approach Hon'ble NGT.

24. Rajasthan

No official from the State attended the meeting personally or through Video Conferencing.

25. Sikkim

No official from the State attended the meeting personally or through Video Conferencing.

26. Tamil Nadu

Representative from Tamil Nadu informed that out of 6 stretches, 4 fall under Priority I, for which the Action Plans have been approved by CPCB. Works to be taken-up under these Action Plans are being covered under the integrated Cauvery Rejuvenation programme. Action Plans for balance 2 stretches have also been submitted to CPCB.

27. Telangana

Representative from Telangana informed that Action Plans for 8 stretches have been submitted to CPCB. With regard to 3 stretches falling in Priority I and II, Action Plans have been approved by CPCB & DPR preparation is in progress. For the balance 5 Action Plans for stretches in Priority III & IV, the Action Plans are to be approved by CPCB. He also informed that about 49% sewage gets treated and 51% is disposed off untreated in the Musi river stretch. About 900 MLD treatment capacity is to be created to bridge the gap.

28. Tripura

Representative from Tripura informed that all 6 stretches identified under Priority V have BOD levels less than 3 mg/l for most of the year as per latest data. Hence these may be removed from the list by CPCB. Scientist E, CPCB informed that for such relief, the State may directly approach Hon'ble NGT.

Director General NMCG suggested that State must ensure maintenance of river water quality. Secretary, DoWR, RD & GR suggested that States having low BOD values may adopt low cost solutions for improvement and maintenance of river water quality.

29. Uttar Pradesh

Representative from UP informed that total 630 drains have been identified in UP, of which 171 drains have been tapped and 459 remains untapped. For the remaining drains, bio-remediation project amounting to Rs. 1796 crores have been proposed and have been submitted to NMCG for approval.

Secretary, DoWR, RD & WR informed that already more than Rs. 10,000 crore worth of projects have been sanctioned by NMCG for UP. Therefore, the State should take up in-situ projects from their own funds, as these cannot be funded under Namami Gange Programme.

30. Uttarakhand

Additional Secretary (UDD), Uttarakhand informed that 4 stretches fall under Priority I and II identified on rivers Bhela, Dhela, Suswa and Kiccha, for which Action Plans have been approved by CPCB. Pollution levels in rivers Bhela and Dhela are high due to Kashipur industrial cluster. Further, it was informed that DPR for Bhela and Dhela is being revised and shall be submitted.

With regard to Suswa river, it was informed that the high pollution load was due to Bindal and Rispana rivers carrying discharge of Dehradun town, for which 1 project has been approved under the Namami Gange programme. With the completion of this project in Dehradun, the water quality of the river Suswa shall improve. The State Govt. was requested to get the balance Action Plans approved from CPCB expeditiously.

31. West Bengal

No official from the State attended the meeting personally or through Video Conferencing.

V. While concluding the meeting, Secretary DoWR,RD, GR highlighted following points:

1. **Secretary, DoWR, RD & GR, Ministry of Jal Shakti, pointed out that the nodal Secretary of Environment coordinating the activities of RRC at State Level should positively participate in the forthcoming meetings of the Central Monitoring Committee to supplement the information along with Chief Secretary for appraisal of activities finalized with the timelines for implementation.**
2. **The option of participation in the meeting by Chief Secretary through video conferencing may be intimated by respective States/UTs in advance for taking appropriate action by Ministry of Jal Shakti.**
3. **Director General, NMCG directed the States/ UTs to submit the details provided by them during the meeting in writing to NMCG within a week positively.**

4. **A Group may be formed of officials from NMCG, NRCD and CPCB for reviewing the progress of the States as per the Action Plans and visit some key & important States.**
5. **CPCB needs to urgently appraise and process the Action Plans already submitted by the States for Priority III & IV river stretches for granting approval.**
6. **Secretary, DoWR, RD & GR, Ministry of Jal Shakti, directed that all States/ UTs must have re-cycle and re-use of water as a policy and must undertake regulatory measures to enforce the same.**

The meeting ended with thanks to Chair.

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Annexure-I

List of participants:

1. Shri U. P. Singh, Secretary, DoWR, RD&GR, Ministry of Jal Shakti – *in Chair*
2. Shri Rajiv Ranjan Mishra, Director General, NMCG
3. Shri Vijay Dev, Chief Secretary, Delhi
4. Chief Secretary, Puducherry *(through Video Conferencing)*
5. Chief Secretary, Punjab *(through Video Conferencing)*
6. Smt. Dheera Khandelwal, Additional Chief Secretary, E&F, Haryana
7. Principal Secretary (Urban Development), J&K *(through Video Conferencing)*
8. Dr. Dhimat B. Vyas, Additional Secretary & CE, WRD, Gujarat
9. Shri E. Ravindiran, Member Secretary, Maharashtra PCB
10. Shri Avinash Champawat, Secretary, WR, Chattisgarh
11. Shri Uday Raj Singh, Additional Secretary, PD, SPMG, Uttarakhand
12. Shri Sarita Chauhan, Secretary, E&F, J&K
13. Shri Gaurav, Resident Commissioner, Telangana
14. Shri Puneet Kumar, Resident Commissioner, Kerala
15. Shri N.M. Tabhani, Member Secretary, Gujarat PCB
16. Shri Arbind Kumar Jha, Joint Secretary, UD&HD, Bihar
17. Shri Bishu Kawmakar, Member Secretary, Tripura PCB
18. Shri R.P. Tiwari, MS, CECB, Chhattisgarh
19. Shri Aditya Negi, Member Secretary, HP PCB
20. Shri J H Nengnong, Member Secretary, Meghayala PCB
21. Shri A.M. Hazarika, CE (QC), WR Dept., Assam
22. Shri Shashi Ranjan, Director, State Urban Development Authority, Jharkhand
23. Dr. Shrawan Kumar, Sr. Environmental Engineer, Himachal PCB
24. Shri Prabhat Raj, Technical Advisor, SPMG, Uttarakhand
25. Shri R.P. Singh, SE, Water Resources, Punjab
26. Shri M.S. Tienson, AEE, Meghalaya SPCB
27. Shri Ravindra R. Yaragatti, SE, WRD, Goa
28. Dr. Y.B. Sontakke, Joint Director, Maharashtra PCB
29. Shri Garter Singh Singh Garcha, WR, Punjab
30. Shri Azim Khan, Env. Specialist, SPMG Bihar
31. Shri Surya Kant, EE, BUIDCO, Patna

32. Dr. Lata Chaudhary, Env. Specialist, BUIDCO, Patna
33. Shri. Sandeep Taneja, CE, Haryana
34. Shri Manjeet Xen, IWR, Haryana
35. Shri G. Tomar, DJB
36. Shri M.K. Jain, CE, DJB
37. Shri A.S. Rathore, Additional CE, CECB
38. Shri D.K. Singh, SEE, DPCC
39. Shri K. Sriram Murthy, SEE, AP PCB
40. Shri G. Narsimhulu Scientific Officer, AP PCB
41. Shri N. Jeevan, Law Officer, Kerala
42. Shri Vikram Singh, CE, DJB
43. Shri S.Ramamoorthy, CE, PWD, Tamil Nadu
44. Shri. K. Rajagopal, JE, Rejuvenation of Cauvery, TN
45. Shri K. Sreerava, SEE, APPCB
46. Shri Paras K. Sanghvi, CE, Urban
47. Shri Premjit Nayak, JRC, RC Odisha
48. Shri M.M. Singh, EE, IWR, U.P.
49. Shri D.K. Chaturvedi, SE, IWR, U.P.
50. Shri G.S. Srivastav, CE, UPJN
51. Shri D.K. Aggrawal, Executive Engineer, UPJN
52. Shri Sanjeev Kaul, CE, HPIPH
53. Shri A.K. Kataria, EE, PeyJal Nigam, Uttarakhand
54. Shri. B.B. Barman, Advisor, NRCD
55. Shri S.K. Srivastava, Additonal Director, NRCD
56. Shri S.K. Singh, Deputy Director, NRCD
57. Shri A.P. Singh, Scientist E, NRCD
58. Shri Savita Madhani, Joint Director, NRCD
59. Shri A. Sudhakar, Scientist E & Divisional Head, WQM-I, CPCB
60. Shri Brijesh Sikka, Sr. Consultant, NMCG
61. Dr. Pravin Kumar, Director Technical – III, NMCG
62. Dr. R.M. Bhardwaj, Consultant, NMCG
63. Dr. Hema Patel, Project Officer Technical, NMCG
64. Shri Kumar Ajitabh, Project Officer Legal, NMCG
65. Mrs. Ruby Raju, Project Engineer, NMCG

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/ UTs

(Hon'ble NGT in the matter of OA No. 673/2018 dated 06.12.2019)

Sl.No.	Activity to be monitored	Timeline	Submission of Progress by State/UT-Compliance Status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	
	commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	
2	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	
5	Chief Secretaries may set up appropriate monitoring mechanism at State level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.	22.01.2020 22.01.2020	
	• Monitoring at State level must take place	Fortnightly Commencing 21.12.2019	
6	Progress report may be furnished by the States/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	

6.1	Progress Report may be comprised of details along with completion timelines on: (i) Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment (ii) <u>Status of STPs, I&D and sewerage networks</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (iii) <u>Status of CETPs</u> Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status (iv) <u>Status of Solid Waste Management & Details of Processing Facilities</u> Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline (v) Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		

	(vi)	Preventing dumping of waste and scientific waste management including bio-medical wastes, plastic wastes and decentralizing waste processing, including waste generated from hotels, ashrams, etc.		
	(vii)	Ground water regulation		
	(viii)	Adopting good irrigation practices,		
	(ix)	Protection and management of Flood Plain Zones (FPZ),		
	(x)	Rain water harvesting,		
	(xi)	Maintaining minimum environmental flow of river		
	(xii)	Plantation on both sides of the river		
	(xiii)	Setting up biodiversity parks on flood plains by removing encroachment		

Legal/OA673/2018/NMCG/2019
National Mission for Clean Ganga
Department of Water Resources, River Development
& Ganga Rejuvenation, Ministry of Jal Shakti

1st Floor,
Major Dhyan Chand National Stadium
India Gate, New Delhi-110002
Dated: 27th February 2020

OFFICE MEMORANDUM

Subject: Minutes of the 2nd meeting of Central Monitoring Committee in the NGT Matter OA No.673 of 2018 held on 19.02.2020 at 10.30 AM

A copy of Minutes of the 2nd Meeting of Central Monitoring Committee in the NGT matter O.A. No. 673 of 2018 held at Conference Room, Ministry of Jal Shakti on 19.02.2020 at 10.30 AM under the Chairmanship of Secretary, Department of Water Resources, RD&GR, Ministry of Jal Shakti is forwarded herewith for information/ necessary action.

(D. P. Mathuria)
Executive Director-Technical, NMCG

Encl: As above.

To,

1. Chief Secretary, Government of Andhra Pradesh, Ist Block, A.P Secretariat Office, Velagapudi – 522503
2. Chief Secretary, Government of Assam, Block- C, 3rd Floor, Assam Sachivalaya, Dispur - 781006, Guwahati
3. Chief Secretary, Government of Bihar, Main Secretariat, Patna – 800015
4. Chief Secretary, Government of Chhattisgarh, Mahanadi Bhawan, Mantralaya, Naya, Raipur – 492002
5. Chief Secretary, Government of Goa, Secretariat, Porvroim, Bardez, Goa – 403521
6. Chief Secretary, Government of Gujarat, 1st Block, 5th Floor, Sachivalaya, Gandhinagar – 382010
7. Chief Secretary, Government of Haryana, 4th Floor, Haryana Civil Secretariat, Sector-1, Chandigarh – 160019
8. Chief Secretary, Government of Himachal Pradesh, H P Secretariat, Shimla –171002
9. Chief Secretary, Government of Jammu & Kashmir, R. No. 2/7, 2nd Floor, Main Building, Civil Secretariat, Jammu -180001
10. Chief Secretary, Government of Jharkhand, 1st Floor, Project Building, Dhurwa, Ranchi-834004
11. Chief Secretary, Government of Karnataka, Room No. 320, 3rd Floor, Vidhana Soudha, Bengaluru -560001

12. Chief Secretary, Government of Kerala, Secretariat, Thiruvananthapuram -695001
13. Chief Secretary, Government of Madhya Pradesh, MP Mantralaya, Vallabh Bhavan, Bhopal – 462004
14. Chief Secretary, Government of Maharashtra, CS office main Building, Mantralaya, 6th floor, Madame Cama Road, Mumbai – 400032
15. Chief Secretary, Government of Manipur, South Block, Old Secretariat, Imphal – 795001
16. Chief Secretary, Government of Meghalaya, Main Secretariat Building, Room no 316, Shillong – 793001
17. Chief Secretary, Government of Mizoram, New Secretariat Complex, Aizwal – 796001
18. Chief Secretary, Government of Nagaland, Civil Secretariat, Kohima – 797004
19. Chief Secretary, Government of Odisha, General Administration Department, Odisha Secretariat, Bhubaneswar – 751001
20. Chief Secretary, Government of Punjab, Chandigarh – 160001
21. Chief Secretary, Government of Rajasthan, Secretariat, Jaipur – 302005
22. Chief Secretary, Government of Sikkim, New Secretariat, Gangtok – 737101
23. Chief Secretary, Government of Tamil Nadu, Secretariat, Chennai-600009
24. Chief Secretary, Government of Telangana, Block C, 3rd floor, Telangana Secretariat Khairatabad, Hyderabad, Telangana
25. Chief Secretary, Government of Tripura, New Secretariat Complex Secretariat – 799010, Agartala, West Tripura
26. Chief Secretary, Government of Uttar Pradesh, 1st floor, Room No. 110, Lal bahadur Sastri Bhawan, Uttar Pradesh Secretariat, Lucknow – 226001
27. Chief Secretary, Government of Uttarakhand, 4 Subhash Road, Uttarakhand, Secretariat Dehradun – 248001
28. Chief Secretary, Government of West Bengal, Nabanna, 13th Floor, 325, Sarat Chatterjee Road, Mandirtala, Shibpur, Howrah – 711102
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30. Chief Secretary, Govt. of NCT of Delhi, Delhi Secretariat, IP Estate, New Delhi – 110002
31. Chief Secretary, Govt. of Puducherry, Main Building, Chief Secretariat, Puducherry-605001

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17. Principal Secretary, Department of Environment, Forest & Climate Change, New Secretariat, Kohima, Nagaland Tel.- 0370-2243025
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20. Principal Secretary, Chief Project Director (SBFP-JICA), Forests, Environment & Wildlife Management Department, Government of Sikkim
21. Principal Secretary, Environment and Forest Department, Government of Tamil Nadu, Secretariat, Chennai- 600009.
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33. The Member Secretary, Andhra Pradesh Pollution Control Board D.No. 33-26-14 D/2, Near Sunrise Hospital, Pushpa Hotel Centre, Chalamalavari Street, Kasturibaipet, Vijayawada – 520 010
34. The Member Secretary, Bihar State Pollution Control Board, Parivesh Bhawan, Plot No. NS-B/2 Paliputra Industrial Area, Patliputra, Patna (Bihar) - 800 010
35. The Member Secretary, Chhattisgarh Environment Conservation Board, Paryavas Bhavan, North Block Sector-19, Atal Nagar Dist- Raipur (C.G.) 492002
36. The Member Secretary, Delhi Pollution Control Committee, Government of N.C.T. Delhi 4th Floor, ISBT Building, Kashmere Gate, Delhi-110006
37. The Member Secretary, Daman, Diu & Dadra Nagar Haveli Pollution Control Committee, Office of the Deputy Conservator of Forests, Fort Area, Court Compound, Moti Daman, Daman – 396220
38. The Member Secretary, Goa State Pollution Control Board, 1st Floor, Dempo Tower, EDC Patto Plaza, Panaji, Goa-403 001
39. The Member Secretary, Gujarat Pollution Control Board Paryavan Bhavan, Sector 10- A, Gandhinagar – 382 043
40. The Member Secretary, Haryana State Pollution Control Board, C-11, Sector-6, Panchkula-134109, Haryana
41. The Member Secretary, Himachal Pradesh Pollution Control Board, Him Parivesh, Phase-III, New Shimla, Himachal Pradesh 171009
42. The Member Secretary, Jammu & Kashmir State Pollution Control Board, Parivesh Bhawan, Forest Complex, Gladni, Narwal, transport Nagar, Jammu, Jammu and Kashmir 180004
43. The Member Secretary, Jammu & Kashmir State Pollution Control Board, Shiekh-ul-Campus, behind Govt. Silk Factory, Raj Bagh, Srinagar (J&K)
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Copy for kind information:

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2. PS to Director General, NMCG cum Project Director NRCD
3. Chairman, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
4. Member Secretary, Central Pollution Control Board, Parivesh Bhawan, East Arjun Nagar, Delhi-110032
5. PS to ED (DDG/Project/ Finance/Admin), NMCG
6. Adviser, NRCD
7. Shri.S.K.Srivastava, Additional Director, NRCD

Minutes of the 2nd meeting of the Central Monitoring Committee held on 19.02.2020 in Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD & GR), Ministry of Jal Shakti regarding 351 polluted river stretches based on the directions of Hon'ble NGT in the matter OA No. 673 of 2018

The 2nd meeting of the Central Monitoring Committee constituted by Hon'ble NGT in the matter OA No. 673 of 2018 was held through Video Conferencing with the States on 19.02.2020 at 10.30 AM in Conference Room, DoWR, RD & GR, Ministry of Jal Shakti under the Chairmanship of Secretary, DoWR, RD & GR. The list of participants physically present at the meeting is at *Annexure-I.*

II. Secretary, DoWR, RD & GR, Ministry of Jal Shakti, welcomed all the participants and highlighted that as decided in the previous meeting, the monthly review meetings of the Committee shall be held through Video Conferencing and the State officials shall be requested to attend the meeting physically only on quarterly basis. It was informed that teams constituting of officials from National Mission for Clean Ganga (NMCG) and National River Conservation Directorate(NRCD) in the Ministry and Central Pollution Control Board (CPCB) had visited 5 States – Assam, Gujarat, Madhya Pradesh, Maharashtra and Telangana, having maximum number of polluted river stretches, during the period 29th January-7th February, 2020. During the visit, it was noticed that officials in Assam were mostly unaware of the NGT orders of 6th December, 2019 in the matter and hence little progress was reported to the team.

Secretary, DoWR,RD&GR, Ministry of Jal Shakti informed that till date, Monthly Progress Report (MPR) has been received from 11 States only (Punjab, Haryana, Puducherry, Delhi, Chhattisgarh, Meghalaya, Gujarat, Assam, Tripura, Himachal Pradesh, Jammu & Kashmir) and directed the remaining States to submit the first MPR immediately. He also directed all the States to submit stretch-wise MPR in future to NMCG by 20th of every month for compilation and onward submission to Hon'ble NGT (as per the format attached).

Further, Secretary, DoWR, RD & GR, stressed that as for river rejuvenation establishment of only STPs may not be sufficient, the States may adopt techniques for management of solid waste, and work for restoration of floodplains, groundwater recharge and augmentation through rain water harvesting etc., industrial waste remediation and by developing biodiversity parks along the banks of the river, which will help in augmenting the flow in rivers. Further and in particular for non-perennial rivers, it may happen that even after construction and operation of STPs, rivers may not be rejuvenated with flows of fresh water

as sufficient flows are not available in these non-perennial rivers / stretches. Therefore it is essential that efforts for bring water back to the rivers are concurrently taken. He remarked that this process is definitely a slow process but has to be taken up through persistent efforts. It was highlighted that as a number of STPs constructed are either non-functional or are not optimally utilized due to poor O&M, therefore the States must ensure proper utilization of the existing STPs by increasing sewerage coverage including household connectivity and providing O&M cost for a period of 10-15 years. The States were suggested that the STPs can be built on Hybrid Annuity Models (HAM) or on One City One Operator basis. States may consider visit of flow of STP projects being constructed under HAM in Ganga basin. It was informed that the states of Gujarat & Maharashtra have good treatment capacity available but still have very large number of polluted river stretches, which would also be due to non-availability of water for dilution. All the States must develop a monitoring mechanism, online or app based, for monitoring the functionality of the STPs and the discharge water quality. Also, one officer in each State may be earmarked to compile and regularly monitor all STP data and ensure that corrective action is taken by all the concerned agencies.

The States were directed to submit revised Action Plans for Priority III & IV to CPCB by the end of February, so that the same can be approved as per the NGT timeline of 31.03.2020.

Secretary, DoWR, RD&GR informed that most of States have, in general, expressed inability in implementation of bio-remediation/ phyto-remediation works as well as completion of STP projects within timelines directed by NGT orders. In addition, they have also informed that based on recent monitoring of river water quality, number of polluted stretches have changed (reduced) from those forming part of NGT orders. Accordingly, Secretary, DoWR, RD&GR desired that with regards to relaxation in deadlines for bio-remediation works, STP completion and change in category of polluted stretch or reduction in number of polluted stretch, the States may approach Hon'ble NGT for the same. Further,

III. Subsequently, State-wise discussions held are as follows:

1. Madhya Pradesh

Principal Secretary (Environment) informed the following:

i. Out of 22 polluted river stretches identified in Madhya Pradesh, 3 stretches are categorized under Priority – I (Chambal, Khan, Kshipra), 1 under Priority –II (Betwa),

1 under Priority –III (Sone), 3 under Priority –IV (Gohad, Kolar, Tapi) and 14 under Priority –V.

ii. 5 STPs are existing in the catchment area of 3 polluted river stretches of Chambal, Khan and Kshipra.Further,8 STPs having 197 MLD capacity are proposed.

iii. Bio-remediation works for treatment of major polluting drains are to be taken up in a month's time.

iv. Most of the STP projects under construction have a component for providing O&M cost of 15 years for the plants.

v. The STPs will have SCADA system installed for monitoring the water quantity and quality.

vi. Best practices are being adopted for management of solid waste in the State.

2. Delhi

Secretary (Environment) and CEO Delhi Jal Board informed that Action Plan of Delhi with respect to Priority I polluted river stretch (Yamuna) has not yet been approved by CPCB and the revised Action Plan is proposed to be considered by CPCB in its next meeting on 25th-26th February 2020. Further, it was informed that following actions are being taken by the Government for reducing the pollution load on the river:

i. DJB is trying to the complete the on-going projects by the timeline directed by Hon'ble NGT of 31.03.2021.However few projects may exceed the completion timeline and are expected to be completed by 2022 as per the contractual agreements.

ii. The on-going Interceptor Sewer Project (ISP) for trapping of 242 MGD of waste water is expected to be completed by 31.03.2020.

iii. A new STP of 70 MGD capacity under-construction at Coronation Pillar is expected to be commissioned by October, 2020.

iv. Chief Secretary, Delhi is reviewing the progress for setting up a mechanism for undertaking phyto-remediation or bio-remediation of the drains.

Secretary, DoWR,RD&GR, Ministry of Jal Shakti pointed out that even after trapping of 242 MGD of wastewater, the same will not be treated due to gap in treatment capacities of the nearby STPs and therefore recommended to expedite the construction of new STPs under YAP-III projects. Further, it was recommended that existing STPs in Delhi may be properly maintained and operated in order to have full utilization of the infrastructure. It was also

highlighted that few projects have been inordinately delayed and efforts may be made to sort out the bottle necks and complete the projects in a timely manner.

3. West Bengal

Chief Secretary, West Bengal informed that out of the 17 polluted river stretches identified in West Bengal, 1 stretch falls under Priority-I and 1 stretch falls under Priority – II, for which Action Plan has been approved by CPCB. Remaining 15 stretches are categorized under Priority III to V, for which revised Action Plans will be submitted to CPCB shortly. Further following information was presented:

i. An Environment Monitoring Cell under the Chief Secretary has been constituted and regular meetings are being held. Besides, inter departmental Committee (RRC) has been constituted which meets twice a month.
ii. Out of 56 drains, 55 are in tidal zones, therefore bio-remediation may not be possible. Technical assistance was requested from the Ministry.
iii. For projects proposed under HAM, sufficient bids are not being received, therefore a request was made to send a team of officials from the Ministry to assist the State Government.
iv. 125 ULBs have their own solid waste processing plants and door to door collection and segregation is happening.
v. All the industries in West Bengal have their own ETPs.
vi. For an operational leather complex at Kolkata, 4 CETPs are existing for treatment of industrial wastewater and 4 CETPs are under-upgradation.
vii. An Institutional arrangement has been created, vide which for each river, one State government agency (one river one agency concept) has been assigned the responsibility of management. For example, Irrigation & Water Resource Department is responsible for river rejuvenation.

Secretary, DoWR,RD&GR, Ministry of Jal Shakti informed that a team from NMCG had visited West Bengal recently to review the progress of Namami Gange projects and to resolve the tendering issues arising in the projects. Further, it was recommended that issues in non-operational existing Waste Stabilization Ponds may be rectified and the same should be optimally utilized until the creation of new additional treatment facilities.

4. Punjab

Principal Secretary (Department of Environment, Science & Technology) informed that District Committee, RRCs and Monitoring Committee (of NGT) has been constituted to oversee the implementations of projects for pollution abatement of rivers in the State. Further following details were informed:

i. Of the 4 polluted river stretches identified, 2 are categorized under Priority 1 (Ghaggar, Satuj), 1 (Kali Bein) under IV and 1 (Beas) under V. Major polluting drains in the stretches have been identified.
ii. For restoration of polluted river stretches 90 STPs are proposed, out of which for 65 STPs funding has been sorted out and for remaining 25 STPs funds are yet to be tied up.
iii. To meet the financial obligations for prevention and control of water pollution in the State, stamp duty has been increased by 1%. That would facilitate and expedite compliance of the orders of NGT in letter and spirit.
iv. To cater to the domestic and industrial discharges into Budha Nalla from Ludhiana, the State Government has approved a project at a cost of about Rs.650 crore for setting up STPs/ETPs and the CETPs.
v. Efforts are also being made to increase the flow in the rivers.

Secretary, DoWR,RD&GR, Ministry of Jal Shakti pointed out that due to high pollution load in River Satluj which is also being contributed by Budha Nala, the water being received in Rajasthan through the feeder canals is having high BOD and COD. The issue has also been raised in Cabinet meeting and it was agreed that Punjab Government may urgently implement the pollution abatement projects.

5. Odisha

Principal Secretary (Department of Urban Development) informed that out of the 17 polluted river stretches identified in the State, 1 is categorized under Priority – I (Gangua) and remaining 16 are categorized as Priority III to V. Further, following was informed:

i. In Gangua river stretch, 4 STPs are under commissioning, one 75 KLD septage treatment plant is existing, 10 outfalls in Gangua have been identified, which are proposed to be treated by March, 2021.
ii. For remaining stretches, STPs and septage treatment plant are proposed.

iii. The State is facing issue in implementing insitu-bioremediation projects for the drains, with respect of identification of appropriate agency and technology.

iv. Funding for various works is not an issue.

v. For bio-remediation of drains, NEERI has been approached, but the State Government may not be able to implement the project within the stipulated NGT timeline of March, 2020.

Secretary, DoWR,RD&GR, Ministry of Jal Shakti appreciated Odisha for adopting septage treatment management of wastewater as an alternative to creations of STPs, and recommended that other States may also adopt such technologies, wherever feasible. Further, it was suggested that other experienced agencies may be approached for implementation of bio-remediation projects.

6. Kerala

Principal Secretary (Environment)informed that STP at Thiruvananthapuram for river stretch in Priority I (River Karamana) is expected to be completed by 31.03.2021. As per the latest river water quality monitoring data, 80-90% of 13 river stretches are complying with the norms, while 30-70% are complying in the remaining 8 stretches. For the 20 stretches categorized under priority IV to V, Action Plan have already been submitted to CPCB.

7. Bihar

Principal Secretary(Department of Environment& Forest) informed that out of the 6 polluted river stretches identified, 1 stretch is categorized into Priority III (Sirsia) and the remaining 4 stretches into Priority V.River Sirsia originates from Nepal and by the time it enters India, it already ishighly polluted due to discharge from industrial units in Nepal. The matter needs to be taken by Government of India with Government of Nepal. For river stretches in Priority V (Farmar, Ganga, Poonpun, Ram Rekha, Sikrahna), alternative treatment technology has been proposed, for which technical assistance is required from the Ministry.

Executive Director (Technical), NMCG informed that submission has been made by Monitoring Committee of NGT in the matter OA No 06 of 2012 to NGT that based on the report of CPCB, NEERI and Jamia Millia Islamia, implementation of bio-remediation projects at all locations may be difficult. For such projects, preliminary survey of the identified location of drains, identification of agency competent to carry out bio-remediation works, preparation of DPR followed by Expression of Interest (EoI) basis, etc. has been

recommended before actual works are implemented. Orders of NGT on the matter are awaited.

Secretary, DoWR, RD&GR, Ministry of Jal Shakti recommended that report of the Monitoring Committee of NGT may be shared with the States. NMCG along with the NRCD and CPCB may organize a one day Workshop on alternate sewage treatment technologies, including bio-remediation/ phyto-remediation and septage management, for sensitizing the States with the different technologies and agencies available.

8. Haryana

Additional Chief Secretary (Environment Department) informed that State has already submitted Action Plans for setting up of STPs and laying of sewerage. Most of the project activities shall be completed by December, 2020 but a few may be completed only by December, 2021.

Director (Technical-III), NMCG pointed out that Haryana has sewage treatment capacity in excess of generation but the effluent flowing in drains joining rivers is having BOD above 60 mg/l.

Secretary, DoWR, RD&GR, Ministry of Jal Shakti highlighted that pollution load in rivers implies the STPs/ CETPsin Haryana are either not functioning or effluent is being by-passed. Therefore,the need for rectifying the defects in the existing STPs/ CETPs and making them fully operational so as to increase the utilization capacity and also control of industrial pollution in the cities of Yamuna Nagar, Sonepat, Panipat, Gurgaon and Faridabad was emphasized.

9. Jammu & Kashmir

Member Secretary, J&K PCB briefed about the 9 polluted river stretches of J&K and informed that Action Plans for 8 stretches categorized under priority III to V has been submitted to CPCB. Further, MPR has already been submitted to Ministry of Jal Shakti in the prescribed format for the month of January 2020.

Regarding the Priority-II river stretch(Devika), it was informed that work on the sanctioned project is in progress and 20% physical achievement has also been achieved with expenditure of about Rs. 27.00 crores.All efforts shall be made to meet the scheduled timeline for

completion of project by March, 2021 with the establishment of all the 3 STPs and sewage networking.

The progress achieved w.r.t Tawi River polluted stretch (Priority IV) and completion of pending 50% sewerage networks for Jammu city by March 2021 was also discussed. Further, it was informed that sewerage surcharge is being levyed for setting up STPs, 70% work for plantation and soil conservation under CAMPA funds have been completed.

Chief Engineer, UEED informed that the only polluted river stretch in J&K where industrial effluents are involved is Basanter River (Priority V), as the Samba Industrial Estate is situated at the bank of River Basanter. The work for CETP for the Samba Industrial Estate is 80%complete as on date.

The Project Feasibility Reports for financial assistance for remaining polluted river stretches have also been submitted to Govt. of India for consideration, whereby, some queries regarding Project Feasibility Report submitted for Banganga River rejuvenation have been raised by Govt. of India, which shall be replied by the UEED shortly.

With regards to the Devika project, Secretary, DoWR, RD&GR, Ministry of Jal Shakti, directed the State Government to release the Central share to the implementing agency without any time lag and also the State's share to avoid further delays in order to meet the time lines set by NGT. The State Government was asked to submit the Utilization Certificates to consider further release of funds for the project. Regarding other identified polluted river stretches (Priority III-2, Priority IV-2 and Priority V-4) in J&K, the State Government was suggested not to rely on financial assistance under the NRCP, but to explore funds from other schemes namely, AMRUT, or to arrange from their own resources. It was clarified that the States/UTs/local bodies are responsible for sewage treatment by setting up required sewerage infrastructure to meet wholesomeness of water bodies, and compliance of the orders of NGT shall not be linked with the technical/financial assistance from Ministry of Jal Shakti.

10. Assam

Principal Secretary (Department of Environment & Forests) informed that he has been nominated as the Nodal officer to oversee the implementation of Action Plans in the State. RRC have been constituted and water quality data is being regularly uploaded on State PCB website.

Further, it was informed that as per CPCB list there are 44 polluted river stretches in Assam. However, as per the latest monitoring done by Pollution Control Board Assam (PCBA) there are only 15 polluted river stretches, out of which 5 river stretches fall under Priority I and 10 river stretches fall under Priority V. Cleaning of Borsola & Silsako Beels have already been started by the concerned organizations and proposal for in-situ remediation of drains has also been received, which is under examination and would be implemented as per NGT orders.

Director General, NMCG informed that the team of Ministry which visited Assam in first week of February 2020, has reported that the fresh water flow from Bashistha – Bahini river which used to meet Bharalu river has been stopped due to construction of diversion structure some 15 years ago to stop the flooding in the area. DG, NMCG requested State Government to consider releasing some amount of fresh water into Bharalu river from Bashistha – Bahini river for dilution purpose, as otherwise the river stretch would continue to be polluted even after STPs are constructed and not meet the desired river water quality criteria.

The Principal Secretary (Environment & Forest Department) informed that the Revenue and Disaster Management Department has been already requested to ensure removal ofencroachment along Bharalu during the meeting held on 04.02.2020.

Secretary, Ministry of Jal Shakti stressed on the timelines set by Hon'ble NGT for taking up work of proposed STPs in connection with 4 polluted river stretches (Bharalu, Silsaku, Sarusol, Borsola) located in Guwahati. Till completion of STPs, it was suggested in-situ bio-remedial measures in the drain flowing into aforesaid four polluted river stretches may be taken up for which required consultancy and technical support may be taken from NEERI or other agencies. With regard to reduction in number of polluted river stretches, State needs to make submission before Hon'ble NGT. It was also suggested that the States could explore taking sewage management with fund available under AMRUT and Smart Cities Mission programmes of MoHUA. Action for creation of STPs/ bio-remediation is to be taken by States without waiting for funding from Government of India etc.

11. Andhra Pradesh

Member Secretary, APPCB informed that 5 polluted river stretches has been identified in the State, out of which 2 are in priority – IV and 3 are in priority – V. There is no industrial effluent discharge into the five polluted river stretches and pollution is due to discharge of sewage from nearby towns. So far, 4 RRC meetings have been conducted with stakeholders to review the progress on implementation of the Action Plans. The revised Action Plans will

be submitted to CPCB after placing in the RRC meeting for approval. Proposals have also been submitted to NRCD for assistance for constructions of STPs.

Secretary, DoWR, RD&GR, Ministry of Jal Shakti directed the State to submit revised Action Plans to CPCB latest by the end of February, so that the same can be approved before 31.03.2020. Further, it was suggested that the State may seek financial assistance from other Central/ State schemes, as funding under NRCD may not available due to paucity of budget allocation for the scheme.

12. Telangana

Special Chief Secretary, Telangana, informed that out of 8 river stretches, Action Plans for 3 polluted river stretches in Priority I & II has been approved and Action Plansfor PriorityIV - V has been submitted. Priority I& II river stretches have sewage generation of 1754 MLD, while the existing STP capacity is of 770 MLD and for the gap in treatment capacity, DPR has been prepared. Depending on the availability of funds, projects shall be implemented.NEERI has been consulted for in-situ remediation of five major stretches and plantation activities has been under taken in the State. It was also informed that Hon'ble NGT has had a separate meeting with the Chief Secretary, Telangana on various environmental issues relating to the State, including the issue of polluted river stretches.

13. Jharkhand

Principal Secretary (Forest &Environment) informed that there are no polluted river stretches in priority I, II and III in the State. Inventorization of industries falling in the polluted river stretches has been completed and all the industries have ETPs. 2 STPs are under construction and shall be completed by March, 2021. One Septage treatment plant is under-construction and likely to be completed by end of the year 2020 and 5 more are planned. Treatment of catchment area is being done by plantation on large scale for maintaining e-flow as except Ganga, all other rivers are rain-fed. For Damodar and Subarnarekha river stretches, 24x7 water quality monitoring is being launched by Jharkhand Pollution Control Board by next month.

Secretary, DoWR, RD&GR appreciated that inventorization of Grossly Polluting Industries (GPIs) and industries in the State has been done and recommended that all States must inventorize all the GPIs in their respective States. The State was also directed to send the MPR for January, 2020 immediately.

14. Chhattisgarh

Principal Secretary (Housing & Environment) informed that for reducing pollution load in all 5 identified stretches (Priority IV &V), 12 STPs are proposed of which 6 STPs are under construction, 1 STP is being taken up in PPP mode and financial assistance for 5 projects is awaited. These are expected to be completed by 31.03.2021. Further, it was informed that RRC meetings are being held regularly and fortnightly review meeting is taken by Chief Secretary, MPR for the month of January has been submitted. 962 industries are operational, out of which 843 industries have established the ETP and rest 119 industries which have not installed ETPs have been issued directions for closure. Action is being taken against dumping of solid waste into rivers and plantation activities along the banks of the identified river stretches are being undertaken.

15. Mizoram

Member Secretary, Mizoram Pollution Control Board informed that 9 identified polluted river stretches are categorized under Priority III & IV, for which Action Plans have been submitted to CPCB. Further, the water quality in all the 9 stretches, with respect to BOD are below prescribed limits of 3mg/L in all occasions from 2016 onwards till date, except for one monitoring month in each river. Therefore, CPCB has been requested for re-consideration. Secretary, DoWR, RD&GR informed that the State needs to make submission in this regard to Hon'ble NGT.

Member Secretary, Mizoram Pollution Control Board informed that not many actions have been initiated in the State yet due to paucity of funds. A total of Rs. 68.45 crore is earmarked for implementation of the Action Plans. Therefore, the State Govt. has submitted the Action Plans to the Ministry of Jal Shakti for financial assistance. The Action Plan includes proposal for construction of 4 STPs in bigger towns and grey water management systems, proper SWM for villages, catchment areas management through control erosion/siltation, massive plantation, rain water harvesting, public participation, etc.

Secretary, DoWR, RD&GR, Ministry of Jal Shakti informed that proposals have not been received by NRCD and suggested that a team of officials from NRCD, NMCG and CPCB may visit Northern Eastern States during their next visit to assess the situation and work out optimal solution based on State specific problems. Further, it was recommended that the States, may emphasize on rain water harvesting, conservation of wetlands and explore alternate treatment technologies for increasing the flow of rivers.

16. Gujarat

Member Secretary, Gujarat Pollution Control Board informed that a large number of rivers in Gujarat are non-perennial, as a result of which there is no e-flow in the rivers during lean season. As per the latest water quality monitoring, out of 20 identified polluted river stretches, 12 of the stretches are found to be non-polluted having BOD less than 3 mg/l. Total 2494 MLD sewage is generated, of which 1897 MLD is treated in 26 existing STPs (including 2 recently completed STPs) and further 63 STPs having treatment capacity of 1232 MLD are proposed. There are a number of unresolved land issues and delay in tendering process and that the State is attending these issues on priority. State also sought technical guidance with regard to in-situ remediation. For industrial waste water disposal, 3 pipelines have also been proposed for deep sea disposal.

Director General, NMCG raised concern over the deterioration of water quality of River Vishwamitri, which now falls under Priority-I, and desired that action needs to be taken urgently in this regard.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, highlighted that during the visit of team from Ministry it was observed that 6 STPs are not complying with the discharge norms. He also directed the State to quickly resolve the land issues for allotment of land for new STPs. Further, he raised concern over the slow progress of the projects sanctioned under NRCP on Sabarmati and Tapi rivers and the delay in release of Central Share to ULBs by the State Government. It was also directed to improve compliance by industry and tackle the issue of illegal discharge by the industries in the sewer networks.

Further, subsequent to the issue of Minutes of the 1st Meeting of CMC held on 08.01.2020, the State has requested correction as under:

i. "Further, it was informed that pollution in rivers Amlakhadi, Bhadar, Bhogavo & Khari is primarily due to industrial clusters in their vicinity" to be read as "*Further, it was informed that 2 polluted river stretches (Bhadar and Sabarmati) are having treated industrial effluent discharge along with domestic discharge while remaining 4 stretches are having pollution due to domestic discharge only*".

ii. "162 STPs are proposed in Gujarat, of which 2 STPs have been completed" to be read as "*As per the Action Plan, 65 STPs are proposed in Gujarat for the management of sewage with reference to polluted river stretches out of which 1 STP is completed*".

17. Karnataka

Principal Secretary (Department of Environment) informed that the 17 identified polluted river stretches in the State are categorized under Priority III to V, for which revised Action Plans are to be submitted to CPCB. Further, agencies have been allocated the responsibility for monitoring the implementation works for 36 towns in the catchment area of 17 rivers stretch. Plantation activities are also being taken up in the State along these river stretches.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, directed the State to submit the revised Action Plans to CPCB by the end of February, 2020. Further it was suggested that the State may take steps to develop the Action Plans into projects and may also take up water conservation activities. The watershed management practices of the State were appreciated.

18. Tamil Nadu

Principal Secretary (Environment and Forests Department)informed that out of 6identified polluted river stretches, 4 stretches are categorized under Priority-I. These rivers are non-perennial and seasonal in nature. 10,900 operational industrial units have ETPs, 29 units have been issued closure notice and closure notices for 10 units are under-process.

Out of 36 operational CETPs, 32 are complying and 4 are non-complying, for which closure notices have been issued.

For pollution abatement of the river Vasista (Priority I), 5 MLD fecal sludge management plant (FSTP) is proposed and sludge treatment plant is under-construction. For pollution abatement of the river Thirumanimuthar (Priority I), 100 MLD STP is under commissioning at Salem. For pollution abatement of the river Sarabanga(Priority I), DPR is under preparation, FSTP is under construction for Thathampatti town and is expected to be completed by mid of this year. Forpollution abatement of the river Cauvery (Priority I), the State is implementing the project "Nadanthai Vaazhi Cauvery", for which DPR is under-preparation. For management of solid waste, actions such as prohibition on dumping in rivers, ban on use of single-use plastic are being taken up in the State. Further, treated wastewater reuse policy has been notified by the State.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti, raised concern over the water quality of River Vashistha where BOD of 675 mg/l has been reported by CPCB, indicating presence of industrial pollution. This needs to be examined on priority.

19. Meghalaya

Secretary (Urban Affairs) informed that for 2 polluted river stretches categorized under Priority I and II, DPR has been prepared for pollution abatement works and tendering process for STPs is expected to begin from March 2020. Bio-remediation has been proposed for stretches categorized under Priority IV and V for rural areas. Further, septage management plan is expected to be prepared by mid of this year 2020.

Secretary, DoWR, RD & GR, Ministry of Jal Shakti suggested that for North-Eastern States having high rainfall, creation of large number of STP may not be required and alternate technologies may be explored and adopted.

20. Sikkim

Member Secretary, State Pollution Control Board, Sikkim informed that the 4 polluted river stretches in the State are categorized under Priority V, for which Action Plans have already been submitted to the CPCB. These stretches as per the latest report are having BOD less than 3 mg/l. 7 hydroelectric projects in the State have installed flow meters and monthly reports on e-flow are being monitored. It was further informed that for pollution abatement of rivers, 6 STPs are existing, 2 STPs are on verge of completion and 3 STPs are under construction.

21. Himachal Pradesh

Secretary (Environment & Urban Development Department) informed that 2 STPs of 1 MLD each have been proposed for Parwanoo town for abatement of pollution in the stretch of River Sukhana (Priority-I), tenders for which has been opened and are expected to be finalized by March, 2020. Similarly, 2 STPs have been proposed for Kala Amb town for abatement of pollution in the stretch of River Markanda (Priority-II). Further, treatment of drains discharging into the two rivers Sukhana and Markanda, through bio-remediation has been proposed and Prof.C.R.Babu is being consulted for the same. It was also informed that the legacy waste dump at Parwanoo has been cleared. For plastic waste management, State Government has notified a Buy Back Policy for non-recyclable and single use plastics.

22. Uttar Pradesh

Member Secretary, UPPCB informed that Action Plans for polluted river stretches under Priority I & II have been approved and for Priority stretches II, IV and V have been submitted to CPCB. Total sewage generation is 3303 MLD, out of which 1867 MLD is being treated,

1067 MLD capacity STPs are under construction. DPR for 313 MLD is under preparation which is expected to be completed by March, 2022 for which relaxation from NGT shall be sought. 9655 Gram Panchayats have become liquid waste free and a large number of farm pondshave been rejuvenated. There are 6 CETPs, out of which 5 are complying and 1 at Mathura is non-complying, for which funding from NMCG has been sought. There are 1616 GPIs in critically polluted river stretches, out of which 137 have been closed and 87 have been issued show cause notice. Environmental compensation amounting to Rs. 20 Crore has been imposed, out of which Rs. 8 Crore has been collected. To ensure proper treated water quality from the STP, One City One Operator concept has been approved. In 5 stretches of River Yamuna, at 15 locations the BOD level has come down below 3 mg/l. With regard to e-flow, for 4 non-perennial rivers maintenance of e-flow will be difficult, for remaining 8 perennial rivers, e-flow maintenance study has been entrusted to IIT Delhi with a timeline of 1 year. For demarcation of floodplains, the Irrigation Department (UP) has proposed a time period of 9 months to complete the work.

23. Rajasthan

Member Secretary, Rajasthan Pollution Control Board informed that there are no polluted river stretches in Priority I, II & IV. Pollution in River Banas (Priority III) is due non-availability of flow in the lean season in the river as well as issues relating to overflow from Bislapur dam. In Kota, 160 MLD sewage is being generated and 155 MLD STPs are under construction and likely to be completed by June, 2022 and one more STP by March 2023. Out of 22 drains flowing into River Chambal, 10 drains are tapped and diverted to STPs and work is in progress for tapping of remaining drains. The samples from Punjab Canal have indicated long amount of pesticides and heavy metals and requested that the Punjab Government may be directed to ensure good water quality in the feeder canals going to Rajasthan from Punjab.

Secretary, DoWR, RD&GR indicated that 1 STP of 30 MLD capacity in Kota being funded under the Namami Gange programme is yet to be commissioned and directed State to ensure its early completion.

24. Maharashtra

Member Secretary, Maharashtra Pollution Control Board informed that there is a gap in sewage treatment capacity of 1026 MLD against sewage generation of 2728 MLD from towns along identified polluted river stretches, for which STPs of 1317 MLD capacity have

been proposed. It was informed that earlier it was proposed to complete these STPs by December 2024, however, after regular persuasion and meetings with the concerned local bodies (Municipal Corporation/Council, Nagar/Gram Panchayats), the same is proposed to be achieved now by December, 2023. In some cases, the scheduled completion will be December, 2021. In view of the revised time lines not in line with that directed by NGT, the State Government was again requested for ensuring in-situ treatment of drains joining the said river stretches.

In respect of the directions of NGT regarding Performance Guarantee to be taken from the contractors, MPCB informed that an appeal was filed in Hon'ble Supreme Court against the said orders of NGT, and the Hon'ble Court was pleased to stay the same.

It was also informed that local bodies, responsible for sewage treatment in their jurisdiction, require capacity building to expedite compliance of the orders of NGT. To facilitate that, MPCB has organized 4 Workshops do far.

In view of financial constraints of the concerned local bodies, MPCB has proposed to provide technical and financial assistance from their own resources for setting up sewage management facilities on priority basis. The State Government is also undertaking plantation works on both banks of polluted river stretches, rejuvenation of farm ponds as well as strict monitoring of industries so that no untreated effluent is discharged into the rivers.

25. Nagaland

Additional Secretary (Department of Water Resources) informed that out of 6 polluted river stretches identified, 1 stretch is categorized in Priority I (Dhansiri), 1 stretch in Priority III (Dzuna), 2 stretches in Priority IV (Chante, Dzu) and 2 in Priority V (Dzucha, Sano).

The State Government was directed by Secretary, DoWR, RD&GR to take necessary action in line with the Hon'ble NGT orders.

26. Daman, Diu and Dadra Nagar Haveli

Representative of Chairman, Pollution Control Committee informed that 1 polluted river stretch of the State is categorized in Priority-I (Damanganga), which as per the latest monitoring report falls under Priority II & III. For reduction in pollution load, 4.2 MLD STP is constructed in Daman, 16 MLD STP is proposed in Daman, 13 MLD STP is being constructed in Dadra Nagar Haveli & sewerage network is under process in Daman, Diu &

Dadra Nagar Haveli, NEERI is being engaged for bio-remediation/ phyto-remediation works and all the industries are being directed to adopt ZLD.

27. Puducherry

Secretary (Environment, Science & Technology) informed that all industries in Puducherry has been inventorized. Closure directions were earlier issued to 2 non-complying industries, which later have made their ETPs functional and were found to be complying. Further, it was informed that tenders have been floated for construction of STPs, toilets have been constructed along the river banks for eradication of open defecation, green belt development along the banks of rivers is being undertaken and biodiversity monitoring & indexing of the two river stretches is being taken up by the State. Ministry was requested to provide technical guidance for bio-remediation/ other alternate technologies.

28. Tripura

Director (Science, Technology and Environment) informed that RRC has been constituted, regular meeting are being held, minutes of the meetings are being uploaded on website of Pollution Control Board and MPR for the month of January 2020 has been submitted to the Ministry.

Further, it was informed that all 6 polluted river stretches categorized in Priority V are now within permissible limit of BOD less than 3 mg/l as per the latest water quality monitoring data. Therefore the State proposes to request NGT to re-consider the same.

29. Uttarakhand

SEE, Uttarakhand Environment and Protection Control Board, informed that out of the 9 polluted river stretches identified, 3 stretches are categorized under Priority-I, 1 in Priority II, 1 in Priority III and 4 in Priority IV. It was informed that for pollution abatement works for the stretch of river Suswa (Priority-I) is being covered in the project for Rispana and Bindal and with the commissioning of Jageetpur STP in Haridwar, no untreated sewage from Hairdwar shall be discharged into River Ganga (Priority IV).

30. Goa

No official from the State attended the meeting physically/ through Video Conferencing.

31. Manipur

No official from the State attended the meeting physically/ through Video Conferencing.

While concluding the meeting Secretary, DoWR, RD&GR highlighted the following points:

1. **Till date, Monthly Progress Report (MPR) has been received from 11 States only (Punjab, Haryana, Puducherry, Delhi, Chhattisgarh, Meghalaya, Gujarat, Assam, Tripura, Himachal Pradesh, Jammu & Kashmir) and directed the remaining States to submit the first MPR immediately (format again enclosed). All the States were also directed to submit stretch-wise MPR in future to NMCG by 20th of every month for compilation and onward submission to Hon'ble NGT.**
2. **All States to identify nodal officer for submission of MPR and coordination with NMCG in the matter. Particulars of nodal officer may be furnished for ready coordination (preferably Member Secretary, State Pollution Control Board).**
3. **All the States must develop a monitoring mechanism, online or app based, for monitoring the functionality of the STPs and the discharge water quality. Also, one officer in each State may be earmarked to compile and regularly monitor all STP data and ensure that corrective action is taken by all the concerned agencies.**
4. **The concerned States were directed to submit revised Action Plans for Priority III & IV to CPCB by the end of February, so that the same can be approved as per the NGT timeline of 31.03.2020.**
5. **With regards to relaxation in deadlines for bio-remediation works, STP completion and change in category of polluted stretch or reduction in number of polluted stretch, the States may approach Hon'ble NGT.**
6. **NMCG along with the NRCD and CPCB may organize a one-day workshop on alternate sewage treatment technologies, including bio-remediation/ phyto-remediation and septage management, for sensitizing the States with the different technologies and agencies available.**
7. **One team of officials from NRCD, NMCG and CPCB may visit Northern Eastern States during their next visit to assess the situation and work out optimal solution based on State specific problems. In addition, teams may also visit other key States. Similarly, teams should also visit some more states depending upon priority as was done in case of 5 states earlier.**
8. **States/UTs/local bodies are responsible for sewage treatment by setting up required sewerage infrastructure so that the rivers are not polluted and**

compliance of the orders of NGT shall not be linked with the technical/ financial assistance from Ministry of Jal Shakti.

****

Annexure-I

List of participants:

1. Shri U. P. Singh, Secretary, DoWR, RD&GR, Ministry of Jal Shakti – *in Chair*
2. Shri Rajiv Ranjan Mishra, Director General, NMCG cum Project Director NRCD
3. Special Secretary, Urban Development Department, Govt. of Delhi
4. Shri D.P. Mathuria, Executive Director Technical NMCG
5. Shri. B.B. Barman, Advisor, NRCD
6. Shri A. Sudhakar, Scientist E & Divisional Head, WQM-I, CPCB
7. Shri Brijesh Sikka, Sr. Consultant, NMCG
8. Dr. Pravin Kumar, Director Technical – III, NMCG
9. Shri Rajat Gupta, SSWMS, NMCG
10. Shri Saumya Mukhopadhyay, SES, NMCG
11. Shri G K Murty, Team Leader, NMCG
12. Shri Vijay Kumar, Assistant Civil Engineer, NMCG
13. Shri Vivek Raj, Scientist C, NMCG
14. Shri Rachit Andley, Project Manager, NMCG
15. Shri Avshesh Chauhan, ASA, NMCG
16. Ms. Nidhi Dwivedi, Project Officer Technical, NMCG
17. Shri Kumar Ajitabh, Project Officer Legal, NMCG
18. Mrs. Ruby Raju, Project Engineer, NMCG
19. Shri S.K. Srivastava, Additional Director, NRCD
20. Shri S.K. Singh, Deputy Director, NRCD
21. Shri A.P. Singh, Scientist E, NRCD
22. Smt. Savita Madhavi, Joint Director, NRCD
23. Dr. P.N. Rymbai, Scientist B, NRCD

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No. 673/2018 dated 06.12.2019)

Sl.No.	Activity to be monitored	Timeline	Submission of Progress by State/UT-Compliance Status
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	
	commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	
2	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	
5	Chief Secretaries may set up appropriate monitoring mechanism at State level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.	22.01.2020 22.01.2020	
	• Monitoring at State level must take place	Fortnightly Commencing 21.12.2019	
6	Progress report may be furnished by the States/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	
6.1	Progress Report may be comprised of details along with completion timelines on:		

	(i)	Identification of polluting sources including drains contributing to river pollution and action as per NGT order on insitu treatment		
	(ii)	Status of STPs, I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		
	(iii)	Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		
	(iv)	Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		
	(v)	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		
	(vi)	Preventing dumping of waste and scientific waste management including bio-medical wastes, plastic wastes and decentralizing waste		

	processing, including waste generated from hotels, ashrams, etc. (vii) Ground water regulation (viii) Adopting good irrigation practices, (ix) Protection and management of Flood Plain Zones (FPZ), (x) Rain water harvesting, (xi) Maintaining minimum environmental flow of river (xii) Plantation on both sides of the river (xiii) Setting up biodiversity parks on flood plains by removing encroachment		

ANNEXURE-III

यू. पी. सिंह, आई. ए. एस
U.P. SINGH, IAS
सचिव
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सत्यमेव जयते

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
श्रम शक्ति भवन
रफी मार्ग, नई दिल्ली-110 001
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
SHRAM SHAKTI BHAWAN
RAFI MARG, NEW DELHI-110 001
http://www.mowr.gov.in

DO No. Legal/OA 673/2018/NMCG/2019 (Part File) March 11, 2020

Dear Sanjay,

As you would be aware, Hon'ble NGT vide its order dated 06.12.2019 in OA No. 673 of 2018 in the matter of "News item published in the Hindu authored by Shri Jacob Koshy titled More river stretches are now critically polluted: CPCB, with Dr. Tudi Indrasena Reddy &Ors versus UoI & Ors" had directed that an institutional mechanism be evolved for monitoring compliance to its order by Chief Secretaries of all the States/ UTs at State level and at the National level by the Secretary, Ministry of Jal Shakti with assistance of National Mission for Clean Ganga (NMCG) and Central Pollution Control Board (CPCB).

2. As per the order, a meeting at the Central level is to be held with the Chief Secretaries of all States/ UTs at least once a month to take stock of the progress and to plan further action. Accordingly, 2 meetings at Central level have been held at my level so far on 08.01.2020 and 19.02.2020with the States, the minutes of which have already been circulated to the States for necessary action. Based on the discussions during the meeting held on 08.01.2020, teams comprising officials of NMCG, National River Conservation Directorate (NRCD) and CPCB have visited 5 States having large number of polluted stretches to review the pollution status (domestic and industrial), available sewage infrastructure and existing/ future gap to carry out Conditional Assessment and identify interventions required.

3. One team had undertaken a visit to Guwahati in Assam on 3rd - 5th February, 2020 to interact with various stakeholders, including representatives of local bodies and River Rejuvenation Committee (RRC) members, on various issues relating to pollution control in the identified polluted river stretches in the State. The copy of the Visit Report of the team is enclosed for your kind perusal. The major observations and recommendations of the visit are as under:

(i) Most of the stakeholders are not aware of the directions by the Hon'ble NGT as well as there is no coordination among various organizations for implementation of Action Plans submitted by Pollution Control Board Assam (PCBA) for Priority stretches I & II.

(ii) Out of 4 polluted river stretches in Priority I & II, only 1 is a river stretch whereas the others are lakes/ wetlands.

(iii) The construction of diversion structure in Bashishtha-Bahini river has resulted in no fresh water flow into Bharalu river. The Government of Assam should consider releasing some amount of fresh water from Bashishtha-Bahini river into Bharalu river.

(iv) Currently, there is no sewage treatment capacity in Guwahati. The preparation of DPRs needs to be expedited. As an immediate solution, Faecal Sludge Management may be considered in Guwahati till STP works are tendered and implemented.

(v) No action has been initiated towards bio-remediation of existing drains falling in the polluted river stretches. Though an inter departmental proposal has been developed for 2 stretches (Borsola Beel & Bharalu river) but tendering and award is yet to be taken-up.

(vi) There are significant variations in water quality of polluted stretches by CPCB in 2016 and currently analyzed by PCBA. This needs to be resolved between CPCB &PCBA.

4. I would request you to kindly direct the concerned officers to take necessary action on the points highlighted in the Visit Report and the decisions taken in the two review meetings at the Central level, ensure submission of monthly progress reports as well as compliance to the various directions of Hon'ble NGT issued vide its order dated 06.12.2019.

With regards,

Yours sincerely,

(U P Singh)

Shri Kumar Sanjay Krishna,
Chief Secretary,
Government of Assam,
Block C, 3rd Floor,
Assam Sachivalaya, Dispur,
Guwahati - 781006

Tour report for assessment of polluted river stretches in Assam

A. Introduction

1. The National Green Tribunal, Principal Bench at New Delhi, vide order dated 6th December, 2019 in OA No.673/2018 in the matter of News item published in 'The Hindu' authored by Shri Jacob Koshy titled 'More river stretches are now critically polluted: CPCB' has given certain directions as under:-

(i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28th August, 2019 in OA No.593/2017 by 31st March, 2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide order dated 22nd August, 2019 in the case of river Ganga i.e. Rs.5 lakhs per month per drain, for default in in-situ remediation and Rs.5 lakhs per STP for default in commencement of setting up of the STP.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the order dated 8th April, 2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22nd August, 2019 in the case of river Ganga i.e. Rs.10 lakhs per month per STP.

(iii) An institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

(iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs atleast once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

(v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

(vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious

consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

(vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

(viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

(ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the action plans prepared by the States which may start forthwith, if not already started.

(x) Rivers which have been identified as clean may be maintained.

2. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 22nd January, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. For the State of Assam, composition of the team was as below:-

(i) Shri Saumyasib Mukhopadhyay, Senior Environmental Specialist, NMCG
(ii) Shri Sanjay Kumar Singh, Deputy Director, NRCD
(iii) Dr. Shantanu Dutta, Additional Director, Shilong, (Representative from CPCB)

The present report provide a summary of the filed visit and discussion undertaken during the visit.

B. Background

4. Out of the identified 351 polluted river stretched reported, 44 such stretches are reported in Assam. However, only 4 such stretches are falling under Priority-I and Priority-II. The details of the polluted river stretches in Assam is shown in Table-1. The above team visited Guwahati during 03-05th February, 2020 to ascertain the ground reality and to interact with the stakeholders responsible for sewerage infrastructure to be/being created for the said polluted river stretches. The team visited various points on Bharalu river, Deepar Beel, Silsako & Borsola beel.

Table1: Polluted river Stretches in Assam:

S.No	Name of polluted stretches with pollution categorization	No. of such stretches	Brief details (Name of river/stretch)
1	No of Polluted stretched in Category-I	3	1.Bharalu river/drain (Guwahati to Chillari Nagar) 2. Borsola lake, Guwahati 3. Silisako lake in Guwahati
2	No of Polluted stretched in Category-II	1	Surusola Beel Guwhati
3	No of Polluted stretched in Category-III	4	Deepar Beel (Guwahati), Digboi, Kamalpur and Panchnai
4	No of Polluted stretched in Category-IV	3	Kharsang, Pagladia, Brahmaputra
5	No of Polluted stretched in Category-V	33	Barak, Baroi, Bega, Beki, Bhogdoi, Boginadi, Borbeel, Bordoibam Beel mukh, Burhidihing, Dhansiri, Dikhow, Dikrong, Diplai, Disang, Gabharu, Holudunga, JIA Bharali, Jhanji, Kalong, Kapili, Killing, Kohora, Kulsi, Malini, Mora Bharali, Parashali, Puthimari, Ranga, Samaguri, Sankosh, Son, Sonai, Tenga pukhuri,
	Total	44	

The photographs taken during the visit are placed at **Annexure – I**. A meeting with the stakeholders was also held in the Secretariat, Govt. of Assam under the Chairmanship of Commissioner & Secretary, Department of Environment & Forests.

As per the directions of NGT and also works assigned to the teams, discussions with the respective local bodies were focused on assessment of sewerage infrastructure (existing/futuristic) vis-à-vis the action plans submitted by Pollution Control Board Assam (PCBA) to the Central Pollution Control Board (CPCB). It was informed that action plans for polluted river stretches under Priority-I (3 nos) & II (1) were approved by CPCB in May/June, 2019. In respect of polluted river stretches under Priority-III (4 nos), IV (3 nos) & V (33 nos), actions plans although have been submitted by PCBA but yet to be approved by CPCB.

Stretch wise details of Priority I & II are given at **Annexure-II**, which includes information on towns/villages located thereon, sewage generation, treatment available and the gap, proposed

treatment, industrial activities contributing to pollution in the said stretch, and the present implementation status vis-à-vis the directions of NGT.

During the meeting all stakeholders were requested to provide the latest status on the implementation of Action Plan approved by the CPCB, however, it was found that the officials present in the meeting were not aware of the orders passed by the Hon'ble NGT on 06.12.2019. Hence, no present status was provided by any of the concerned organizations on the implementation of the Action Plan. In the meeting it was directed by the Commissioner & Secretary, Department of Environment & Forests, Govt. of Assam that each department responsible for implementation of Action Plan will notify a Nodal officer to interact with the Environment & Forest Department, Govt. of Assam. It was also requested to nominate a Nodal officer in the office of Chief Secretary as directed by the Hon'ble NGT. Secretary, Department of Environment & Forests, Govt. of Assam requested all the departments to submit the latest status report to him on the progress made by 06.02.2020. The Minutes of the meeting held on 04.02.2020 received from Govt. of Assam is placed at **Annexure – III**.

As per the Monthly Progress Report (MPR0 submitted by Govt. of Assam on 18th February 2020, the list of polluted stretches has been proposed to be modified as 15 instead of 44 as per the following details:

Priority River Stretch	Polluted Stretches	
	As per CPCB Report	Revised list as per the recent monitoring (PCBA JAN-Nov 2019)
Priority-I	3	5
Priority-II	1	-
Priority-III	4	-
Priority IV	3	-
Priority V	33	10
Total	44	15

4. Observations and recommendations

(a) During the meeting of the stakeholders, it was observed that there is no coordination among the various organizations for implementation of action plan submitted by PCBA for Priority I & II river stretches.

(b) It was also observed during the meeting that most of the stakeholders were not aware issued of the various directions by the Hon'ble NGT in their order dated 06.12.2019. Therefore, they were not able to intimate the latest status of the implementation of Action Plan.

(c) It was also observed that out of the 4 polluted river stretches (Priority I & II), only one is river stretch (namely Bharalu River) and rest are lakes / wetlands. The officials of PCBA informed that there are other lakes / wetlands which have been listed in the polluted river stretches such as Deepar beel which is also a Ramsar site. Further it has been observed that in many of such polluted river stretches (Priority III to V) the measured BOD is exceeding 3mg/l only in few occasions which may happen due to various reasons apart from pollution.

Therefore, it would be appropriate to consider revision of list of polluted river stretches by CPCB in consultation with SPCB.

(d) It was also observed during site visit that Basistha-Bahini river which earlier used to feed fresh water into Bharalu river has been diverted about 15 years ago by constructing a diversion structure resulting no fresh water flow into Bharalu river. The Assam Govt. may consider release some amount of fresh water from Basistha-Bahini river to Bharalu river.

Closure of Bashishtha-Bahini river at the Nutan bazar location

Condition of the Bahini river after closure of the diversion structure at Nutan Bazar resulting the river is now carrying only sewage flow feeding ultimately to Bharalu river at Jonali point.

(e) As per the approved action plan (priority I & II) and draft action plan (priority III, IV, V) of 44 polluted river stretches, it is observed that the catchment population is about 27,00,000 (2011) and has a sewage generation of about 290 MLD. At present there is no such sewage treatment capacity installed.

(f) The major towns falling in any of the polluted river stretches, their sewage generation, treatment capacity installed and GAP assessment is given below:

S.No	Major Towns	Priority	Contributing Population (2011)	Sewage Generation (MLD)	Existing Capacity (MLD)	GAP (MLD)	Proposed (STP and MLD)
1	**Guwahati and surrounding**						
(i)	Bharalu river (I)	I	655000	71	0	71	75 (3 STP)
(ii)	Borsola Beel (I)	I	122000	13.17	0	13.17	15 (1 STP)
(iii)	Silisako Beel (I)	I	392000	42.36	0	42.36	45(1 STP)
(iv)	Surusola Beel (II)	II	80000	8.64	0	8.64	0
(v)	Deepar Beel (III)	III	5000	0.54	0	0.54	0
	Sub-Total (A)		**1254000**	**135.71**	**0**	**135.71**	**135**
2	Tezpur	IV	103000	11	0	11	11 (1 STP)
3	Silchar	V	172830	19	0	0	76??
4	Nagaon	V	117722	13	0	0	16
5	Dibrugarh	V	40356	4.5	0	0	4.5
6	Digboi and Oil Town	III	41542	4.7	0	4.7	5
7	Jorhat	V	219565	23	0	23	36
8	Total			210			283

Source: Approved action plan (Priority I and Priority-II) and Draft Action Plan (Priority III, IV and V)

(g) At present there is no Sewage Treatment Capacity in the state. The installation of Sewage treatment capacity as proposed in Guwahati is under the purview of Guwahati Development Department (GDD). The specific status of the STP implementation, (like DPR preparation, Tendering status, project implementation) however have not provided during the visit nor in the MPR. The status of DPR preparation for STPs is to be expedited. GDD have directed on 15.02.202020, the concerned agencies for DPR preparation for STPs, bioremediation etc.

(h) It is also noted that no such action has been initiated yet towards bioremediation of existing drains falling to the polluted river stretches. As per the MPR, it is noted that an inter departmental proposal has been developed on 10.02.2020 for Borsola Beel and Bharalu river (both in Priority-I). However, status of tendering and award of such scheme is to be taken up.

(i) For an immediate solution Faecal Sludge management (FSM) may be considered in Guwahati till the STP works are tendered and implemented.

(j) PCBA's latest survey declares 15 stretches are polluted as compared to 44 stretches declared by CPCB. It needs to be reconciled.

(k) As mandated under the Water (Prevention & Control of Pollution) Act, 1974, CPCB may give directions to PCBA and/or local bodies to maintain wholesomeness of river stretches within a specified time frame.

(l) In case of sewerage works being/to be created by the local bodies (Municipal Corporations/Municipal Councils/Nagar and Gram Panchayat), PCBA may give directions under the relevant statutes namely, the Water Act, 1974, the Environment (Protection) Act, 1986 for the needful so as to comply with the orders of NGT in letter and spirit.

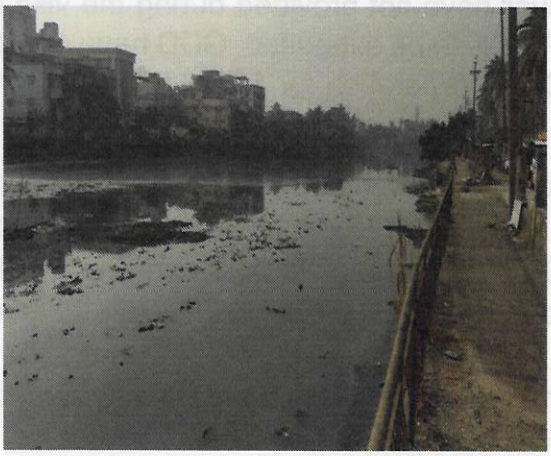
(m) There are 52 industries surrounding Guwahati, out of these ETPs are installed in each of the units, except in 5 such units. PCBA has issued closure notices for these industries.

(n) In respect of industrial activities, PCBA may ensure that no untreated effluent is discharged into water bodies, and such units to be covered under the statutory provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981 and the Environment (Protection) Act,1986.

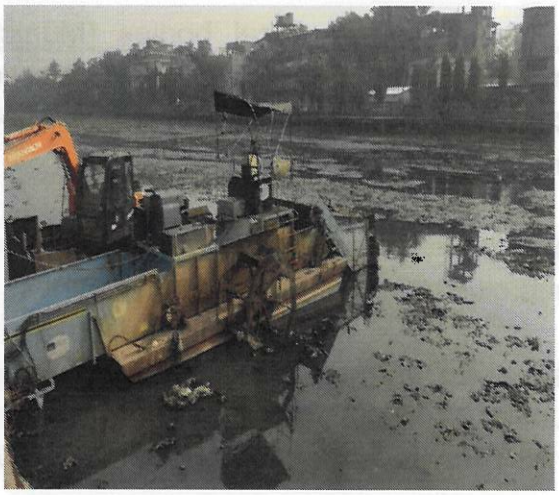
(o) It is informed by PCBA that DFO Social Forestry division Guwahati have already conducted survey in the catchment area of both sides of the Bharalu river and the plantation in the catchment area of Bharalu river will be starting from March 2020.

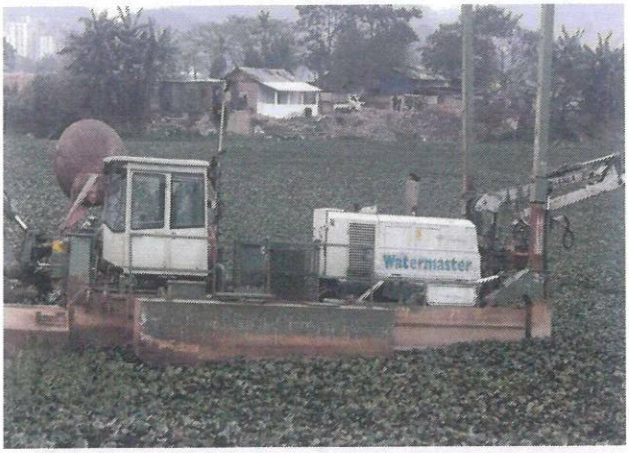
(Sh. Saumyasib Mukhopadhyay)	(Shri Sanjay Kumar Singh)	(Dr. Shantanu Dutta)
NMCG	NRCD	CPCB

Annexure - I

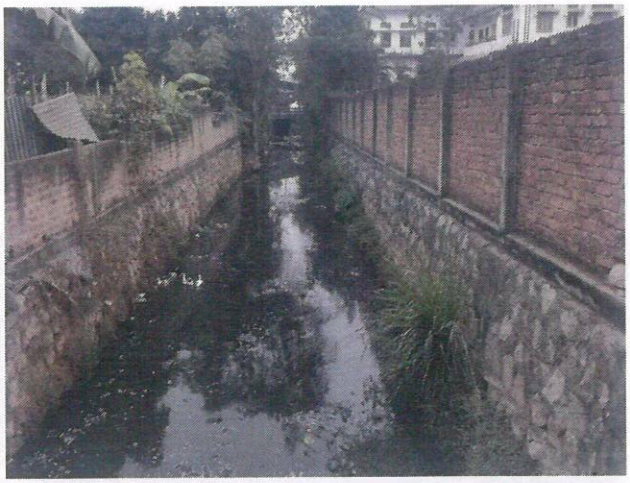


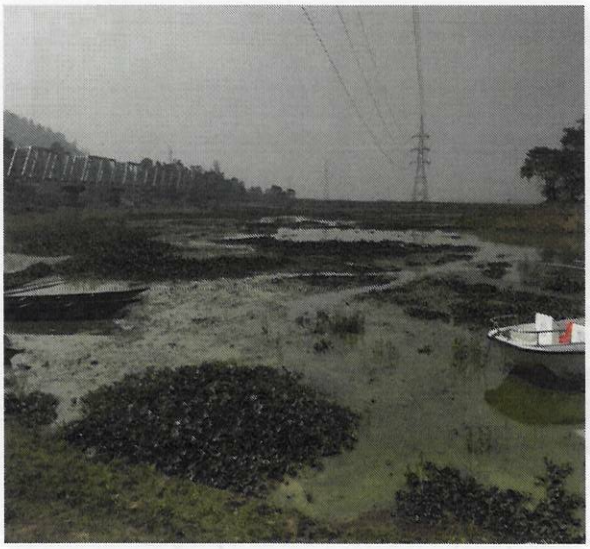
Pictures of Barsola Beel

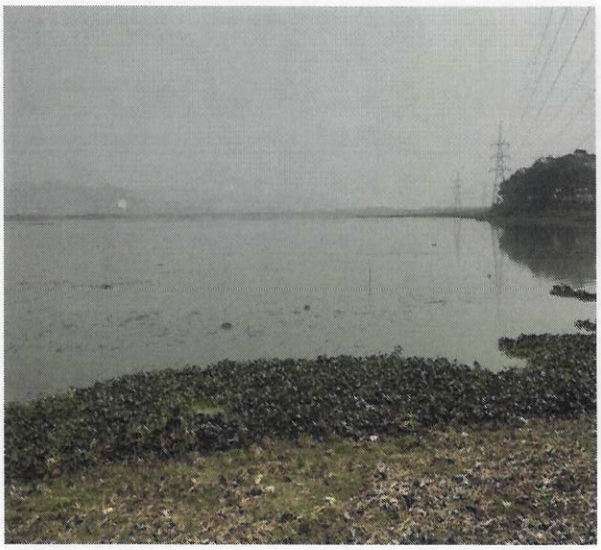




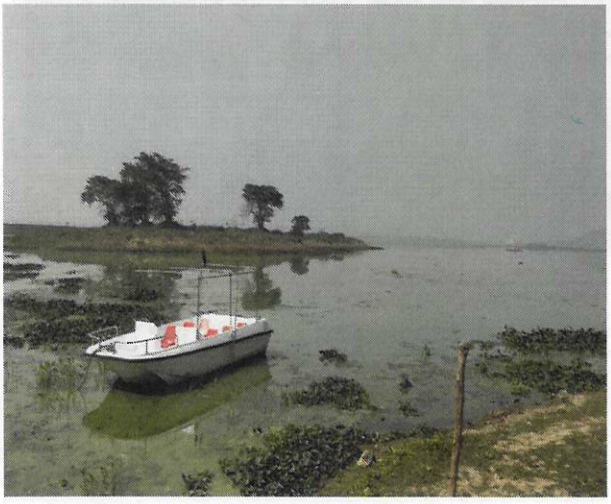
Pictures of Silsako Beel

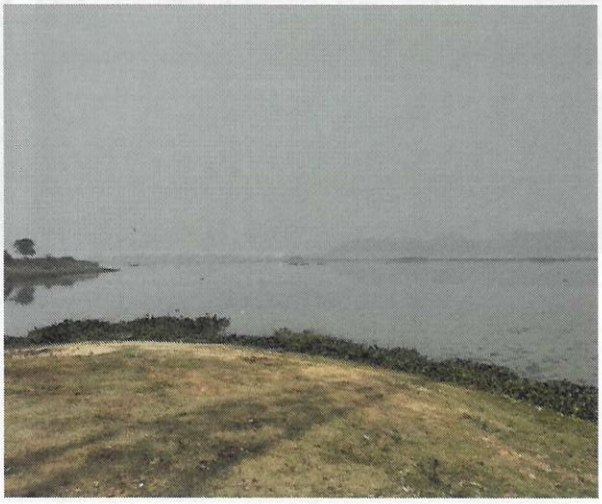






Pictures of Deepar Beel





Annexure - II

River		Priority as per CPCB list of polluted stretches / Present water quality as per monitoring of SPCB	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
BHARALU	(i) GUWAHATI TO CHILARAI NAGAR (ii) Brahmaputra (outfall) (iii) 6.2 km length (iv) Guwahati city (Tarun Nagar, Anil Nagar, Nabin Nagar, Bhangagarh, Ulubari, Sarabbhatti, Bishnupur, Athgaon, Fatashil Ambari, Kumarpara and Bharalumukh)	I	1. **Polluting Sources** - Sewage & Industrial waste **2. Sewage generation** – **70.74** MLD from catchment area of Bharalu river such as Jonali, Tarun nagar, Navin Nagar, Bhangagarh, Ulubari Sharabbhati, Bharalumukh etc. Discharging through 39 drains **3. Gap – 70.74** MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation.		i. Urban Development Department ii. Environment & Forest Department iii. Guwahati Development Department iv. Guwahati Smart Cities Ltd. v. Guwahati Jal Board vi. Guwahati Municipal Corporation vii. Pollution Control Board	

			4. Treatment proposed – **a.** Three (03) STPs of 15 MLD, 25 MLD and 35 MLD has been proposed at Guwahati city **b.** In- situ treatment of sewage by Bioremediation is proposed till STPs are constructed. **5.** Total 31 industries generating 5.65 MLD of waste water. All units have their own ETPs except 02 industries. Gap in treatment – NIL. Closure notices have been issued to 02 Nos. of industries and steps are being taken to ensure closure. 01 no. of industry has installed ETP and is functional. Status Report attached as **Annexure I.**				
				Commencement of setting up STPs by 31st March, 2020.			
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.			
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of			

				the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly Progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.			
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	(i) Stretch (ii) (Origin/Basin/ Sub-basin) (iii) Tributaries (iv) Major towns/Industrial Clusters	Priority as per CPCB list of polluted stretches / Present water quality as per monitoring of SPCB	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
BORSOLA	(i) ALONG SARABBHATTI, GUWAHATI (ii) 1.5 km length (iii) Guwahati city (iv) Chatribari, Rehabari, Paltan Bazar	I	**1. Polluting Sources** – Sewage & Industrial waste **2. Sewage generation – 13.17** MLD in the catchment area of river such as chatribari, rehabari,Paltan bazaar on the upstream etc, discharging through 02	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation		i. Urban Development Department ii. Environment & Forest Department iii. Guwahati Development Department iv. Guwahati Smart Cities Ltd. v. Guwahati Jal Board	

			nos of drains. **3. Gap – 13.17** MLD **4. Treatment proposed** a). One STP of 15 MLD capacity is proposed at the upstream side of the Beel b) In- situ treatment of sewage by Bioremediation till STP is constructed. **5.** Total 20 industries generating 374.5 KLD of waste water. All units have their own ETPs except 03 nos. Gaps in treatment – NIL. Closure notices have been issued			vi. Guwahati Municipal Corporation vii. Pollution Control Board	

			to 03 industries. and steps are being taken to ensure closure. Status Report attached as **Annexure II**				
				Commencement of setting up STPs by 31st March, 2020.			
				Connecting all the drains and other sorces of generation of sewage to the STPs by 31st March, 2020.			
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the			

				assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.			
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms			
River	**(i) Stretch** **(ii) (Origin/Basin/ Sub-basin)** **(iii) Tributaries** **(iv) Major towns/Industrial Clusters**	**Priority as per CPCB list of polluted stretches / Present water quality as per monitoring of SPCB**	**Major polluting sources** **Sewage generation/ gap/treatment proposed**	**Directions of NGT**	**Present status of implementation**	**State Govt/Agency responsible**	**Remarks**
SILSAKO	(i) ALONG CHACHAL, GUWAHATI (ii) 5 km length	I	**1. Polluting Sources -** Sewage	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation		i. Urban Development Department	

	(iii) Guwahati City (iv) Hengrabari, Satgaon and Mathgharia		**2. Sewage generation – 42.33** MLD in the catchment area of river such as Satgaon, Hengrabarii, Mathgharia etc, discharging through 02 nos of drains. **3. Gap – 42.33** MLD **4. Treatment proposed** a). One STP of 45 MLD is proposed b) In- situ treatment of sewage by Bioremediation till STP is constructed. **5.** Total 20 industries generating 374.5 KLD of waste water. All units			ii. Environment & Forest Department iii. Guwahati Development Department iv. Guwahati Smart Cities Ltd. v. Guwahati Jal Board vi. Guwahati Municipal Corporation vii. Pollution Control Board	

			have their own ETPs except 03 nos. Gaps in treatment – NIL. Closure notices have been issued to 03 Nos. of industries and steps are being taken to ensure closure. Status Report attached as **Annexure II**				
				Commencement of setting up STPs by 31st March, 2020.			
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.			
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be			

				evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.			
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	(i) Stretch (ii) Origin/Basin/ Sub-basin) (iii) Tributaries (iv) Major towns/Industrial Clusters	Priority as per CPCB list of polluted stretches / Present water quality as per monitoring of SPCB	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
SORUSOLA	(i) ALONG PALTAN BAZAR, GUWAHATI (ii) 560 Mtr. (iii) Guwahati City (iv) Athgaon, Tokobari and Chatribari	II	**1.Polluting Sources** - Sewage & Industrial waste **2. Sewage generation** – 8.640 MLD in the catchment area of river such as Athgaon, Tokobarii, Chatribari etc, discharging through 02 nos of drains. **3. Gap – 8.64** MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation		i. Urban Development Department ii. Environment & Forest Department iii. Guwahati Development Department iv. Guwahati Smart Cities Ltd. v. Guwahati Jal Board vi. Guwahati Municipal Corporation vii. Pollution Control Board	

			4.**Treatment proposed** – 1. No STPs proposed for these wetland. However, Installation of mechanical aerators is proposed, by using a combined system of low energy compressors and diffusers in the wetland. 2. In- situ treatment of sewage by Bioremediation till the installation of mechanical aerator and diffusers.				
				Commencement of setting up STPs by 31st March, 2020.			

				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.			
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.			
				Procedure for DPRs/tender process			

				to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

Annexure-III

MINUTES THE MEETING REGARDING IMPLEMENTATION OF ACTION PLAN FOR POLLUTED RIVER STRETCHES UNDER PRIORITY-I & II HELD ON 04.02.2020 AT 3.30 PM UNDER THE CHAIRMANSHIP OF COMMISSIONER & SECRETARY TO THE GOVERNMENT OF ASSAM, ENVIRONMENT & FOREST DEPARTMENT.

Members Present: As per list enclosed.

DECISIONS OF THE MEETING WITH Central Pollution Control Board and PCBA on 04.02.2020 :

a. Each department will notify a nodal officer and inform his/her contact details to ensure accessibility by the E & F department, PCBA and CPCB.
b. Chief secretary has been made respondent No. 1 by NGT, therefore Jal Shakti Ministry/CPCB requested a nodal officer (with contact details) on behalf of the Chief Secretary, Assam to coordinate and liaise with the Concerned Departments and Govt. of India / NGT.
c. NGT has directed the Chief Secretary to take review and monitoring meetings every fortnight and furnish monthly reports to the Ministry in the prescribed formats
d. The latest NGT order in OA. No. 673/2018 dated 06.12.2019 will be immediately circulated amongst all related department by 05.02.2020. All deptts will furnish status reports on the decisions mentioned in the following pages by 06.02.2020.

4/2/2020

Commissioner & Secretary to the Govt of Assam
Environment & Forest Department

Type	Action Points	Responsible Authority	Time Targeted	Decisions taken in the meeting
Industries	a) Strict observation/ monitoring of industrial effluent/waste water discharge strictly for compliance.	Pollution Control Board Assam	3 Months (August, 2019) To October, 2019)	a & b. PCBA will ensure that the closure notices issued to the industrials units functioning without ETPs should remain closed till they comply with the directions of NGT. PCBA is requested to submit inspection and compliance report of closure by 06.02.2020.
	b) Stringent action against non-complying industrial units			
	c) No industry should operate or continue manufacturing process unless they possess valid permission for ground water extraction from Central Ground Water Authority (CGWA)			CGWA will issue notices to all non compliant industries, 31 in Bharalu River area, 20 in Borsola Beel area and 20 Silsako beel for issue of NOC, and request District Magistrate, Kamrup (metro) District to take penal action as per law. Report will be furnished by 06.02.2020.
	d) Small service providing units like street food selling vendors, laundry etc should not be allowed to dispose solid, liquid or semi-liquid wastes directly into the drains or sewers.			d. GMC will submit compliance report within 06.02.2020
	e) Set up online monitoring system in the major industries.			e. PCBA will take necessary action and furnish action taken report.
	f) To stress all the industrial units to adopt cleaner technology and take appropriate measures for reduction of effluent, recycling and reuse of treated water.			f. Industries Department, DM, Kamrup (Metro) and Commissioner, GMC will joinly inspect and submit compliance report.
	g) Directions has been issued for Zero Liquid Discharge (ZLD) in the major polluting industrial units.			g. PCBA will check and ensure compliance.
Interception and treatment of raw sewage	a) The quality of waste water flowing in the drains of identified polluted stretch have to be analysed and studied to assess the drain wise characteristics of waste water.	PCBA/ Municipal Corporation/ ULBs/ District Administration/ Water Resource Department	2 Years (August, 2019 to March, 2021)	a. PCBA to take necessary action and furnish report by 06.02.2020.
	b) Concerned departments should design the installation of Sewage Treatment Plant (STP) based on flow details of the drains and utilization capacity and ensure that each households are connected to the sewers as applicable.			b & e.. GDD department WILL EXAMINE the current status of the STP projects taken up by the Guwahati Jal Board and the Guwahati Smart Cities Ltd. Status report may be submitted within 06.02.2020. Representative of Jal Shakti Ministry highlighted that the DPR for the STPs should be in conformity with the guidelines of nrcd.in of the Ministry. GMC will take urgent steps to shift the dumped solid wastes in the river / beels and maintain

				the required cleanliness of the water. SE (M), PWD(B) & NHD will submit a proposal to the PCBA & GDD with cost estimates for immediate bio remediation (in situ) of Bharalu river, Silsako, Borsola and Sarusola Beels. GDD will take action to float RFP/EOI accordingly. The status report may be submitted by 06.02.2020.
	c) Sewage Treatment Plant should also consider treatment and disposal of sewage for river catchment area settlement including discharge from toilets constructed under Swachh Bharat Mission			c & d. Guwahati development Department will ensure through GMC. the prevention of discharge from toilet and sewage to the four targeted river/beels (including toilets constructed under Swatchh Bharat Mission. Status report will be submitted by 06.02.2020.
	d) To trap the discharge using strainers before falling into river.			
	e) Channelization including diversion of sewage generated from households to sewer lines/interception of all the drains presently carrying sewage and for ensuing proper treatment through the upcoming STPs. Local administration should provide pucca latrines to all the households through Individual Households Latrines (IHHL) Scheme under Swachh Bharat Mission.			Same as b.
	f) Local administration should provide pucca latrines to all the households through Individual Households Latrines (IHHL) Scheme under Swachh Bharat Mission.			f. UDD will Take necessary action and furnish a status report by 06.02.2020.
Ground Water Assessment	a) Conducting survey regarding ground water usage by category wise such as domestic, community, industries etc. and also identification of over exploited and critical blocks in the river stretches with respect to the ground water extraction.	**PCBA/CGWA**	**Continuous**	a to e: PCBA and Central Ground Water Authority will take necessary action and furnish status report by 06.02.2020. GDD will inform the status of notification of revised building by laws and highlight provisions of rain water harvesting and anti pollution measures.
	b) Carry out assessment of			

	ground water survey in the catchment area of the identified polluted stretch once in a year to ensure quality.			
	c) All the industries should have valid NOC from CGWA.	PCBA/CGWA	**6 Months (February, 2020 to July, 2020**	
	d) To promote roof top rain water harvesting by the industrial, commercial including individual households thereby recharging the ground water.			
	e) Directions to be issued that no industries should inject their treated effluent for ground water recharging.			
Flood Plain Zone	a) Conservation of the river through watershed management.	**Soil Conservation Department/Water Resource/ Municipal Corporation /Forest Department/ Tourism Department/PWD Assam/District Administration**	**6 Months (February, 2020 to July, 2020)**	a. Soil conservation department will furnish a status report on relevant plans by 06.02.2020.
	b) Cleaning of the river bed and bank.			b. Water Resources Department will submit status report by 06.02.2020.
	c) Afforestation on both the banks to prevent soil erosion			c. DFO, Social Forestry will furnish status report on the project " Greening Guwahati"
	d) Recreational activities to be promoted.			d. Tourism department and GDD (GMDA) will furnish a status report.
	e) Erection of pathway of the river banks.			e. GDD (through Guwahati smart City Ltd.) and WR department will submit a status report by 06.02.2020.
	f) Prohibition of disposal of municipal, plastic, biomedical and other wastes in the polluted stretch of the river bank			f. GDD (through GMC) and DM Kamrup (m) will furnish action taken report by 06.02.2020.
	g) Demarcation of the flood plain zone.			g. WR deptt will furnish action taken report by 06.02.2020.
	a) Checking /removal of encroachment in the flood plain zone of the polluted river stretch	**Revenue Department/District Administration**	**To be decided by the Governme**	a. Revenue and DM deptt (through DC kamrup (m)) will submit status report by 06.02.2020.

			nt	
	The plan for the polluted stretches of the river may be implemented in a time bound manner by fragmenting activities as a) Modification of consent conditions in and around the polluted stretches.	**Pollution Control Board Assam**	**3 Months** **(August,2019** **to** **October, 2020)** **c) Monthly Basis**	a to d. pCBA will furnish status report by 06.02.2020.
	b) Surveillance of sources of pollution in contrast to the norms.			
	c) Assessment of water quality of the polluted stretches on monthly basis has already been commencing			
	d) The monitoring committee may convene meeting of Stakeholder organizations on Quarterly basis with under the chairmanship of Chief Secretary			
Solid Waste	a) Prohibition of direct disposal of solid waste in the river banks.	**Guwahati** **Municipal Corporation/ Water Resource Department**	**3 Months** **(November, 2019** **to** **January, 2020)**	a & b. GMC and WR deptt will furnish status report by 06.02.2020
	b) Frequent River Surface cleaning by removal of debris, plastics etc.			
Environmental Flow	a) Flow measurement of the river should be carried out by the concerned department and the record has to be maintained	**Water Resource Department**	**Continuous**	a, b & c: WR department will furnish status by 06.02.2020. Further WR department examine the request of PCBA to divert the flow of water of Bahini river to the Bharalu river at the Sluice Gate poini at Beltola, to ensure round the year flow of fresh water in the Bharalu river.
	b) Fresh water flowing through escape channels/small barrages should be checked.			

	c) The river can be of good potential for irrigation practices and should be carried out by the farmers.			
Public Awareness	a) Awareness programs to highlight the issues related with the direct discharge of solid waste and open defecation. b) Mass awareness to conserve water.	**Environment & Forest Department /UDD/GMC**	**Continuous**	**a &b:** PCBA and GMC will take all steps necessary for awareness generation on open defecation, discharge of solid wastes and conservation of water. Status report may be submitted within 06.02.2020.

4/2/20

Commissioner & Secretary to the Govt of Assam
Environment & Forest Department

MEMBERS PRESENT IN THE MEETING REGARDING IMPLEMENTATION OF ACTION PLAN FOR POLLUTED RIVER STRETCHES UNDER PRIORITY-I & II HELD ON 04.02.2020 AT 3.30 PM UNDER THE CHAIRMANSHIP OF COMMISSIONER & SECRETARY TO THE GOVERNMENT OF ASSAM, ENVIRONMENT & FOREST DEPARTMENT.

Sl. No.	Name & Designation of Officers	Mobile No.	Signature
1	Commissioner & Secretary, Revenue and Disaster Management Department.		
2	Commissioner & Secretary, Environment & Forest Department.	70860-56499	4/2/20
3	Commissioner & Secretary, Soil Conservation Department.		
4	Commissioner & Secretary, Tourism Department, Dispur. Jt Secy, Tourism	fosmdept.assam@gmail.com 98640-49859	4-2-2020
5	Commissioner & Spl. Secretary, Public Works Department.		
6	Chairman, Pollution Control Board, Assam		
7	Addl. PCCF, Social Forestry, Assam. Basistha, Guwahati-29.		
8	Secretary, Water Resource Department.		
9	Secretary, Public Health Engineering Department.		
10 for	Secretary, Urban Development Department.	8822356940 udddepartment.in	04/02/20
11	Commissioner, Guwahati Municipal Corporation, Panbazar, Guwahati-01.		
12 for	Regional Director, Central Ground Water Board, North Eastern Region, NH-37,Betkuchi, Guwahati-35.	9402197261 rdner-cgwb@nic.in	4.2.2020
13	Joint Secretary, Guwahati Development Department	(I. KALITA) 94350 14419	
14	Joint Secretary, Environment & Forest Department		
15	Member Secretary, Pollution Control Board, Assam	94353-08956	04.02.2020

MEMBERS PRESENT IN THE MEETING REGARDING IMPLEMENTATION OF ACTION PLAN FOR POLLUTED RIVER STRETCHES UNDER PRIORITY-I & II HELD ON 04.02.2020 AT 3.30 PM UNDER THE CHAIRMANSHIP OF COMMISSIONER & SECRETARY TO THE GOVERNMENT OF ASSAM, ENVIRONMENT & FOREST DEPARTMENT.

Sl. No.	Name & Designation of Officers	Mobile No.	Signature
16	S.K. SINGH DY. DIRECTOR, NRCD, MoJS	9868524421 sanjaysingh.21@gov.in	Sanjay Singh
17	Dr. S. K. Dhillon Addl. Director, CPCB	7005839700	SDhil
18	Saumyarib Mukhopadhyay Sr. Env. Specialist	9717218963	Samyrib
19	M.D. Adhikary. Sr. Env. Scientist, PCBA	9435743143	[illegible]
20	Shantanoo Bhattacharyya S.E (M), PWD(NH)	9957567647 shantanoobhattacharyya@yahoo.com	[illegible]
21	Dilip Kr. Talukdar SE(PHED) o/o the CE(PHE)W, Assam	9435127903	[illegible] asphe@rediffmail.com
22	J.N. Sarma E.E.(PHE) o/o the CE(PHE), Assam	7637816611	[illegible]
23	M. Hussain, Secy, Soil Conserv. Deptt	7086051680	[illegible]
24	Mrs Mandira Sarmah, U. Secy W. R. Deptt	9864151748 mandirasarma1204@gmail.com	[illegible] 4/2
25	A. Goswami D.C.F. o/o CCF.(S.F)	9401308534	[illegible]
26	F. Ahmed, Secretary GDD, Dispur	9401508349 gddassam@gmail.com	[illegible]
27	Kasturi Bharali, ACS Jt. Secy, Rev. & DM Deptt	9864017078 reevdm@gmail.com	[illegible] 4/2/20.
28	~~Indreswar Kalita~~ Jt. Secy. ~~E & F Deptt~~	~~9435014419~~	[illegible]
29			
30			

ANNEXURE - IV

यू. पी. सिंह, आई. ए. एस
U.P. SINGH, IAS
सचिव
SECRETARY
Tel. : 23710305
Fax : 23731553
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सत्यमेव जयते

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
श्रम शक्ति भवन
रफी मार्ग, नई दिल्ली-110 001
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
SHRAM SHAKTI BHAWAN
RAFI MARG, NEW DELHI-110 001
http://www.mowr.gov.in

DO No. Legal/OA 673/2018/NMCG/2019 (Part File) March 11, 2020

Dear Anil,

As you would be aware, Hon'ble NGT vide its Order dated 06.12.2019 in OA No. 673 of 2018 in the matter of "News item published in the Hindu authored by Shri Jacob Koshy titled More river stretches are now critically polluted: CPCB, with Dr. Tudi Indrasena Reddy &Ors versus UoI & Ors" had directed that an institutional mechanism be evolved for monitoring compliance to its order by Chief Secretaries of all the States/ UTs at State level and at the National level by the Secretary, Ministry of Jal Shakti with assistance of National Mission for Clean Ganga (NMCG) and Central Pollution Control Board (CPCB).

2. As per the Order, a meeting at the Central level is to be held with the Chief Secretaries of all States/ UTs at least once a month to take stock of the progress and to plan further action. Accordingly, 2 meetings at Central level have been held at my level so far on 08.01.2020 and 19.02.2020with the States, the minutes of which have already been circulated to the States for necessary action. Based on the discussions during the meeting held on 08.01.2020, teams comprising officials of NMCG, National River Conservation Directorate (NRCD) and CPCB have visited 5 States having large number of polluted stretches to review the pollution status (domestic and industrial), available sewage infrastructure and existing/ future gap to carry out Conditional Assessment and identify interventions required.

3. One team had undertaken a visit to Ahmedabad and Gandhinagar in Gujarat on 4th & 5th February, 2020 to interact with various stakeholders, including representatives of local bodies and River Rejuvenation Committee (RRC) members, on various issues relating to pollution control in the identified polluted river stretches in the State. The copy of the Visit Report of the team is enclosed for your kind perusal. The major observations and recommendations of the visit are as under:

(i) While adequate sewage treatment plant (STP) capacity is under development but most of the existing STPs in Ahmedabad are not complying with standards, for which Gujarat PCB needs to issue notice to Ahmedabad Municipal Corporation for non-compliance. The existing STPs in the city also need to be upgraded. In addition, illegal industrial discharges into the sewerage network need to be stopped.

(ii) Land issues in respect of STPs at Wadhawa (Bhogavo), Dafnala (Sabarmati), Kapurai & Tarsali (Vishwamitri), Vapi – Chandor (Damanganga) and Tapi Shudhikaran Pariyojna need to be resolved, as this is delaying the start of works on ground.

(iii) Compliance for completion of STPs in respect of Hon'ble NGT timeline seems challenging as certain projects are either under tendering or have land issues or DPR is not approved.

(iv) CETP project at Danilimda (Ahmedabad) and Deep Sea disposal pipeline project needs to be expedited for completion.

(v) No proposal for In-situ bioremediation of drains is under consideration.

(vi) There is deterioration in the water quality of River Vishwamitri which has now shifted from Priority II to I. Efforts should be made for early resolution of pending land issues and expeditious implementation of STP works.

(vii) There are significant variations in water quality of polluted stretches by CPCB in 2016 and currently analyzed by GPCB. This needs to be resolved between CPCB & GPCB.

4. I would request you to kindly direct the concerned officers to take necessary action on the points highlighted in the Visit Report and the decisions taken in the two review meetings at the Central level, ensure submission of monthly progress reports as well as compliance to the various directions of Hon'ble NGT issued vide its order dated 06.12.2019.

With regards,

Yours sincerely,

(U P Singh)

Shri Anil Mukim, IAS
Chief Secretary,
Government of Gujarat,
1st Block, 5th Floor, Sachivalaya,
Gandhinagar, Gujarat.

Report on Review of progress on Polluted River Stretches (PRS) at Gujarat held on 04-05/02/2020 at Ahmedabad / Gandhinagar

1. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 22nd January, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. For the State of Gujarat, composition of the team was as below:-

   a. Shri Rajat Kumar Gupta, NMCG
   b. Dr. Sabita Madhvi Singh, NRCD
   c. Shri Shashikant Lokhande, CPCB

2. The above team visited Gandhinagar and Ahmedabad during 04-05 February, 2020 to ascertain the ground reality and to interact with the stakeholders mainly representatives of local bodies (Municipal Corporations/Municipal Councils/Nagar and Gram Panchayat) responsible for sewerage infrastructure to be/being created for the said polluted river stretches.

3. The meeting of the PRS Assessment Team was held on 04/02/2020 at 10:30 am in the presence of RRC members/ representative and officials from concerned organizations, authorities/departments, agency and associations to take overview of PRS and its present status in matter of Polluted River Stretches (PRS).

4. During brief introduction, it was noted following departments were not present for the meeting: Health & Family Welfare department, Principal Chief Conservator of Forest and Head of Forest Force (HoFF), Jetpur Nagarpalika, Ankhleshwar Nagarpalika, AHSPA, Narol Dyestuff Enviro Society, Odhav Green Enviro, GVMMSAV CETPs & others (as per attendance sheet). Assessment team advised all stakeholders that presence of concerned senior official must be ensured during the review meetings & same should be ensured by Nodal Departments of all concerned.

5. In opening remarks, Shri G.H.Trivedi, Senior Environmental Engineer introduced various PRS of the Gujarat state according to their priority. It was observed that

   a) Out of 20 PRS, Most of PRS has domestic discharge only except 5 PRS, i.e Sabarmati, Bhadar, Damanganga, Shedhi and Baleshwar Khadi, having both treated industrial effluent & domestic discharges in to PRS. Out of which, 2 PRS (Sabarmati & Bhadar) are in Priority I.
   b) To eliminate Industrial Footprint from River Sabarmati and Bhadar, Deep sea disposal pipeline projects for the State of Gujarat worth Rs. 2147 Cr. have been given approval by State Government. Rs 500 crores budgetary provision has been made during 2019-20 by State government.
   c) The comparative statement of the PRS priority based on BOD results of Year 2018-19 with CPCB Report Sep-2018 indicated that 12 PRS shows Improvement in quality (Priority down), 02 PRS shows deterioration in quality (priority up) While 06 PRS shows no change in priority.
   d) The glimpse of sewage management and industrial wastewater management of all 20 PRS, as presented, is as given below;

Sewage Management in Gujarat – Status

ULBs	No of ULBs	STP Capacity (MLD)				
		Required	Existing	Ongoing	(Existing + Ongoing)	GAP
Ahmedabad	1	1065	960	365	1325	0
Surat	1	930	1173	482.5	1655.5	0
Vadodara	1	409	354.5	161.5	516	0
Rajkot	1	170	316.5	15	331.5	0
Jamnagar	1	80	70	40	110	0
Bhavnagar	1	85	75	69.2	144.2	0
Gandhinagar	1	45	88	50	138	0
Junagadh	1	37	0	83.7	83.7	0
Nagar Palikas	162	1011	283	1265	1548	0
Total	170	3832	3320	2531.9	5851.9	0

Glimpse of Sewage management of all PRS action plans

Sewage	Existing STP		Gap	Proposed STP/Expansion		Time Limit	Estimated Budget
Approx. MLD	Nos.	Approx. MLD	Approx. MLD	Nos.	Approx. MLD		Rs. in Cr.
2494	25	1862	738	64	1267	2019-2023	1930

Glimpse of industrial wastewater management of all PRS action plans

Existing CETP/ETP		Proposed CETP/ETP Expansion/Modification		Time Limit	Estimated Budget
Nos.	Approx. MLD	Nos.	Approx. MLD		Rs. in Cr.
14	321	11	126	2019-2021	442

e) Monitoring of PRS water quality, ground water quality & various discharges (STP O/L, CETP O/L etc) has reportedly been done as per the scheduled mechanism envisaged in RAP and is quarterly reviewed by RRC with progress status of proposed action plan.

f) The progress on the individual action plan items, primarily in respect of sewage management, industrial waste management and solid waste management was reviewed and the status is placed at Annexure I.

g) PRS Meshwo, Narmada, Mahi & Triveni have no any Industrial & Domestic discharges in the Stretches.

h) Gujarat Government has framed Policy to utilize Treated Waste Water. The details of the treated waste water use currently practices and planned are placed at Annexure II.

6. During detailed discussions / review following issues and concerns were brought to notice of the team.

Issues / concerns	Details	Discussion & Suggestions from PRS Assessment Team
Land acquisition issues	STPs proposed by Wadhwan Municipality, Vapi Notified Area Authority STP, Vapi Chandor STP, AUDA & some of by VMC, AMC, SMC/SUDA/GWSSB w.r.t Tapi Shuddhikaran having land issues	In last video conference meeting, CS has intimated to all concerned to resolve the same. In this regards, it is further informed to schedule a review meeting at CS level in presence of Revenue Dept., Concerned Collector, representatives from all UDD, ULBs, GUDM, GWSSB & other concerned agency to resolve all such land possession issues at earliest.
Extended time line (after March-21) for STP	Total 42 STPs out of 65 are having elongated timeline	It was noted that out of 42 STPs having elongated timeline of STPs, approx. 37 STPs are of Tapi Shuddhikaran Project & it is mainly due to land issues. It was suggested to resolve the issues as soon as possible
Extended time line (after March-21) for CETP	CETP Danilimda (Dec-21)	Works need to be expedited
E-flow	Out of 20 PRS/River, only 1 River i.e Narmada is perennial river. Remaining are Non-perennial river.	Irrigation Dept. was advised to develop an action plan for each PRS having information of min e-flow, existing flow & plan to achieve minimum e-flow.

	So, no E-flow.	Team asked to submit the data of flood plain management in PRS, good irrigation practices etc. as per Hon'ble NGT order State was also advised to classify major rivers of Gujarat along with major towns on its banks and population so that location wise mapping for sewage generation could be done.
PRS that not falls in any priority even based on results of 2016-17	As per the CPCB report (Sep-18) based on results of 2016 & 2017, also Mahi and Narmada not been fall in any priority with <3 mg/L BOD and information for the same is already submitted to CPCB.	Matter may be taken up with CPCB. But the deteriorating quality in Vishwamitri river is a concern that need to be addressed on priority.
Direction of Hon'ble NGT order 06/12/2019	As per para 47 (i) Hon'ble NGT order dated 06/12/2019, timeline given for 100% sewage treatment, in-situ remediation & Commencement of setting up STPs is 31st March, 2020. while As per para 47 (ii) timeline given Timeline for completing all steps of action plans including completion of setting up STPs and their Commissioning is 31.03.2021 which are contradictory to each other	Instructed to execute In-situ remediation else it may lead to imposition of penalty as per NGT order 06/12/2019
Sewage Management in Villages	It is challenging to provide STP for the Management of sewage generated from scattered villages, having discharge of Sewage in to the Rivers Amravati, Amlakhadi, Kolak, Kim, Baleshwar khadi etc. PRH & RDD informed to submit the action plan	Assessment team suggested that in case of scattered & minor flow of domestic discharge, alternatives like Wetland, Bioremediation & Phytoremediation, septage management etc. should be explored

7. GWRDC informed that a bill titled "Conservation, Protection, Regulation and Management of Ground Water in Gujarat State" is in process of development and is expected to be placed in Assembly within 3 months.

8. Discussion was held about the progress with reference to Biodiversity park, Biodiversity monitoring & river indexing. In which Shri A.E Saumel, IFS, Member Secretary GBB informed that they have asked fund to CAMPA about Rs. 5 crore for afforestation. In addition this RRC Member- Convener & Member Secretary, GPCB informed GBB to tie up with AMC as they already have some plan to develop Biodiversity park at Khari under NRCP. Team indicated that the works, including biodiversity park, in accordance with the approved action plan should be completed as per approved timelines.

9. PRS Assessment Team Observations

The assessment team also visited STPs (Pirana, Jalvihar, vinzol), Vatva CETP, SWM biomining site, STP Sludge hygenisation plant, drains & monitoring locations during the visit. The observations from the site visit and discussions are as under:

- GPCB has reported significant variations in the PRS priorities indicated by CPCB and the ones based on current analysis by GPCB. CPCB to examine the matter.
- CPCB may approve the remaining action plans in respect of priority III to V PRS.

- The progress on 9 STPs in the priority I & II PRS is not satisfactory and may not meet the targeted timeline of March 2021. Concerted efforts are required to resolve the land issues and expedite the works.
- Even though infrastructure for sewage treatment is provided, the performance results are not satisfactory which needs attention and GPCB to issue notice to ULBs in the matter.
- The STPs at Vinzole & Pirana (Ahmedabad) were found to be operating sub-optimally and not complying with the standards. The performance needs to be closely monitored and necessary rehabilitation measures need to be undertaken.
- The problem of illegal discharges by industries in the sewer network leading to Vinzole STP was intimated to be the reason for non operation of the new STP for significant durations. GPCB and AMC need to work together to improve compliance by industries.
- Land issues in respect of STPs at Wadhawan (Bhogavo), Dafnala (Sabarmati), Kapurai & Tarsali (Vishwamitri) and Tapi Shudhikaran Pariyojna may be resolved at the earliest. The land issues were observed at many other locations as well and these need to be resolved at the earliest to avoid delays. Review meeting may be held at the level of Chief Secretary in presence of Revenue Dept., Concerned Collector, representatives from all UDD, ULBs, GUDM, GWSSB & other concerned agency to resolve land possession & related issues at earliest
- The CETP Danilimda (Ahmadabad) expected completion timeline is Dec'21 and efforts to be made to expedite the works.
- The works on deep sea disposal pipeline to be expedited.
- Latest analysis by GPCB indicated river Vishwamitri (PRS) to be deteriorating further and now falling in priority-I. There are number of unresolved land issues and delay in tendering process and thus need to be attended to by the State on priority.
- Guidance regarding in-situ remediation could be sought from Punjab Govt., U.P Govt., Delhi Govt. and NEERI. Concerned department may also consult NEERI for technical help. NEERI is also regularly organizing workshop With respect to In-situ remediation and the same may be attended by concerned officials. The in-situ remediation works may be undertaken else the penalty may be imposed as per NGT order 06/12/2019.
- For PRS Amlakhadi, STP has spare capacity which could help in treating the sewage from villages
- The actions / works as identified in the approved action plans need to be completed as per agreed timelines and Hon'ble NGT orders by all the concerned agencies.
- To reduce demand of Ground water extraction, Treated Waste water should be utilize to the extent possible
- Concept of Hybrid Annuity PPP model or One city One Operator can be opted by STPs.
- Ahmedabad Municipal Corporation (AMC) has initiated an innovative STP sludge hygenization plant for destruction of feacal coliform using radioactive cobolt -60 for converting the sludge into manure. The plant is currently operating at 6 – 10 TPD and the manure is being utilized for captive gardening requirements. The capacity utilization of the plant may be improved.
- AMC is undertaking biomining of its legacy MSW dump of nearly 80 lakh ton and so far approximately 6 lakh ton waste has been removed in 7 months. Of the bio-mined material 40% fraction is being sent for recycling while remaining 60 % is reportedly inert and is being sent to sanitary landfill facility. AMC was advised for examining the feasibility of separating finer fraction which may be used for composting instead of just shifting the waste and filling up the sanitary landfill facility (12 lakh ton capacity) which has already received nearly 4 lakh ton of inerts during last 7 months.
- AMC to expedite process for expanding the waste processing capacity to bridge the gap of 1000 TPD, also identified in the PRS action plan.

(Rajat K. Gupta)
NMCG.

(Dr. Sabita Mallick Singh)
NRCD

Sewage Treatment Plants

River	Existing (E) & Proposed (P) STPs, capacity	Present Status given by representative of concerned dept. (%)	Timeline given in RAP	Expected time line	Remarks
Sabarmati	Jalvihara 60 MLD (E)	--		--	Commissioned in 2018
	Vasana 48 MLD (E)	--		--	Commissioned in 2018
	Vasana 35 MLD (E)	--		--	Commissioned in 2009
	Vasana 240 MLD (E)	--		--	Commissioned in 2011
	Vasana 126MLD (E)	--		--	Commissioned in 2003
	Pirana 60 MLD (E)	--		--	Commissioned in 2009
	Pirana 106 MLD (E)	--		--	Commissioned in 2003
	Pirana 180 MLD (E)	--		--	Commissioned in 2009
	Pirana (155 MLD) AMC (P)	Under Progress 70 %	Mar-2020	May-2020	Work to be expedited
	Shankar Bhuvan (25MLD) AMC (P)	100%. Under Trial run	Mar-2020	Mar-2020	Trial run started
	Dafnala (25 MLD) AMC (P)	Tender under sanction	Mar-2021	Mar-2021	Land under approval of Cantonment. As informed by officials from AMC, land allotment will be done by Feb-2020
	Kotarpur (60 MLD) AMC (P)	Tendering completed and is under approval	Mar-2021	Mar-2021	Tender to be awarded at the earliest.
Khari	STP Vinzol 70 MLD (E)	--		--	Existing STP
	Vinzol (35 MLD) AMC (P)	100%	July-2019	--	Commissioned ; Standards not complied; illegal discharge issues to be addressed
	Vinzol (100 MLD) AMC (P)	Under Progress 60%	Dec-2019	Dec-2020	Expected to complete by Sep-2020
Bhadar	STP Jetpur - Navagadh Nagarpalika (23.5 MLD) GWSSB (P)	60% civil work completed	Feb-2020	Apr-2020	Network completed
Bhogavo	Surendrenagar (32.3 MLD) GUDC (P)	(100%) Work physically completed. Testing in progress.	Oct-2019	Mar-2020	Completed
	Wadhwan (12.1 MLD) GWSSB (P)	(0%), Tendering completed. Agency appointed	Mar-2021	Mar-2021	Land proposal at revenue level. To be resolved
Amlakhadi	STP of Notified Area Ankleshwar GIDC (E)	--	--	---	It was suggested to utilize existing STP that have spared capacity for treatment sewage

					of nearby villages
	Ankleshwar (14MLD) GWSSB (P)	0%. As decided in 3rd SHPC chaired by The Chief Secretary,Gujarat dated 23/08/2019, Expression of Interest from industries of Ankleshwar is to be called for raw sewage/reuse water allocation. Expression of interest has to be called by Nagarpalika. FORMAT is sent to Nagarpalika and GUDM on 03.02.2020	Mar-2021	Mar-2021	Instead of developing STP, options are being explored for supplying raw sewage to industries for treatment & reuse. Execution policy is changed (treatment of sewage will be carried out as per policy for reuse of treated w/w to promote TWW as an economic resource).DPR is prepared. Approval is pending which might get completed by March-2020
Vishwamitri	Tarsali (52 MLD) (E)	--		--	--
	Gajrawadi (66 MLD) (E)	--		--	--
	Sayajibaug (8.5 MLD) (E)	--		--	--
	Kapurai (43 MLD) (E)	--		--	--
	Rajivnagar (78MLD) (E)	--		--	--
	Chhani (21 MLD) (E)	--		--	--
	Atladara-I (43 MLD) (E)	--		--	--
	Atladara-II (43 MLD) (E)	--		--	--
	Kapurai (new) (STP+ Network) (60 MLD) VMC (P)	60%. Network issue is sorted out. 90 % work of STP is completed. Inter connection of new STP with existing STP is planned with 700 mm dia. D.I. line to divert excess sewage to new STP for treatment	Dec-2020	Dec-2020	Land Issues (Rising Main)
	Sayaji garden (Cost includes Quantity & Quality upgradation) (7.5 MLD) VMC (P)	4%. Engineering work is completed and other work is in progress	Mar-2021	Mar-2021	Existing 7.5 MLD cap. Will be augmented up to 16 MLD & also 7.5 MLD cap. Will be increased
	Channi (New) (STP+ Network) (50 MLD) VMC (P)	Under Construction 5%	Dec-2021	Dec-2021	land issue Might get cleared by March-2020. It is under finalization process. Engineering of STP has been started

	Atladara (new) (24 MLD) VMC(P)	DPR is under progress and tender will be published upto 31st March, 2020	Dec-2022	Dec-2022	NIT to be expedited
	Tarsali / GIDC (new) (STP + Network) (20 MLD) VMC (P)	DPR under preparation. VMC identified Gov. plot revenue survey No. 30 suitable for STP & hence informed to concerned dept. to earmark this plot for STP purpose	Dec-2023	Dec-2023	Land Issues (Rising Main)
Mindhola	STP (2 MLD + 2 MLD) (P)	DPR completed. Tender awaited.	2020	2020	--
Dhadhar	Karjan STP (5.2 MLD) GWSSB (P)	Tender has been re-invited	Mar-2021	Mar-2021	---
Kolak	Gunjan (10 MLD) Vapi Notified Area Authority (P)	0%, Land to be finalized	2020	2020	Land Issue:- Insufficient land
Anas	Dahod STP(13.7MLD)GWSSB (P)	In Progress 60%	Apr-2020	April-2020	
	Zalod STP(4.6 MLD) GWSSB (P)	In Progress 30%	Apr-2020	Oct-2020	
Damangang a	Vapi Namdha (STP) (14 MLD) GUDC (P)	Work in Progress 25%	Feb-2020	Sep–2020	
	Vapi Chandor STP (29.53 MLD) GUDC(P)	Tender Invited	Mar-2021	Mar-2021	Land proposal at revenue level
	Vapi Notified Area Authority (STP 5 MLD) P)	0%, Design to be finalized	Dec-2021	Dec-2021	
Shedhi	STP-Nadiad Nagarpalika (E)	--		--	STP has spare capacity to treat sewage. However, proper network not available which is proposed in RAP
	To Channel untreated sewage into STP (Nadiad) GUDC (P)	Work order is recently given.	July-2020	Feb-2021	--
	Kheda STP (5.2 MLD) GWSSB (P)	0% Work order issued.	Mar-2021	Feb-2021	Work to be started shortly.
Tapi	Signapore (155 MLD) (E)	Work in Progress 50%	Apr-2021	Dec-2020	--
	Gavier (53 MLD) (E)	Network is under process	Apr-2021	Apr-2021	Expected to complete by March-2021
	Bhatar (162 MLD) (E)	50%. Work in Progress	Apr-2021	Apr- 2021	As informed by SMC official, there are encroachment problems which will be resolved shortly and

					expected to complete by March-2021
	Bhesan (100 MLD) (E)	80%. Work in Progress	Dec-2020	June- 2020	--
	STPs under Tapi Suddhikaran Yojana (Total 37 STPs by SUDA and GWSSB) (P)	0% Separate sheet attached having present status of STPs under Tapi suddhikaran project	Feb-2022 to Dec-2022	Feb-22 to Dec-22	Land Issues to be resolved Tender to be invited subject to land possession issues .In last video conference meeting, CS has intimated to resolve the issues. To resolve all such land possession & related issues, separate meeting to be called at Hon'ble CS level with all concerned departments

Common Effluent Treatment Plants (CETPs) / Industrial Waste Water Managment

River	Name of CETPs Existing/ New	Proposal submitted in RAP	Time limit (RAP)	Extended Time Limit	Status/Remarks
Sabarmati	Green Environment Co-Operative So. Ltd., (GECSL)	Proposed Expansion 16 to 35 MLD	Dec - 2019	Dec-2020	Tendering for civil work completed. Civil work and vendor process for electrical and mechanical work for Fenton Catalytic Reactor in progress. As informed by representative, installation of FCR may be done after 2 months for which techno craft will come from Taiwan & it might get completed by Aug -2020.
	Naroda Enviro Projects Ltd. (NEPL)	Proposed Expansion 3 to 14	Jun- 2019	Feb - 2020	Completed. Under trial run; Stabilization expected by Sep'20
	Odhav Enviro Projects Ltd. (OEPL)	Upgradation:- Proposed Spray Dryer	Oct- 2019	Mar-2020	Installation of spray dryer completed; under commissioning
	Narol Dyestuff Enviro Society (NDES)	Proposed Expansion from 0.03 upto 0.45	2019	Mar-2020	Up-gradation of CETP units is in progress. Up-gradation of aeration system completed

	Narol Textile Integrated Enviro Management (NTIEM)	Proposed Expansion 100 to 130 MLD	2019	Mar-2020	Preliminary survey by M/S J M Smith International – Florida – USA will be completed by March-2020. After survey as per the suggestion implementation of expansion will carry out which may complete by March-2021
	Gujarat Vepari Mahamandal Sahakari Audhyogik Vasahat Ltd (GVMM)	No expansion proposed	NA	---	Absence of responsible personnel was noted during the meeting
	Odhav Green Enviro Project Ltd (OGEPL)		NA	---	
	Ahmedabad Hand Screen Printing Association (AHSPA)-Danilimda	Proposed New CETP (30 MLD)	Dec-2021	Dec 2021	Work order issued to L&T by AMC. Construction work started. elongated time line given
Bhadar	Jetpur Dying & Printing Association (JDPA)	Proposed Up gradation	Apr- 2020	Apr- 2020	JDPA- upgradation in terms of construction work of the collection sump is in progress (Construction work for mercerizing units is completed and printing units is in progress)
	Shri Dhareshwar	Proposed Modification	2020	2020	Work completed
	JDPA (20 MLD) at Monpar-Derdi	Proposed New CETP	Dec - 2020	Dec - 2020	Design and engineering work in progress. 25 % work completed.
	Shifting of washing ghats	Shifting of washing ghats	Apr- 2020	Apr- 2020	Still shifting of washing ghat not done due to treated waste water disposal problems
Baleshwar	Gujarat Eco Textile Park Ltd,-GETPL, Palsana	Proposed Up gradation	2021	--	Land levelling & Compound wall / Gabion wall under Progress. Expected to be completed as per timeline
	New Palsana Industrial Co-Op. Soc. Ltd	No expansion proposed	NA	--	
Damangan ga	CETP Vapi (VGEL)	Proposed Expansion 55 to 70 MLD	Dec- 2019	Yet to be submitted	EC awaited. Time line already due but CETP at present meeting with norms
	GHCL, Sarigam	No expansion proposed	NA	--	CETP Meeting with norms

Shedhi	Mafatlal Ind. Ltd.	Up gradation of ETP	Mar - 2019	RRC asked to submit the proposal of modification for ZLD/to achieve River discharge norms	--
	CETP Nadiad	Proposed New CETP	Dec - 2020	--	--

a) Status of Municipal Solid Waste Management is as under

AMC	Ahmedabad Municipal Corporation (AMC) has • Initiated bio-mining of its legacy MSW dump (80 Lakh Ton) and has cleared about 6 lakh ton of waste. The resulting waste streams of C&D waste (20%) and RDF (20%) are being sent to the recycling facilities for the two while the inerts are being sent to sanitary landfill facility. • Implemented technology demonstration project to hygienise dry sewage sludge using radiation processing technology for reduction of pathogens and enrich it with Bio-NPK for Agricultural Applications under the guidance of Bhabha Atomic Research Centre (BARC) capacity to hygienise 100 tons of dry sewage sludge is operationalized and commercial production has commenced. The plant was inaugurated on March 2019. 2 Waste to Energy Plant:- As per information given by representative it will be completed by Dec 2020
Jetpur-Navagadh Nagarpalika	MRF (Material recovery facility)- developed and working. Land is allotted for SWM Land fill site. DPR is prepared. Tendering procedure for development of SWM site. – Not yet initiated. (Chief officer- Jetpur-Navagadh Nagarpalika has verbally informed)

a) Treated Waste Water Reuse - Current

Present Installed Plant Capacity (in MLD)		Reuse recycling capacity (MLD)	Treated Sewage Reuse
Vasna	240	240	Treated sewage used for irrigation to agricultural land through Fatewadi canal by Irrigation department of Govt. of Gujarat.
Vasna	35	35	
Vasna	48	48	
Jalvihar	60	60	
Vinzol	70	2	2 MLD treated sewage is being supplied to Vatva CETP for their reuse purpose

b) Recycle and Reuse of treated Sewage is being planned for the following:

Present Installed Plant Capacity (in MLD)		Planned reuse recycling capacity (MLD)	Treated Sewage Reuse
Old Pirana	106	100	FASA agreement is approved by Standing Committee to take up project by IFC (International Finance Corporation)
Old Pirana	60		
New Pirana	180	180	It is planned to reuse treated sewage for industrial reuse and nuisance tanker filling
Vasna	126	126	Treated sewage will be used for irrigation to agricultural land through Fatewadi canal by Irrigation department of Govt. of Gujarat,
Vinzol	35	35	It is planned to reuse treated sewage for industrial reuse and nuisance tanker filling
Jalvihar	60	25	25 MLD treated sewage will be supplied to Torrent Power Limited for which pipeline is to be laid for Torrent Power Limited. Rest of the treated sewage eventually shall be supplied to Fatewadi canal for agricultural reuse through Sabarmati river

ANNEXURE - V

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सत्यमेव जयते

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
श्रम शक्ति भवन
रफी मार्ग, नई दिल्ली-110 001
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
SHRAM SHAKTI BHAWAN
RAFI MARG, NEW DELHI-110 001
http://www.mowr.gov.in

DO No.: Legal/OA 673/2018/NMCG/2019 (Part File) March 11, 2020

Dear Sri Mehta,

As you would be aware, Hon'ble NGT vide its Order dated 06.12.2019 in OA No. 673 of 2018 in the matter of "News item published in the Hindu authored by Shri Jacob Koshy titled More river stretches are now critically polluted: CPCB, with Dr. Tudi Indrasena Reddy & Ors versus UoI & Ors" had directed that an institutional mechanism be evolved for monitoring compliance to its Order by Chief Secretaries of all the States/ UTs at State level and at the National level by the Secretary, Ministry of Jal Shakti with assistance of National Mission for Clean Ganga (NMCG) and Central Pollution Control Board (CPCB).

2. As per the Order, a meeting at the Central level is to be held with the Chief Secretaries of all States/ UTs at least once a month to take stock of the progress and to plan further action. Accordingly, 2 meetings at Central level have been held at my level so far on 08.01.2020 and 19.02.2020 with the States, the minutes of which have already been circulated to the States for necessary action. Based on the discussions during the meeting held on 08.01.2020, teams comprising officials of NMCG, National River Conservation Directorate (NRCD) and CPCB have visited 5 States having large number of polluted stretches to review the pollution status (domestic and industrial), available sewage infrastructure and existing / future gap to carry out Conditional Assessment and identify interventions required.

3. One team had undertaken a visit to Mumbai in Maharashtra on 30th & 31st January 2020 to interact with various stakeholders, including representatives of local bodies and River Rejuvenation Committee (RRC) Members, on various issues relating to pollution control in the identified polluted river stretches in the State. The copy of the Visit Report of the team is enclosed for your kind perusal. The major observations and recommendations of the visit are as under:

(i) There are significant variations in water quality of polluted stretches as perCPCB Report of 2016 and that currently analyzed by (Maharashtra Pollution Control Board (MPCB). This needs to be resolved between CPCB & MPCB.

(ii) Though the efforts of MPCB to provide financial and technical assistance for Nagar Panchayats/ Gram Panchayats, which cannot secure grants/ funds under any Central/ State scheme for pollution abatement are appreciated, but the sanctioned projects for important rivers of Mula-Mutha, Mithi & Godavari rivers are yet to fully take off.

(iii) In case of sewerage works being/ to be created by the local bodies, MPCB may give directions under the relevant statutes namely, the Water Act, 1974, the Environment (Protection) Act, 1986 for the needful so to comply with the orders of NGT in letter and spirit.

4. I would request you to kindly direct the concerned officers to take necessary action on the points highlighted in the Visit Report, decisions taken in the two review meetings at the Central level, ensure submission of monthly progress reports as well as compliance to the various directions of Hon'ble NGT issued vide its order dated 06.12.2019.

With regards,

Yours sincerely,

(U P Singh)

Shri Ajoy G Mehta, IAS
Chief Secretary,
Government of Maharashtra,
CS Office Main Building, Mantralaya,
6th Floor, Madame Cama Road,
Mumbai - 400032.

Assessment of polluted river stretches in Maharashtra - Tour Report

1. The National Green Tribunal, Principal Bench at New Delhi, vide order dated 6th December, 2019 in OA No.673/2018 in the matter of News item published in 'The Hindu' authored by Shri Jacob Koshy titled 'More river stretches are now critically polluted: CPCB' has given certain directions as under:-

(i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28th August, 2019 in OA No.593/2017 by 31st March, 2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide o4rder dated 22nd August, 2019 in the case of river Ganga i.e. Rs.5 lakhs per month per drain, for default in in-situ remediation and Rs.5 lakhs per STP for default in commencement of setting up of the STP.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the order dated 8th April, 2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22nd August, 2019 in the case of river Ganga i.e. Rs.10 lakhs per month per STP.

(iii) We further direct that an institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

(iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs atleast once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

(v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

(vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

(vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

(viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

(ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the action plans prepared by the States which may start forthwith, if not already started.

(x) Rivers which have been identified as clean may be maintained.

2. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 22nd January, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. For the State of Maharashtra, composition of the team was as below:-

(i) Dr. Pravin Kumar, Director Technical, NMCG
(ii) Shri Vivek Raj, Scientist C, NMCG
(iii) Shri S. K. Srivastava, Additional Director, NRCD
(iv) Shri Bharat Sharma, Scientist E (Representative from CPCB)

3. The above team visited Mumbai during 30-31 January, 2020 to ascertain the ground reality and to interact with the stakeholders mainly representatives of local bodies (Municipal Corporations/Municipal Councils/Nagar and Gram Panchayat) responsible for sewerage infrastructure to be/being created for the said polluted river stretches.

As per the directions of NGT and also works assigned to the teams, discussions with the respective local bodies were focused on assessment of sewerage infrastructure (existing/futuristic) vis-à-vis the action plans submitted by Maharashtra Pollution Control Board (MPCB) to the Central Pollution Control Board (CPCB). It was informed that action plans for polluted river stretches under Priority-I (9 nos) & II (6 nos) were approved by CPCB in May/June, 2019, which are now in different stages of implementation. In respect of polluted river stretches under Priority-III (14 nos), IV (10 nos) & V (14 nos), actions plans although submitted by MPCB, but yet to be approved by CPCB.

Stretch wise details are given at **Annexure-I**, which includes information on towns/villages located thereon, sewage generation, treatment available and the gap, proposed treatment, industrial activities contributing to pollution in the said stretch, and the present implementation status vis-à-vis the directions of NGT.

4. Status of sewage generation and treatment in Maharashtra is as below:

City/Town/ Local Body	No of LBs	STP capacity Required (MLD)	STP capacity Existing (MLD)	STP capacity Ongoing (MLD)	STP capacity (existing+ ongoing) (MLD)	Gap (MLD)
AMRUT Cities (Except Mumbai)	43	5642	3422	1556	4978	664
Mumbai	1	2577	2407	2407*	2407	170
Municipal Councils	222	1298	110	250	361	937
Nagar Panchayats	125	240	0	0	0	240
Total	**391**	**9758**	**5939**	**4214**	**7746**	**2011**

***Upgradation of existing STPs**

5. In respect of identified polluted river stretches, gap analysis for sewage generation and treatment is as under:-

Local Body	Numbers	Sewage generation (MLD)	Sewage treatment (MLD)	Gap (MLD)	Capacity of STPs proposed (MLD)
Municipal Corporation	17	2365.25	1810.90	778.0	998.26
Municipal Council	42	325.93	150.50	210.79	315.9
Nagar Panchayat	4	6.7	0.0	6.7	3.0
Gram Panchayat	27	30.77	0.0	30.77	0.0
Total	**90**	**2728.65**	**1961.40**	**1026.26**	**1317.16**

6. Details of monitoring locations on rivers in the State of Maharashtra are given at **Annexure-II**.

7. Observations and recommendations

(a) Based on water quality monitoring results during the period from January-November, 2019, MPCB informed that priority status of the said polluted river stretches was changed from that reported by CPCB. In many of the cases, water quality was reportedly improved as per the stretch wise details given in **Annexure-III**, and summarized as under:-

Priority	Polluted stretches	
	As per CPCB report (2016)	As per WQM by SPCB during Jan-Nov, 2019
Priority-I	9	1
Priority-II	6	6
Priority-III	14	8
Priority-IV	10	15
Priority-V	14	22
Less polluted	-	1
Total	53	53

(b) Most critical projects for the rivers like Mula-Muta (3 Stretches), Mithi and Godavari needs to be executed on top priority. The projects for these have been sanctioned but yet to be grounded.

(c) For Nagar Panchayats/ gram panchayats, which cannot secure the grants/ funds under any other state/ central scheme for pollution abatement, MPCB has proposed to provide financial and technical assistance for all such towns, A fund of about 900 Crore have already been allocated for the said purpose.

(d) In case of sewerage works being/to be created by the local bodies, MPCB may give directions under the relevant statutes namely, the Water Act, 1974, the Environment (Protection) Act, 1986 for the needful so as to comply with the orders of NGT in letter and spirit.

(e) MPCB informed that no untreated effluent is discharged into water bodies from industries as the 100% of treated effluent is being reused. MPCB don't provide permission to release even the treated effluent from industries into the rivers.

(Dr. Pravin Kumar)	(Vivek Raj)	(S. K. Srivastava)	(Bharat Sharma)
NMCG	NMCG	NRCD	CPCB

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
Godavari	Someshwar Temple to Rahed (504 km) Triambakeshwar/ Bay of Bengal Darna, Manjara, Purna, Pravara, Sindphana <u>Major towns</u> Triambakeshwar (12056) Nashik (1486053) Paithan (41536) Gangakhed (49891) Nanded (550439) <u>Industrial Cluster</u> Satpur Ambad Krushnoor	I/II	<u>Drains/Nalla</u> Triambakeshwar-1 Nashik-5 Paithan-1 Gangakhed-1 Nanded-34 (Only 9 Nallas overflows and pollute the river) <u>**Total Sewage Generation:-**</u> 367.50 MLD (1+290+5+1.5+70) <u>**Total Sewage Treatment Plant:-**</u> 493.0 MLD <u>**GAP in Treatment:-**</u> 0.0 MLD <u>**Proposed STPs**</u> Nashik-32 MLD Paithan-7.5 MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation.	No proposal for in-situ remediation.	Triambakeshwar M Council Nashik MC Paithan M Council Gangakhed M Council Naded MC	
				Commencement of setting up STPs by 31st March, 2020.	Nashik- March, 2021, Paithan- March, 2022 (Land acquisition in process) Gangakhed- Dec, 2020 Nanded-Dec, 2021		
				Connecting all the drains and other sources of generation of sewage to the	For Nashik STP, 1550 km sewer network completed, 210 km in progress.		

	Nanded 201 industries		Gangakhed-5 MLD Nanded-10 MLD	STPs by 31st March, 2020.			
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		

				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			
River	**Stretch** **(Origin/Basin/ Sub-basin)** **Tributaries** **Major towns/Industrial Clusters**	**Priority/ Present water quality (Monitoring during Jan-Dec, 2019)**	**Major polluting sources** **Sewage generation/ gap/treatment proposed**	**Directions of NGT**	**Present status of implementation**	**State Govt/Agency responsible**	**Remarks**
Kalu	Along Atale village (2.5 km) A tributary of Ulhas river Tributaries- Kanakvira and Shai 8-10 villages in Kalyan taluka, District Thane	I/V	Drains/Nalla Neptune, Balkrishna Paper Mill, Shiv Mandir, Balyani **Total Sewage Generation:-** 7.6 MLD **Total Sewage Treatment Plant:-** 0.0 MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Kalyan Dombivli Municipal Corporation	
				Commencement of setting up STPs by 31st March, 2020.	DPR under preparation. Proposed STP expected to be completed by December, 2022.		

	Titwala (26331), Jetvanagar (Baneli, Ubarni) (12000) Vadawali (5000) Rayate (2516) Ambivali No industrial estate, Industries-3		**GAP in Treatment:-** 7.6 MLD **Proposed STPs** 21 MLD at Ambivali under AMRUT	Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the	Monthly progress report		

				States to Secretary, MoJS with a copy to CPCB.	submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks

Kundalika	Salav to Roha (35.5 km) Origin-Town Bhira in Western Ghats <u>Major town</u> Roha (20849), District Raigad <u>Industrial Cluster</u> MIDC Dhatav (41 nos of industries)	I/III	Sadmushi Nallah (Domestic effluent discharge from Roha Municipal Council area) **<u>Total Sewage Generation:-</u>** 2.8 MLD **<u>Total Sewage Treatment Plant:-</u>** 0.0 MLD **<u>GAP in Treatment:-</u>** 2.8 MLD **<u>Proposed STPs</u>** 5 MLD (1 MLD + 4MLD)	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation.	No proposal for in-situ remediation.	Roha Municipal Council	
				Commencement of setting up STPs by 31st March, 2020.	2 STPs of 1&4 mld proposed. DPR under preparation. Timeline for completion of STPs – March, 2022.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	60% sewerage network completed.		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring			

				compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Mithi	Powai to Dharavi (17.8 km) River originates from the overflow of Vihar Lake and also Powai lake about 2 km later, and meets Arabian Sea at Mahim Creek. Covers residential and industrial complexes of Powai, Saki Naka, Kurla, Kalina, Vakola, Bandra-Kurla Complex, Dharavi, Mahem. (Population nearly 20 lakhs out of total	I/I	Domestic effluent from dense areas of Powai, Saki Naka, Kurla, Mahem, BKC, Dharavi, etc. **Total Sewage Generation:-** 286 MLD **Total Sewage Treatment Plant:-** 0.0 MLD **GAP in Treatment:-** 286.0 MLD **Proposed STPs** 8.0 MLD Dry Weather Flow of 97 mld (from WSP	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Municipal Corporation of Greater Mumbai (MCGM)	For Mumbai-Present installed capacity is 2698 mld (Utilization-1998 mld) MCGM has planned to install 8 Nos of STPs by 2028 for treatment of sewage of 2484 mld from Mumbai.
				Commencement of setting up STPs by 31st March, 2020.	STP of 8 mld at WSP compound is under construction and likely to be completed by November, 2020.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans			

	Mumbai population of 140 lakhs) No industrial estate, Industries-947		Compound to CST Bridge) and 37 mld (from CST Bridge to Mahim Causeway) will be diverted to existing Bandra Treatment Facility (designed capacity of 797 mld) through sewer interceptors. Dry Weather Flow of 144 mld (from Bapat Nalla & Saphed Pool Nalla) will be diverted to Ghatkoapar WWTF through proposed Tunnel. 2484 MLD for entire Mumbai (8 nos of STPs)	including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			

				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Morna	Akola to Takalijalam (6 km) Morna is tributary of Purna River (major tributary of Tapi River), which empties in it at Andura village in Akola. Population	I/V	Drains/Nalla Hingana, Dagdi pull and other 35 drains **Total Sewage Generation:-** 27.6 MLD **Total Sewage Treatment Plant:-** 0.0 MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation.	No proposal for in-situ remediation.	Akola Municipal Corporation	
				Commencement of setting up STPs by 31st March, 2020.	95% work of 30 mld and 60% of 7 mld completed. Likely by June, 2020.		
				Connecting all the drains and other	Sewage from the city flows		

	Akola (5.37 Lakhs) <u>Industrial Cluster</u> Akola MIDC - 550 nos of industries		**<u>GAP in Treatment:-</u>** 27.6 MLD **<u>Proposed STPs</u>** Proposed - 37 MLD (30+7)	sources of generation of sewage to the STPs by 31st March, 2020.	through open drains, which shall be intercepted and pumped to STPs by June, 2020.		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.	-do-		
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process			

				to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Mula	Bopodi to Aundh Gaon (2.7 km) Mula River is dammed at the Mulshi Dam forming Mulshi Lake. Further downstream, in Pune city, it merges with Pawana River on the left bank and Mutha River on the right bank to form Mula-Mutha river, which later meets the Bhima River, which later meets Krishna River and finally emptying to the Bay of Bengal. Pune (40 Lacs)	I/III	Botanical Garden nalla from Pune city 11 nos of STPs of total capacity 396 mld under NRCP (JICA funded) by PMC and 20 mld by Pune Cantonment Board **Total Sewage Generation:-** 97 MLD **Total Sewage Treatment Plant:-** 73 MLD **GAP in Treatment:-** 24.0 MLD **Proposed STPs** 50 MLD Proposed - (25+15+10)	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Pune Municipal Corporation Pune Cantonment Board	Total sewage generation from Pune City-744 mld, Installed capacity-567 mld, Capacity utilization-477 mld
				Commencement of setting up STPs by 31st March, 2020.	Likely completion by 2023.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be			

	No industrial Estate, No. of Industries 18			evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Mutha	Shivaji Nagar to Khadakwasla Dam (16 km) Mutha River originates from Western Ghats, flows eastward for about 21 km, and merges with Mula River in Pune. Pune (40 lakhs) Industrial Clusters Industrial estate - 3 nos (Small),	I/II	Drains/Nalla Warje, Vadgaon, Hingne, Erandwana, Nagjari, Ambil Odha **Total Sewage Generation:-** 151 MLD **Total Sewage Treatment Plant:-** 94 MLD **GAP in Treatment:-** 57.0 MLD **Proposed STPs**	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Pune Municipal Corporation Pune Cantonment Board	Total sewage generation from Pune City-744 mld, Installed capacity-567 mld, Capacity utilization-477 mld
				Commencement of setting up STPs by 31st March, 2020.	Likely completion by 2023.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans			

	Industries-113		87 MLD (26+28+33) 11 nos of STPs of total capacity 396 mld under NRCP (JICA funded) by PMC and 20 mld by Pune Cantonment Board	including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			

				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Nira	Sangavi to Shindewadi (43 km) Tributary of Bhima, flows through	I/III	Khadakhira nalla from Phaltan **Total Sewage Generation:-** 8.3 MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Phaltan Municipal Council, District Satara Akluj Gram Panchayat, Tehsil	For Akluj Gram Panchayat, MPCB shall provide financial &

	Satara, Pune and Solapur Phaltan (60172) Akluj village (39972) No of industries - 7		**Total Sewage Treatment Plant:-** 0.0 MLD **GAP in Treatment:-** 8.3 MLD **Proposed STPs** 8.0 MLD (2.5 mld at Khadkhira nalla & 5.5 mld at Dagadikhan) to be implemented with the grant from Maharashtra Suvarna Jayanti Nagarodhan Yojana at a cost of Rs.72.76 crore.	Commencement of setting up STPs by 31st March, 2020.	Approval for sewerage network (76 km) and STP, pending with MJP. Likely completion by March, 2021.	Malshiras, District Solapur	technical assistance in next three years.
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief			

				Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Vel	Nhavare to Shikarpur (10 km) Originates at Ambegaon Taluka/Bhima River Shikarpur village (19374), Taluka Shirve, District Pune	I/IV	Drain from Shikarpur village **Total Sewage Generation:-** 2.0 MLD **Total Sewage Treatment Plant:-** 0.0 MLD **GAP in Treatment:-** 2.0 MLD **Proposed STPs** NIL	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Shikarpur Gram Panchayat	MPCB shall provide financial & technical assistance in next three years.
				Commencement of setting up STPs by 31st March, 2020.	No proposal for STP.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	NA		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be			

				evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Bhima	Vithalwadi to Takli (200 km) Mula, Mutha, Pawana, Ghod, Nira, Man, Sina, Bori Pune (40 lakhs) Pandharpur (1,10,000) Industries in PMC Red-3962 Orange-2591 Green-3738	II/II	Drains from PMC area (Keshavnagar, Bhapkar, Rangicha Odha) Gopalpur drain from Pandharpur 762.5 mld (744+18.5)/ 177 mld (177+Nil) Proposed - 401 mld (396+5) 11 nos of STPs of total capacity 396 mld under NRCP (JICA funded) by PMC and	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Pune Municipal Corporation Pandharpur Municipal Council	
				Commencement of setting up STPs by 31st March, 2020.	Likely completion by 2023 for PMC area.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	NA		

			20 mld by Pune Cantonment Board; 5 mld proposed for Pandharpur	Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be			

				shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Indrayani	Moshigaon to Alandigaon (4.62 km)	II/IV	Drains/Nallas in PCMC area	100% sewage treatment by 31st March, 2020 at least	No proposal for in-situ remediation.	Pimpri Chinchwad Municipal	

	Kurvande, near Lonavla/Bhima River PCMC area (17.3 lakhs) Alandi (28645) Industrial Estate-3 No. of industries-44 Nos.		Ravet, Garware near Bhatnagar, Kalasanagar, Chinchwad, Gavade Colony near Manikbag, Sandvik For PCMC area - 88.2 mld/ 15.2 mld Proposed 12 mld For Alandi town - 2.5 mld/ No treatment yet Proposed 4 mld **<u>Pimpri Chinchwad Municipal</u>** **Total Sewage Generation:-** 88.20 MLD **Total Sewage Treatment Plant:-** 73.0 MLD **GAP in Treatment:-** 15.2 MLD **Proposed STPs** 12.0 MLD **<u>Alandi Municipal Council</u>**	to the extent of in-situ remediation		Corporation (PCMC) Alandi Municipal Council	
				Commencement of setting up STPs by 31st March, 2020.	For PCMC area, work under progress, and likely completion by March, 2020. For Alandi town, timeline is 2021.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at			

			Total Sewage Generation:- 2.5 MLD **Total Sewage Treatment Plant:-** 0.0 MLD **GAP in Treatment:-** 2.5 MLD **Proposed STPs** 4.0 MLD	State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin)	Priority/ Present water quality	Major polluting sources Sewage generation/	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks

	Tributaries **Major towns/Industrial Clusters**	**(Monitoring during Jan-Dec, 2019)**	**gap/treatment proposed**				
Mula Mutha	Theur to Mundhwa Bridge (15 km) Mula, Mutha, Pawana, Ghod, Nira, Man, Sina, Bori	II/III	Drain from PMC area **<u>Pune Municipal Corporation</u>** **Total Sewage Generation:-** 496 MLD **Total Sewage Treatment Plant:-** 400.0 MLD **GAP in Treatment:-** 96.0 MLD **Proposed STPs** 259.0 MLD (127+75+30+20+7) 11 nos. of STPs of total capacity 396 mld under NRCP (JICA funded) by PMC and 20 mld by Pune Cantonment Board	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Pune Municipal Corporation Pune Cantonment Board	Total sewage generation from Pune City-744 mld, Installed capacity-567 mld, Capacity utilization-477 mld
				Commencement of setting up STPs by 31st March, 2020.	Likely completion by 2023.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	-do-		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose,			

				monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Pawana	Dapodi to Ravet (20 km) Pawana Lake near Lonavla /Mula River PCMC (17.3 lakhs) Industrial Estate-3 No. of industries-Major 44 Nos.	II/II	<u>Drains/Nallas in PCMC area</u> Ravet, Garware near Bhatnagar, Kalasanagar, Chinchwad, Gavade Colony near Manikbag, Sandvik **Pimpri Chinchwad <u>Municipal Corporation</u>** **Total Sewage Generation:-** 205.8 MLD **Total Sewage Treatment Plant:-** 260.0 MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Pimpri Chinchwad Municipal Corporation (PCMC)	
				Commencement of setting up STPs by 31st March, 2020.	Likely completion by March, 2020.		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	Laying of interceptor sewer along both banks of Pawana River is in Progress.		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st			

			GAP in Treatment:- 0.0 MLD **Proposed STPs** 15.0 MLD at Chinchwad Bhatnagar for future need.	March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary, MoJS with a copy to CPCB.	Monthly progress report submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Wainganga	Tumsa to Ashti (98 km) Mundhara village in District Seoni (MP)/Wardha River Bhandara (91845) Pauni (22821) Desaiganj (28781) Gadchiroli (54152) Brhmapuri (36025)	II/III	Drains from Bhandara and Pauni towns **Total Sewage Generation:-** 18.5 MLD (5.5+1+3.5+5+3.5) **Total Sewage Treatment Capacity:-** 0.0 MLD (NIL) **GAP in Treatment :-** 18.5 MLD	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation Commencement of setting up STPs by 31st March, 2020.	No proposal for in-situ remediation. Bhandara - Proposal submitted for technical approval Pauni - March, 2021, Gadchiroli - July, 2021, For Desaiganj and	Bhandara M Council, Pauni M Council, Desaiganj M Council Gadchiroli M Council, Brahmapuri M Council,	

			Proposed STPs - 44 MLD (15+7+3.5+11.5+7)		Brahmapuri, DPR under preparation		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	NA		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the	Monthly progress report		

				States to Secretary, MoJS with a copy to CPCB.	submitted on 18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

River	Stretch (Origin/Basin/ Sub-basin) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt/Agency responsible	Remarks
Wardha	Ghughus to Rajura (42 km) Mundhara village Satpura Range near Multai in District Betul (MP)/	II/IV	Discharge of BILT Nalla (behind Ballarpur Opencast Mines), Local Nalla near crematorium, Tail end of Amalnalla near Sasti Opencast	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation	No proposal for in-situ remediation.	Chandrapur Municipal Corporation Ballarpur Municipal Council	Presently, sewage from Ballarpur town flows through nalla to Wardha River after primary
				Commencement of setting up STPs by 31st March, 2020.	DPR under preparation		

	Wainganga River forming River Pranhita Chandrapur (320000) Ballarpur (89472) Rajura (29668) Industrial Estate-2 No. of Industries-39		Mines, Kapangaon Nalla at Rajura **Total Sewage Generation:-** 43.2 MLD (35+5+3.2) **Total Sewage Treatment Capacity:-** 70.50 MLD (No treatment for Ballarpur and Rajura towns. **GAP in Treatment:-** 0.0 MLD (NIL) for Chandrapur but 8.2 MLD GAP for Ballarpur and Rajura towns. **Proposed STPs** - Proposed - 16 MLD (7.5+8.5) for Ballarpur town. **Note:** Chandrapur has sewage treatment capacity of 70.5 mld, but inadequate drainage network		for Ballarpur town.	Rajura Municipal Council	treatment i.e. passing through sedimentation tanks filled with sand, pebbles, etc. Biozap liquid is added.
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	NA		
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.			
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.			
				Monthly progress report to be furnished by the States to Secretary,	Monthly progress report submitted on		

				MoJS with a copy to CPCB.	18th Jan, 2020 by MPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.			
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.			

NWMP STATION DETAILS (GEMS / MINARS) SURFACE WATER								
Sr No	Station code	Type (River/Creek)	Station name	Water Body	Latitude	Longitude	NWMP Project	Monitoring Frequency
1	11	River	Wainganga river at Ashti, Village- Ashti, Taluka- Gondpipri, District-Chandrapur.	Wainganga River	19°10.643'	79°47.140 '	GEMS	M
2	12	River	Godavari river at Dhalegaon, Village- Dhalegaon, Taluka- Pathari, District- Parbhani.	Godavari River	19°13.524'	76°21.854'	GEMS	M
3	28	River	Bhima river at Takli near Karnataka border, Village- Takali, Taluka- South Solapur, District- Solapur.	Bhima River	17°24.910'	75°50.766 '	GEMS	M
4	36	River	Krishna river at Krishna bridge, (Krishna river at NH-4 bridge) Village- Karad, Taluka- Karad, District- Satara.	Krishna River	17°17.690'	74°11.321'	GEMS	M
5	37	River	Krishna river at Maighat, Village- Gawali gally, Taluka- Miraj, District- Sangli.	Krishna River	16°51.710'	74°33.459 '	GEMS	M
6	1913	River	Purna river at Dhupeshwar at U/s of Malkapur water works,Village- Malkapur,Taluka- Akola,District- Akola.	Purna River	21° 00'	77° 13'	MINARS	M
7	2155	River	Purna river at D/s of confluence of Morna and Purna, at Andura Village, Village- Andura, Taluka- Balapur, District- Akola.	Purna river	20°53.200'	76°51.364'	MINARS	M
8	2695	River	Pedhi river near road bridge at Dadhi- Pedhi village, Village- Dadhi- Pedhi, Taluka- Bhatkuli, District- Amravati.	Pedhi river	20° 49.532'	77° 33.783'	MINARS	M
9	2675	River	Morna river at D/s of Railway bridge, Village- Akola, Taluka- Akola, District- Akola.	Morna river	20° 09.016'	77° 33.622'	MINARS	M
10	2699	River	Penganga river at Mehkar- Buldana road bridge, Village- Mehkar, Taluka- Mehkar, District- Buldana.	Penganga river	20° 09.010'	76° 33.625'	MINARS	M
11	2700	River	Purna river near Achalpur- Amravati road bridge, Asegaon, Village- Asegaon,Taluka- Chandur Bazar, District- Amravati.	Purna river	20° 54.396'	77° 36.817'	MINARS	M
12	1209	River	Godavari river at Raher, Village-Raher, Taluka- Nayagaon, District- Nanded.	Godavari River	18°53.781'	77°40.660'	MINARS	M

13	1210	River	Godavari river near Intake water pump house, Village- Vishnupuri, Taluka- Nanded, District- Nanded.	Godavari River	19°07.611'	77°16.763'	MINARS	M
14	2157	River	Godavari river at Latur water intake near Pump house. Village- Dhamegaon, Taluka- Kalumb, District- Osmanabad.	Godavari river	18°33.243'	76°08.899'	MINARS	M
15	2673	River	Manjra river at D/s of Latur, near Latur- Nanded bridge, Village- Bhatkheda, Taluka- Latur, District- Latur.	Manjra river	18° 25.826'	76° 40.253'	MINARS	M
16	2161	River	Godavari river at Jalna Intake water pump house, Village- Shahabad, Taluka- Ambad, District- Jalna.	Godavari river	19°21.392'	75°42.870'	MINARS	M
17	2657	River	Bindusara river at Beed, near intake water pump house at Dam, Village- Paligaon, Taluka- Beed, District- Beed.	Bindusara river	18° 54.922'	75° 44.236'	MINARS	M
18	1312	River	Godavari river at Jaikwadi Dam, Village- Paithan, Taluka- Paithan, District-Aurangabad.	Godavari River	19°29.263'	75°22.272'	MINARS	M
19	2158	River	Godavari river at U/s of Paithan at Paithan intake pump house, Village- Jayakwadi, Taluka- Paithan, District- Aurangabad.	Godavari river	19°30.887'	75°22.457'	MINARS	M
20	2159	River	Godavari river at D/s of Paithan at Pathegaon bridge, Village- Pathegaon, Taluka- Paithan, District- Aurangabad.	Godavari river	19°28.835'	75°23.835'	MINARS	M
21	2160	River	Godavari river at U/s of Aurangabad Reservoir,Kaigaon Tokka near Kaigaon bridge,Village- Kaigaon,Taluka- Gangapur,District- Aurangabad.	Godavari river	19°37.463'	75°01.490'	MINARS	M
22	2156	River	Wardha river at confluence point of Penganga & Wardha. Village- Jugad, Taluka- Wani, District- Yavatmal.	Wardha river	19°53.943'	79°08.911'	MINARS	M
23	2174	River	Wardha river at D/s of ACC Ltd. Ghuggus near WCL pump house, Village- Ghuggus, Taluka- Chandrapur, District- Chandrapur.	Wardha river	19°54.291'	79°06.894'	MINARS	M
24	2175	River	Wainganga river at U/s of Gaurav Paper Mills, near jackwell, Village- Bramhpuri, Taluka- Chandrapur, District- Chandrapur.	Wainganga river	20°37.169'	79°51.408'	MINARS	M
25	2176	River	Wainganga river at D/s of Gaurav Paper Mills, near jackwell, Village- Bramhpuri, Taluka- Chandrapur, District- Chandrapur.	Wainganga river	20°37.169'	79°56.408'	MINARS	M
26	2697	River	Penganga river near water supply scheme of Umarkhed M.C., Village- Belkhed,Taluka- Umarkhed, District- Yavatmal.	Penganga river	20° 23.559'	78° 07.934'	MINARS	M

27	2698	River	Penganga river D/s of Isapur Dam, Village- Isapur,Taluka- Pusad,District- Yavatmal.	Penganga river	20° 23.559'	78° 07.934'	MINARS	M
28	2719	River	Wardha river at D/s of Erai river at Hadasti near Arun Engg. Works, Village- Hadasti, Taluka- Chandrapur, District- Chandrapur.	Wardha river	19° 59.433'	79° 15.754'	MINARS	M
29	2720	River	Wardha river at U/s of Erai river at Hadasti near Arun Engg. Works, Village- Hadasti, Taluka- Chandrapur, District- Chandrapur.	Wardha river	19° 59.263'	79° 06.907'	MINARS	M
30	2721	River	Wardha river at U/s of ACC Ltd. Ghuggus near WCL pump house, Village- Ghuggus, Taluka- Chandrapur, District- Chandrapur.	Wardha river	19° 54.336'	79° 06.894'	MINARS	M
31	1212	River	Wardha river at Rajura bridge, Village- Rajura, Taluka- Chandrapur, District- Chandrapur.	Wardha River	19° 48'	79° 23'	MINARS	M
32	1092	River	Kalu river at Atale village, Village- Atale, Taluka- Kalyan, District- Thane.	Kalu River	19° 27'	73° 10'	MINARS	M
33	2791	Creek	Ulhas creek at Reti bunder at D/s of Kalyan- Bhiwandi bridge, Village- Kalyan, Taluka- Kalyan, District- Thane.	Ulhas creek	19° 15.71'	73° 07.043'	MINARS	M
34	1093	River	Ulhas river at U/s of NRC Bund, Village- Mohane, Taluka- Kalyan, District- Thane.	Ulhas River	19° 15'	73° 15'	MINARS	M
35	1094	River	Ulhas river at U/s of Badlapur water works, Village- Kulgaon, Taluka- Ambernath, District- Thane.	Ulhas River	19°08.969'	73°15.205 '	MINARS	M
36	2162	River	Ulhas river at Jambhul water works, Village- Jambhul, Taluka- Ambernath, District- Thane.	Ulhas river	19°12.012'	73°13.612'	MINARS	M
37	2653	River	Bhatsa river at D/s of Liberty Oil Mills, Village- Satne, Taluka- Shahapur, District- Thane.	Bhatsa river	19° 26.874'	73° 20.964'	MINARS	M
38	2654	River	Bhatsa river at U/s of Liberty Oil Mills, Village- Satne, Taluka- Shahapur, District- Thane.	Bhatsa river	19° 27.011'	73° 21.270'	MINARS	M
39	2709	River	Tansa river near road bridge, Village- Dakewali, Taluka- Wada, District- Thane.	Tansa river	19° 29.111'	73° 04.944'	MINARS	M
40	2712	River	Vaitarna river near road bridge, Village- Gandhare, Taluka- Wada, District- Thane.	Vaitarna river	19° 37.957'	73° 07.799'	MINARS	M

41	1461	River	Bhatsa river at D/s of Pise Dam, Village- Pise, Taluka- Bhiwandi, District- Thane.	Bhatsa River	19°18.919'	73°10.991 '	MINARS	M
42	1153	River	Krishna river at Rajapur Weir, Village- Rajapur, Taluka- Shirol, District- Kolhapur.	Krishna River	16°37.717 '	74°39.893'	MINARS	M
43	1310	River	Krishna river at Kurundwad near Santaji Ghorpade Ghat , Village-Narshingwadi, Kurundwad, Taluka- Shirol, District- Kolhapur.	Krishna River	16°41.276'	74°36.055'	MINARS	M
44	1904	River	Panchaganga river at U/s of Kolhapur town near Balinga Pumping station, Village-Balinga, Taluka- Karvir, District- Kolhapur.	Panchaganga River	16°41.553'	74°09.973'	MINARS	M
45	1905	River	Panchaganga river at D/s of Kolhapur town at Gandhi nagar near NH-4 bridge and MIDC, Village- Uchegaon, Taluka- Kolhapur, District- Kolhapur.	Panchaganga River	16°42.697'	74°16.822'	MINARS	M
46	2163	River	Panchaganga river at Shirol near Shirol Intake well, Village- Shirol, Taluka- Shirol, District- Kolhapur.	Panchaganga river	16°43.313'	74°35.672'	MINARS	M
47	1311	River	Panchaganga river at Ichalkaranji near MIDC intake well. Village- Shiradhwad (Ichalkaranji ghat), Taluka- Hatkanangale, District- Kolhapur.	Panchaganga River	16°39.950'	74°28.495'	MINARS	M
48	1906	River	Krishna river at Walwa, D/s of Islampur near Vithal Temple, Village- Walwa, Taluka- Walwa, District- Sangli.	Krishna River	17°01.674	74°22.131'	MINARS	M
49	2164	River	Vashishti river at U/s of Three M Paper Mills near M/s Multifilms Plastic Pvt. Ltd ., Village- Kherdi, Taluka- Chiplun, District- Ratnagiri.	Vashishti river	17°31.513'	73°33.057'	MINARS	M
50	2713	River	Vashishti river at D/s of Three M Paper Mills near Chiplun water intake jackwell, Village- Kherdi, Taluka- Chiplun, District- Ratnagiri.	Vashishti river	17° 39.567'	73° 32.357'	MINARS	M
51	2714	River	Vashishti river at U/s of Pophali near Konphansawane bridge, Village- Pophali, Taluka- Chiplun, District- Ratnagiri.	Vashishti river	17° 26.266'	73° 39.420'	MINARS	M
52	2804	Creek	Karambavane creek at Chiplun, Village- Karambavane, Taluka- Chiplun, District- Ratnagiri.	Karambavane creek	17° 34.867'	73° 25.913'	MINARS	M
53	2676	River	Muchkundi river at Waked, Ratnagiri, near M/s Asahi India Glass Ltd., Village- Waked, Taluka- Lanja, District- Ratnagiri.	Muchkundi river	16° 46.450'	73° 34.968'	MINARS	M
54	2813	Sea-water	Sea Water at Ganapathipule, Village- Ganapatipule, Taluka- Ratnagiri, District- Ratnagiri.	Sea water	17° 08.721'	73° 15.930'	MINARS	M

55	2814	Sea-water	Sea water at Bhagwati Bunder, Ratnagiri near Ultra Tech Cement Jetty , Village- Mirkarwada, Taluka- Ratnagiri, District- Ratnagiri.	Sea water	16° 59.932'	73° 16.349'	MINARS	M
56	2815	Sea-water	Madvi sea water at Ratnagiri near Jodhale Maruti Temple, Village- Madvigaon, Taluka- Ratnagiri, District- Ratnagiri.	Sea water	16° 59.312'	73° 17.055'	MINARS	M
57	2790	Nalla	Pimpal-Paneri nalla at Ratnagiri near Finolex Industries, Village- Yahganigaon, Taluka- Ratnagiri, District- Ratnagiri.	Nalla	16° 55.175'	73° 17.944'	MINARS	M
58	2165	Marine	Sea water at Gateway of India, Village- Colaba, Taluka- Colaba, District- Mumbai.	Sea water	18°55.348'	72°50.081'	MINARS	M
59	2166	Marine	Sea water at Charni road choupathy, Village- Girgaon, Taluka- Mumbai, District- Mumbai.	Sea water	18°56.977'	72°49.127'	MINARS	M
60	2167	Marine	Sea water at Worli seaface, Village- Worli, Taluka- Worli, District- Mumbai.	Sea water	18°59.820'	72°48.722'	MINARS	M
61	1318	Creek	Mahim creek at Mahim Bay, Village- Mahim, Taluka- Mumbai, District- Mumbai.	Mahim creek	19° 02'	72° 48'	MINARS	M
62	2808	Sea-water	Sea water at Nariman Point, Village- Colaba, Taluka- Colaba, District- Mumbai.	Sea water	18° 55.534'	72° 49.108'	MINARS	M
63	2809	Sea-water	Sea water at Malabar Hill, Village- Walkeshwar,Taluka- Mumbai,District- Mumbai.	Sea water	18° 57.176'	72° 48.400'	MINARS	M
64	2810	Sea-water	Sea water at Haji Ali, Village- Worli, Taluka- Worli, District- Mumbai.	Sea water	18° 58.722'	72° 48.685'	MINARS	M
65	2811	Sea-water	Sea water at Shivaji park (Dadar choupathy), Village- Dadar, Taluka-Dadar, District- Mumbai.	Sea water	19° 01.570'	72° 50.069'	MINARS	M
66	2168	River	Mithi river near Road bridge, Village- Mahim, Taluka- Bandra, District- Mumbai.	Mithi River	19°03.095'	72°50.907'	MINARS	M
67	2169	Marine	Sea water at Versova beach, Village- Versova, Taluka- Andheri, District- Mumbai.	Sea water	19°08.321'	72°48.349'	MINARS	M
68	2812	Sea-water	Sea water at Juhu beach, Village- Juhugaon, Taluka- Santacruz, District- Mumbai.	Sea water	19° 05.795'	72° 49.564'	MINARS	M

112	1317	Creek	Thane creek at Elephanta Island, Village- Elephanta Island , Taluka- Mumbai, District- Mumbai.	Thane creek	18° 57'	72° 57'	MINARS	M
69	1908	River	Kolar river before confluence with Kanhan river at Waregaon Bridge, Village- Waregaon, Taluka-Kamptee, District-Nagpur.	Kolar River	21° 13'	79° 12'	MINARS	M
70	2170	River	Kanhan river at U/s of M/s Vidarbha Paper Mills, Village-Sinora, Taluka- Parseoni, District- Nagpur.	Kanhan river	21°12.679'	79°14.127'	MINARS	M
71	2171	River	Kanhan river at D/s of M/s Vidarbha Paper Mills, Village-Sinora, Taluka- Parseoni, District- Nagpur.	Kanhan river	21°12.575'	79°14.203'	MINARS	M
72	1315	River	Wardha river at Pulgaon Railway Bridge, Village-Pulgaon,Taluka - Wardha, District- Wardha.	Wardha River	20° 30'	78° 20'	MINARS	M
73	1909	River	Kanhan river at D/s of Nagpur, Village- Agargaon, Taluka- Kuhi, District- Nagpur.	Kanhan River	21° 15'	79° 08'	MINARS	M
74	1910	River	Wainganga river after confluence with Kanhan river, Village- Ambhora,Taluka- Kuhi, District- Nagpur.	Wainganga River	21° 16'	79° 10'	MINARS	M
75	2722	River	Wena river at U/s of Mohata Mills, near Railway bridge on Wardha – Chandrapur Railway line, Village-Hinganghat, Taluka- Hinganghat, District- Wardha.	Wena river	20° 57.008'	79° 00.756'	MINARS	M
76	2723	River	Wena river at D/s of Mohata Mills, near bridge on Hinganghat- Wadner road, Village- Hinganghat, Taluka-Hinganghat, District- Wardha.	Wena river	20° 32.655'	78° 48.714'	MINARS	M
77	2172	River	Wainganga river at D/s of Ellora Paper Mills, Village-Tumsar, Taluka- Tumsar, District- Bhandara.	Wainganga river	21°21.307'	79°47.943'	MINARS	M
78	2173	River	Wainganga river at U/s of Ellora Paper Mills, Village-Tumsar, Taluka- Tumsar, District- Bhandara.	Wainganga river	21°21.454'	79°47.942'	MINARS	M
79	1095	River	Godavari river at U/s of Gangapur Dam, Village-Gangapur,Taluka- Nashik, District- Nashik.	Godavari River	20°02.400 '	73°40.751'	MINARS	M
80	1096	River	Godavari river at Ramkund, Village- Panchavati, Taluka-Nashik, District- Nashik.	Godavari River	20°00.482'	73°47.542'	MINARS	M
81	1211	River	Godavari river at D/s of Nashik near Amardham, Village-GadgebabaMaharaj Nagar, Taluka - Nashik, District-Nashik.	Godavari River	20°00.109'	73°47.842'	MINARS	M

82	1251	River	Tapi river at U/s, Bhusawal,Village- Bhusawal Railway Colony, Taluka- Bhusawal, District- Jalgaon.	Tapi River	21°03.671'	75°47.537'	MINARS	M
83	1313	River	Tapi river at Ajnad village, Village-Ajnad , Taluka- Raver, District-Jalgaon.	Tapi River	21°14.696'	76°08.898'	MINARS	M
84	1314	River	Tapi river at Ubad village near Gujratborder, Village-Ubad, Taluka- Shahada, District- Nandurbar.	Tapi River	21°31.799'	74°19.149'	MINARS	M
85	2177	River	Godavari river near Someshwar Temple, Village-Someshwar, Taluka- Nashik, District- Nashik.	Godavari river	20°01.391'	73°43.740'	MINARS	M
86	2178	Drain	Chikhali nallah meets Godavari river, Village- Chikhali, Taluka- Nashik, District- Nashik.	Drain	20°01.022'	73°44.116'	MINARS	M
87	2179	River	Godavari river at Hanuman Ghat, Village- Nashik city, Taluka- Nashik, District- Nashik.	Godavari river	20°00.546'	73°47.020'	MINARS	M
88	2180	River	Godavari river at Tapovan,Village- Tapovan, Taluka-Nashik, District- Nashik.	Godavari river	20°00.007'	73°48.907'	MINARS	M
89	2181	River	Godavari river at Kapila- Godavari confluence point, Village- Tapovan, Taluka- Nashik, District- Nashik.	Godavari river	20°00.012'	73°48.914'	MINARS	M
90	2182	River	Godavari river at Saikheda village, Village- Saikheda, Taluka- Niphad, District- Nashik.	Godavari river	20°00.859'	74°00.350'	MINARS	M
91	2183	River	Godavari river at Nandur-Madhmeshwar Dam, Village-Nandur, Taluka- Niphad, District- Nashik.	Godavari river	20°00.535'	74°07.948'	MINARS	M
92	2652	River	Amravati river at D/s. of Dondaicha, Village- Dondaicha, Taluka- Dhule, District- Dhule.	Amravati river	21° 19.688'	74° 34.184'	MINARS	M
93	2658	River	Bori river, D/S of Amalner, Village- Amalner, Taluka-Jalgaon, District- Jalgaon.	Bori river	21° 03.360'	75° 04.283'	MINARS	M
94	2659	River	Burai river before confluence to Tapi river, Village-Mukudas, Taluka- Dhule, District- Dhule.	Burai river	21° 18.077'	75° 47.818'	MINARS	M
95	2660	River	Darna river at Chehedi water works (pumping station), Village- Chehedi, Taluka- Nashik, District- Nashik.	Darna river	19° 55.873'	73° 51.429'	MINARS	M

96	2661	River	Darna river at Aswali (Darna Dam),Village-Aswali,Taluka- Igatpuri,District- Nashik.	Darna river	19° 48.184'	73° 44.276'	MINARS	M
97	2662	River	Darna river at MES site pumping station, Village-Bhagur, Taluka- Nashik, District- Nashik.	Darna river	19° 52.114'	73° 49.662'	MINARS	M
98	2663	River	Darna river at Bhagur pumping station near Pandhurli bridge, Village- Bhagur,Taluka- Nashik,District- Nashik.	Darna river	19° 52.306'	73° 50.235'	MINARS	M
99	2664	River	Darna river at Sansari, Village- Sansari,Taluka-Nashik,District- Nashik.	Darna river	19° 54.350'	73° 50.546'	MINARS	M
100	2666	River	Gomai river D/s. of Shahada, Village- Shahada,Taluka-Dhule,District- Dhule.	Gomai river	21° 32.744'	74° 27.618'	MINARS	M
101	2667	River	Hiwara river at D/S of Pachora, Village- Pachora,Taluka-Jalgaon,District- Jalgaon.	Hiwara river	20° 40.031'	75° 21.464'	MINARS	M
102	2670	River	Kan river at Sakri water works, Village- Sakri, Taluka-Dhule, District- Dhule.	Kan river	20° 59.642'	74° 17.48'	MINARS	M
103	2674	River	Mor river near Padalashe, Village- Padalashe,Taluka-Jalgaon, District- Jalgaon.	Mor river	21° 06.455'	75° 47.515'	MINARS	M
104	2684	River	Panzara river, Near Panzarakan SSK Ltd, Village-Panzara,Taluka- Dhule, District- Dhule.	Panzara river	20° 57.405'	74° 17.598'	MINARS	M
105	2710	River	Titur river at D/S of Chalisgaon, Village-Chalisgaon,Taluka- Jalgaon,District- Jalgaon.	Titur river	20° 27.987'	75° 01.165'	MINARS	M
106	2718	River	Waghur river at- Sakegaon before Confluence with Tapi river, Village- Sakegaon,Taluka- Jalgaon,District-Jalgaon.	Waghur river	21° 05.592'	75° 41.642'	MINARS	M
107	1252	River	Girna river at Jalgaon at intake of Girna pump huose, Village- Girna pump house area, Taluka- Jalgaon, District- Jalgaon.	Girna River	20°59.372'	75°30.942'	MINARS	M
108	1253	River	Girna river at Malegaon road bridge, Village- Malegaon, Taluka- Malegaon, District- Nashik.	Girna River	20°32.106'	74°31.220'	MINARS	M
109	1907	River	Rangavali river at D/s of Navapur near Rangavali bridge, Village- Navapur, Taluka- Navapur, District- Nandurbar.	Rangavali River	21°09.794'	73°47.211'	MINARS	M

110	2185	Creek	Vashi creek at Vashi bridge, Village- Vashi,Taluka-Thane,District- Thane.	Vashi creek	19°03.832'	72°58.682'	MINARS	M
111	2184	Creek	Vashi creek at Airoli bridge, Village- Airoli,Taluka-Thane, District- Thane.	Vashi creek	19°08.997'	72°59.031'	MINARS	M
113	1463	River	Nira river at Sarola bridge, Village- Sarola, Taluka-Bhor, District- Pune.	Nira River	18°10.588'	73°57.287 '	MINARS	M
114	2191	River	Mutha river at Sangam bridge near Ganapathyghat, Village - Shivaji Nagar, Taluka- Pune, District- Pune.	Mutha river	18°31.815'	73°51.662'	MINARS	M
115	2192	River	Mula - Mutha river at Mundhawa bridge,Village-Mundhawa,Taluka- Haweli,District- Pune.	Mula -Mutha river	18°32.206'	73°56.015'	MINARS	M
116	2193	River	Mula river at Aundh bridge, Village- Aundhgaon,Taluka-Haweli, District- Pune.	Mula river	18°34.049'	73°48.675'	MINARS	M
117	2194	River	Mula river at Harrison bridge near Mula-Pawana sangam, Village- Bopodi,Taluka- Haweli, District- Pune.	Mula river	18°34.462'	73°50.139'	MINARS	M
122	2682	River	Nira river at U/s of Jubilant Organosis, Village- Nira (Dattaghat),Taluka- Baramati, District- Pune.	Nira river	18° 05.811'	74° 12.730'	MINARS	M
118	2195	River	Nira river at D/s of Jubilant Organosis, Village- Nimbut, Taluka- Baramati, District- Pune.	Nira river	18°06.093'	74°14.038'	MINARS	M
119	2656	River	Bhima river- Backwater of Ujani Dam, near raw water pump house, Village- Kumbargaon, Taluka- Indapur, District- Pune.	Bhima river	18° 16.341'	74° 47.893'	MINARS	M
120	2678	River	Mutha river near Veer Savarkar Bhavan, Village- Pune M.C, Taluka- Pune, District -Pune.	Mutha river	18° 31.287'	73° 51.018'	MINARS	M
121	2679	River	Mutha river at Deccan bridge, Village- Deccan,Taluka-Pune, District- Pune.	Mutha river	18° 30.910'	73° 50.677'	MINARS	M
123	1189	River	Bhima river at Pune (Mutha river) at U/s of Vithalwadi near Shankar Mandir, Village- Vithalwadi, Taluka-Haweli, District- Pune.	Bhima River	18°29.012 '	73°49.554'	MINARS	M
124	1190	River	Bhima river at D/s of Bundgarden, Village - Yerwada,Taluka- Haweli, District- Pune.	Bhima River	18°32.647 '	73°52.946'	MINARS	M

125	1191	River	Bhima river after confluence with Mula-Mutha at Pargaon near Vasant Bandara,Village- Pargaon,Taluka- Daund, District- Pune.	Bhima River	18°34.074 '	74°22.681'	MINARS	M
126	1192	River	Bhima river at Daund near Mahadev temple,Village- Daund, Taluka- Daund, District- Pune.	Bhima River	18°28.234 '	74°35.235'	MINARS	M
127	2680	River	Mutha river at Khadakvasla Dam, Village- Khadakvasla,Taluka- Haweli, District- Pune.	Muthar river	18° 26.433'	73° 46.411'	MINARS	M
128	2197	River	Indrayani river at D/s of Alandigaon, Village- Alandigaon, Taluka- Haweli, District- Pune.	Indrayani river	18°39.428'	73°54.600'	MINARS	M
129	2655	River	Bhima river at Koregaon near Koregaon bridge, Village- Koregaon,Taluka- Shirur, District- Pune.	Bhima river	18° 38.712'	74° 03.303'	MINARS	M
130	2665	River	Ghod river at Shirur, Village- Shirur,Taluka- Shirur,District- Pune.	Ghod river	18° 49.961'	74° 23.504'	MINARS	M
131	2668	River	Indrayani river at D/s of Moshi village. Village- Moshi, Taluka- Haweli, District- Pune.	Indrayani river	18° 41.019'	73° 52.713'	MINARS	M
132	2669	River	Indrayani river at U/s of Moshigaon,Village- Moshi, Taluka- Haweli, District- Pune.	Indrayani river	18° 41.331'	73° 50.793'	MINARS	M
133	2677	River	Mula-Mutha river at D/s of Theur, Village- Theur, Taluka- Haweli, District- Pune.	Mula-Mutha river	18° 31.846'	74° 20.895'	MINARS	M
134	2715	River	Vel river at Shikrapur, Village- Shikrapur,Taluka- Shirur, District- Pune.	Vel river	18° 41.614'	74° 08.120'	MINARS	M
135	2186	River	Venna river at Varye, Village - Varye,Taluka- Satara, District- Satara.	Venna	17°43.793'	73°58.928'	MINARS	M
136	2187	River	Krishna river at Kshetra Mahuli, Village- Kshetra- Mahuli,Taluka- Mahuli, District- Satara.	Krishna river	17°41.735'	74°03.286'	MINARS	M
137	2188	River	Krishna river at Krishna- Venna Sangam Mahuli , Village- Mahuli,Taluka- Mahuli, District- Satara.	Krishna river	17°41.445'	74°03.088'	MINARS	M
138	2189	River	Koyna River at Karad, Village- Karad,Taluka- Karad, District- Satara.	Koyna River	17°16.668'	74°10.528'	MINARS	M

139	2190	River	Krishna river at Wai, Village- Wai,Taluka- Wai,District- Satara.	Krishna river	17°34.304'	74°02.862'	MINARS	M
140	2681	River	Nira river at Sangavi, Village- Sangavi, Taluka- Phaltan, District- Satara.	Nira river	18° 03.424'	74° 29.320'	MINARS	M
141	2683	River	Nira river at Shindewadi, Village- Shirval, Taluka- Khandala, District- Satara.	Nira river	18° 08.771'	73° 59.044'	MINARS	M
142	2711	River	Urmodi river at Nagthne, Village- Nagthane,Taluka- Satara, District- Satara.	Urmodi river	17° 34.305'	74° 02.863'	MINARS	M
143	2716	River	Venna river at Mahabaleshwar, Village- Mahabaleshwar, Taluka- Mahabaleshwar, District- Satara.	Venna river	17° 55.296'	73° 41.475'	MINARS	M
144	2717	River	Venna river at Mahuli, Village- Mahuli, Taluka- Mahuli, District- Satara.	Venna river	17° 41.566'	74° 03.043'	MINARS	M
145	1194	River	Krishna river at Dhom Dam, Village- Wai, Taluka- Mahabaleshwar, District-Satara.	Krishna river	17° 58'	73° 50'	MINARS	M
146	1188	River	Bhima river at Narsingpur near Sangam bridge after confluence with Nira, Village- Narsingpur, Taluka- Malshiros, District- Solapur.	Bhima River	17° 30'	75° 30'	MINARS	M
147	1911	River	Chandrabhaga river at U/s of Pandharpur town, Village- Gursale,Taluka- Pandharpur, District- Solapur.	Chandrabhaga River	17°43.797'	75°18.745'	MINARS	M
148	1912	River	Chandrabhaga river at D/s of Pandharpur town rear Vishnupant Mandir, Village- Gopalpur,Taluka- Pandharpur,District- Solapur.	Chandrabhaga River	17°40.086'	75°20.839'	MINARS	M
149	2705	River	Sina river near Laboti toll naka, Village- Laboti,Taluka- Mohal, District- Solapur.	Sina river	17° 47.095'	75° 42.577'	MINARS	M
150	2789	Nalla	Nalla at D/s of Aklai Mandir, Village- Aklai, Taluka- Malshiras, District- Solapur.	Nalla	17° 53.339'	75° 01.541'	MINARS	M
151	2196	River	Pawana river at Sangavigaon, Village- Sangavigaon, Taluka- Haweli, District- Pune.	Pawana river	18°34.540'	73°49.535'	MINARS	M
152	2690	River	Pawana river at Kasarwadi, Village- Kasarwadi, Taluka- Haweli, District- Pune.	Pawana river	18° 36.137'	73° 49.306'	MINARS	M

153	2691	River	Pawana river at Dapodi bridge, at Pawana- Mulla Sangam, Village- Dapodi, Taluka- Haweli, District- Pune.	Pawana river	18° 34.429'	73° 49.909'	MINARS	M
154	2692	River	Pawana river at Ravet Weir, Village- Ravet, Taluka- Haweli, District- Pune.	Pawana river	18° 38.374'	73° 44.867'	MINARS	M
155	2693	River	Pawana river at Chinchwadgaon, Village- Chinchwadgaon,Taluka- Haweli,District- Pune.	Pawana river	18° 37.553'	73° 46.681'	MINARS	M
156	2694	River	Pawana river at Pimprigaon, Village- Pimprigaon, Taluka- Haweli, District- Pune.	Pawana river	18° 37.301'	73° 47.903'	MINARS	M
157	1151	River	Patalganga river at Shilphata bridge, Village- Khopoli,Taluka- Khalapur, District- Raigad.	Patalganga River	18°48.075 '	73°19.391'	MINARS	M
158	1462	River	Patalganga river near intake of MIDC water works (Turade w/w). Village- Turade, Taluka- Khalapur, District- Raigad.	Patalganga River	18°53.222'	73°10.761 '	MINARS	M
159	2685	River	Patalganga river at D/s of Kharpada bridge , Village- Kharpada, Taluka- Khalapur, District- Raigad.	Patalganga river	18° 50.259'	73° 05.339'	MINARS	M
160	2686	River	Patalganga river at Vyal Pump house, Village- Vyal, Taluka- Khalapur, District- Raigad.	Patalganga river	18° 52.275'	73° 12.475'	MINARS	M
161	2687	River	Patalganga river at Khalapur pumping station, Village- Khalapur, Taluka- Khalapur, District- Raigad.	Patalganga river	18° 49.504'	73° 17.000'	MINARS	M
162	2688	River	Patalganga river at Savroli bridge, Village- Savroli,Taluka- Khalapur,District- Raigad.	Patalganga river	18° 49.020'	73° 17.201'	MINARS	M
163	2689	River	Patalganga river at Gagangiri Maharaj Temple, Village- Khopoli, Taluka- Khalapur, District- Raigad.	Patalganga river	18° 47.216'	73° 21.164'	MINARS	M
164	2803	Creek	Panvel creek at Kopra bridge, Village- Kopra,Taluka- Panvel, District- Raigad.	Panvel creek	19° 02.053'	73° 04.997'	MINARS	M
165	1152	River	Kundalika river at Roha bridge, Village-Roha, Taluka- Roha, District- Raigad.	Kundalika River	18°26.444 '	73°07.245'	MINARS	M
166	2198	River	Kundalika river at Are Khurd (Saline zone), Village- Arekhurd,Taluka- Roha, District- Raigad.	Kundalika River	18°28.941'	73°02.911'	MINARS	M

167	2671	River	Kundalika river near Salav bridge (Saline zone), Village- Salav, Taluka- Roha, District- Raigad.	Kundalika river	18° 32.327'	72°56.119 '	MINARS	M
168	2672	River	Kundalika river at Dhatav at Jackwell , Village- Dhatav,Taluka- Roha, District- Raigad.	Kundalika river	18° 25.819'	73° 09.819'	MINARS	M
169	2651	River	Amba river at D/s of Waken bridge, Village- Waken phata, Taluka- Roha, District- Raigad. (u/s of the jackwells of M/s Supreme Petrochemicals & MIDC)	Amba river	18° 31.150'	73° 09.434'	MINARS	M
170	2199	River	Savitri river at Ovale village, Village- Ovale, Taluka- Mahad, District- Raigad.	Savitri river	18°04.239'	73°19.942'	MINARS	M
171	2701	River	Savitri river Jackwell at Upsa kendre , Village- Nangalwadi, Taluka- Mahad, District- Raigad.	Savitri river	18° 05.515'	73° 27.943'	MINARS	M
172	2702	River	Savitri river at Shedav Dov, Village- Shedav Dov, Taluka- Mahad, District- Raigad.	Savitri river	18° 05.177'	73° 26.613'	MINARS	M
173	2703	River	Savitri river at Dadli road bridge, Village- Dadli, Taluka- Mahad, District- Raigad.	Savitri river	18° 04.455'	73° 25.237'	MINARS	M
174	2704	River	Savitri river at Muthavali village, Village- Muthavali, Taluka- Mahad, District- Raigad.	Savitri river	18° 04.317'	73° 23.647'	MINARS	M
175	2782	Nalla	Rabodi nalla, Village- Rabodi,Taluka- Thane, District- Thane.	Nalla	19° 12.081'	72° 59.173'	MINARS	M
176	2783	Nalla	Colour chem Nalla, Village- Majiwada,Taluka- Thane,District- Thane.	Nalla	19° 12.957'	72° 59.153'	MINARS	M
177	2784	Nalla	Sandoz nalla, Village- Sandozbaug,Taluka- Thane,District- Thane.	Nalla	19° 14.219'	72° 59.844'	MINARS	M
178	2792	Creek	Ulhas creek at Mumbra Reti bunder, Village- Mumbra,Taluka- Thane, District- Thane.	Ulhas Creek	19° 12.573'	73° 01.068'	MINARS	M
179	2793	Creek	Thane creek at Kalwa road bridge, Village- Kalwa,Taluka- Thane,District- Thane.	Thane creek	19° 11.736'	72° 59.152'	MINARS	M
180	2794	Creek	Ulhas creek at Kolshet Reti bunder, Village- Kolshet, Taluka- Thane, District- Thane.	Ulhas creek	19° 14.723'	72° 59.856'	MINARS	M

181	2795	Creek	Ulhas creek at Gaimukh at Nagla Bunder on Ghod bunder road, Village- Nagla,Taluka- Thane,District- Thane.	Ulhas creek	19° 17.229'	72° 56.310'	MINARS	M
182	1316	Creek	Bassein creek at VasaiFort , Village- Bassein, Taluka- Vasai, District- Thane.	Bassein creek	19° 18'	72° 46'	MINARS	M
183	2696	River	Pehlar Dam on Pehlar river- inlet of water works, Village- Pehlar, Taluka- Vasai, District- Thane.	Pehlar river	19° 26.601'	72° 53.374'	MINARS	M
184	2796	Creek	Ulhas creek at Versova bridge, Village- Versova, Taluka- Vasai, District- Thane.	Ulhas creek	19° 17.225'	72° 54.337'	MINARS	M
185	2797	Creek	Bhayander creek at D/s of Railway bridge at Jasal park choupathy, Village- Navghar, Taluka- Bhayander, District- Thane.	Bhayander creek	19° 19.042'	72° 51.409'	MINARS	M
186	2805	Sea-water	Arnala sea, Village- Arnala, Taluka- Vasai, District- Thane.	Arnalasea	19° 26.951'	72° 44.950'	MINARS	M
187	2806	Sea-water	Uttan sea at Bhayander, Village- Uttan, Taluka- Bhayander, District- Thane.	Uttan sea	19° 16.822'	72° 47.007'	MINARS	M
188	2785	Nalla	BPT, Navapur, Village- Navapur, Taluka- Palghar, District- Thane.	Nalla	19° 47.215'	72° 41.404'	MINARS	M
189	2786	Nalla	Tarapur MIDC Nalla (near Sump 1), Village- MIDC Tarapur, Taluka- Palghar, District- Thane.	Nalla	19° 47.138'	72° 44.412'	MINARS	M
190	2787	Nalla	Tarapur MIDC Nalla (Near Sump 2), Village- MIDC Tarapur, Taluka- Palghar, District- Thane.	Nalla	19° 48.336'	72° 43.464'	MINARS	M
191	2788	Nalla	Tarapur MIDC Nalla (Near Sump 3), Village- MIDC Tarapur, Taluka- Palghar, District- Thane.	Nalla	19° 46.933'	72° 43.309'	MINARS	M
192	2798	Creek	Kharekuran Murbe creek , Village- Kharekuran, Taluka- Palghar, District- Thane.	Kharekuran Murbe creek	19° 44.446'	72° 42.604'	MINARS	M
193	2799	Creek	Dandi Creek, Village- Dandi, Taluka- Palghar, District- Thane.	Dandi Creek	19° 48.041'	72° 41.255'	MINARS	M
194	2800	Creek	Sarwali Creek, Village- Sarwali, Taluka- Palghar, District- Thane.	Sarawali Creek	19° 46.201'	72° 45.091'	MINARS	M

195	2807	Sea-water	Navapur sea, Village- Navapur, Taluka- Palghar, District- Thane.	Navapur sea	19° 47.568'	72° 41.437'	MINARS	M
196	2706	River	Surya River at U/S of Surya Dam, Village- Dhamni, Taluka- Vikramgad, District- Thane.	Surya River	19° 55.064'	72° 03.463'	MINARS	M
197	2707	River	Surya river at MIDC pumping station on Boisar - Chillarphata road, Village- Garvashet, Taluka- Palghar, District- Thane	Surya River	19° 47.134'	72° 50.362'	MINARS	M
198	2708	River	Surya river at intake of Vasai-Virar water Scheme, Village- Masvan, Taluka- Palghar, District- Thane.	Surya River	19° 41.862'	72° 51.060'	MINARS	M
199	2801	Creek	Savta Creek, Village- Savta, Taluka- Dahanu, District- Thane.	Savta Creek	19° 57.905'	72° 46.792'	MINARS	M
200	2802	Creek	Dahanu Creek at Dahanu Fort, Village- Danugaon, Taluka- Dahanu, District- Thane.	Dahanu Creek	19° 58.312'	72° 43.132'	MINARS	M

NWMP STATION DETAILS (MINARS) GROUND WATER							
Sr No	Station code	Station Name	Water Body	Latitude	Longitude	NWMP Project	Monitoring Frequency
1	2001	Tube well at water treatment plant of M.C. Achalpur near Post Office, Village-Paratwada, Taluka- Achalpur, District- Amravati.	Tube well	21°18.166'	77°30.855'	MINARS	H
2	2002	Bore well Opp.Gajanan Maharaj Temple at Anjangaon road, Village-Anjangaon,Taluka- Akot, District- Akola.	Bore well	21°06.032'	77°03.431'	MINARS	H
3	1993	Dug well at Pandharpur, village - Pandharpur, Taluka-Gangapur, District-Aurangabad.	Dug well	19°50.197'	75°15.086'	MINARS	H
4	2200	Bore well at Katpur, near Z.P. School, Village-Katpur,Taluka- Paithan, District-Aurangabad.	Bore well	19°31.114'	75°23.887'	MINARS	H
5	2201	Dug well at Ranjangaon,Village-Ranjangaon, Taluka-Gangapur, District-Aurangabad.	Dug well	19°50.612'	75°12.599'	MINARS	H
6	2824	Dug well at Naregaon, Village- Naregaon, Taluka-	Dug well	19°53.615'	75°23.168'	MINARS	H
7	2825	Bore well at Wahegaon, near Zilla Parishad School, Village- Wahegaon, Taluka- Paithan, District- Aurangabad.	Bore well	19°33.678'	75°23.638'	MINARS	H
8	1994	Dug well at TPS-Durgapur, near Naseeb Kirana and general stores, Village-Durgapur, Taluka-Chandrapur,District-Chandrapur.	Dug well	20°00.341'	79°18.129'	MINARS	H
9	2003	Dug well at Plot No- 4, Street No.49-C, at Nehru Bal Udyan Azad Maidan, owned by Yavatmal M.C. Taluka-Yavatmal, District-Yavatmal.	Dug well	20°55.924'	77°43.472'	MINARS	H
10	2828	Dug well near Zilla Parishad Primary School, at Village- Visapur, Taluka- Ballarpur, District-Chandrapur.	Dug well	19°51.468'	79°19.958'	MINARS	H
11	2004	Bore well at Parvati Industrial Estate, Village-Yadrav, Taluka- Shirol, District- Kolhapur.	Bore well	16°43.742'	74°29.073'	MINARS	H
12	2005	Bore well at Khanjirenagar, Village-Khanjirenagar,Taluka-Hatkanangale,District-Kolhapur.	Bore well	16°42.785'	74°27.507'	MINARS	H
13	2006	Bore well at Shinoli near M/s Aqua Alloy Steel ,MIDC, Village-Shinoli, Taluka-Chandgad, District-Kolhapur.	Bore well	15°52.541'	74°22.940'	MINARS	H
14	2007	Bore well at Savali, near Gram Panchayat office, Village-Savali, Taluka- Miraj, District- Sangli.	Bore well	16°52.498'	74°38.829'	MINARS	H
15	2008	Dug well at Sambarwadi owned by Shri. Kishan Hali Rajput. Village-Sambarwadi, Taluka- Miraj, District- Sangli.	Dug well	16°55.831'	74°39.573'	MINARS	H
16	2202	Dug well at Ghane Kunt, near Awashi, owned by Shri. Rajendra Amre, Village- Ghane Kunt, Taluka- Khed, District-Ratnagiri.	Dug well	17°36.855'	73°28.627'	MINARS	H
17	2829	Bore well at MIDC, Shiroli near M/s Pratibha Enterprises, Village-Shiroli,Taluka-Hatkanangale,District- Kolhapur.	Bore well	16°45.617'	74°16.228'	MINARS	H
18	2830	Bore well at MIDC Gokul - Shirgaon, Village-Gokul-Shirgaon, Taluka- Karvir, District - Kolhapur.	Bore well	16°38.335'	74°17.347'	MINARS	H
19	2831	Dug well at Sakharali, near MIDC Islampur near Krishna Milk Industry, Village- Sakharali, Taluka-Walwa, District- Sangali.	Dug well	17°04.394'	74°16.546'	MINARS	H

20	2832	Dug well No. 1 at Brahmanwadi- Anjanwel, Owned by Shri. Vaidya, Village- Anjanwel, Taluka- Guhagar, District- Ratnagiri.	Dug well	17°33.649'	73°09.415'	MINARS	H
21	2833	Dug well No. 1 owned by Group Gram Panchayat at Arketwadi, near Masjid, Village- Arketwadi, Taluka- Khed, District- Ratnagiri.	Dug well	17°36.206'	73°26.449'	MINARS	H
22	2834	Dug well No. 2 at Arketwadi, Village- Arketwadi, T	Dug well	17°36.162'	73°26.336'	MINARS	H
23	2835	Dug well No. 2, Owned by Group Gram Panchayat, Brahmanwadi- Anjanwel, Village- Anjanwel, Taluka- Guhagar, District- Ratnagiri.	Dug well	17°33.662'	73°09.405'	MINARS	H
24	1995	Gram Panchayath Dug well , Near Balaji Gajbhiye House,Village-Khaperkheda (Ward No.4) , Taluka- Saoner, District- Nagpur.	Dug well	21°16.597'	79°06.709'	MINARS	H
25	1996	Gram Panchayath Dug well , Near Jagadamba G. M. S. Mandir Sahakari Sanstha, Village- Koradi,Taluka- Kamptee,District- Nagpur.	Dug well	21°15.341'	79°05.071'	MINARS	H
26	1998	Gram Panchayat Dug well near Gram Panchayat Office,Village-Brahmni,Taluka- Kalmeshwar,District- Nagpur.	Dug well	21°14.622'	78°54.382'	MINARS	H
27	2000	Dug well near Sarode Kirana Store, Village- Bhandewadi,Taluka- Nagpur,District- Nagpur.	Dug well	21°08.409'	79°08.873'	MINARS	H
28	1997	Bore well near Primary Health Centre, Village- Raipur,Taluka- Hingna,District- Nagpur.	Bore well	20°45.270'	78°40.029'	MINARS	H
29	2203	Hand Pump in the premises of Zilla Parishad Primary School, Village- Bhugaon,Taluka- Wardha,District- Wardha.	Hand pump	20°40.310'	78°38.745'	MINARS	H
30	2826	Dug well near Railway station & Cotton market, Village- Wardha, Taluka- Wardha, District- Wardha.	Dug well	20°44.084'	78°35.854'	MINARS	H
31	1999	Bore well Near Gram Panchayat office, Village- Changera,Taluka- Gondia,District- Gondia.	Bore well	21°34.744'	80°14.599'	MINARS	H
32	2827	Bore well Near Railway crossing at Dongri Buzurg, Village- Dongri- Buzurg, Taluka- Tumsar, District- Bandara.	Bore well	21°33.496'	79°40.816'	MINARS	H
33	1990	Bore well at BMW Site, Village-Burudgaon ,Taluka-Ahmednagar,District-Ahmednagar.	Bore well	19°01.688'	74°44.481'	MINARS	H
34	1991	Bore well at MSW Site,Village-Pathardi ,Taluka- Nashik,District- Nashik.	Bore well	19°55.386'	73°44.433'	MINARS	H
35	2204	Dug well at Gunjalwadi,Sangamner near Primary Health Care Center, Village-Gunjalwadi,Taluka- Sangamner,District-Ahmadnagar.	Dug well	19°35.125'	74°10.348'	MINARS	H
36	2816	Dug well of Mr.Sampat Walunj, near M/s Mahajeet Clayton, Village- Shinde village, Taluka- Nashik, District- Nashik.	Dug well	19°55.302'	73°54.154'	MINARS	H
37	2817	Bore well at Chitali near Wagh Vasthi, Village- Chitali, Taluka- Rahata, District- Ahmednagar.	Bore well	19°41.123'	74°38.154'	MINARS	H
38	2818	Bore well at M/s Spectron Ethers, Rasegaon near Siddeshwar Mahadev Mandir, Village- Rasegaon,Taluka-Dindori, District- Nashik.	Bore well	20°09.327'	73°44.658'	MINARS	H
39	1992	Dug well at MSW Site, owned by Shri. Dattu Kondiba Borate at Borate Vasthi, Village- Moshi, Pimpri Chinchwad, Taluka- Haweli, District-	Dug well	18°39.731'	73°51.001'	MINARS	H
40	2819	Dug well owned by Shri Deshmukh, Village- Malegaon, Taluka- Baramati, District- Pune.	Dug well	18°05.509'	74°30.168'	MINARS	H

41	2820	Dug well owned by Shri Shivaji Baban Darekar, Village- Sanaswadi, Taluka- Shirur, District- Pune.	Dug well	18°39.491'	74°06.437'	MINARS	H
42	2821	Bore well at Bale railway station premises owned by Shri. Digambar Joshi, Village- Dahegaon, Taluka- North Solapur, District- Solapur.	Bore well	17°40.460'	75°50.947'	MINARS	H
43	2822	Bore well near Chincholi MIDC, Village- Chincholi,	Bore well	17°45.850'	75°48.117'	MINARS	H
44	2823	Bore well at Shete Vasti, near old Tuljapur road, Village- Shete vasthi, Tuljapur naka, Taluka- Solapur, District- Solapur.	Bore well	17°41.887'	75°54.746'	MINARS	H
45	1989	Bore well at MWML site at Taloja, Village- Karawla- Taloja,Taluka- Panvel, District- Raigad.	Bore well	19°05.871'	73°06.903'	MINARS	H
46	1984	Bore well at M/s Tata Iron & Steel Co.Ltd, S-76, (Indl.Estate,Tarapur),Village-MIDC Tarapur, Taluka- Palghar,District-Thane.	Bore well	19°47.233'	72°43.851'	MINARS	H
47	1985	Dug well at 5 -Star Industrial estate, Village- Kashimira , Taluka- Mira-Bhayander, District- Thane.	Dug well	19°16.422'	72°52.310'	MINARS	H
48	1986	Bore well at Motapada, Village-Motapada, Taluka- Dahanu, District- Thane.	Bore well	19°41.185'	72°45.887'	MINARS	H
49	1987	Bore well at Vasai, Village-Gokhiware, Taluka- Vasai, District- Thane.	Bore well	19°24.783'	72°51.380'	MINARS	H
50	1988	Bore well at Gharatwadi, Village- Aliyali, Taluka- Palghar, District- Thane.	Bore well	19°41.183'	72°45.924'	MINARS	H

Annexure-IV

POLLUTED RIVER STRETCHES IN MAHARASHTRA (Jan to Nov 2019)							
Sr. No.	NAME OF RIVER	POLLUTED STRETCH	BOD (mg/l)		Fecal Coliform (MPN/100 ml)		Current Priority
			Min	Max	Min	Max	
Priority I							
1	GODAVARI	SOMESHWAR TEMPLE TO RAHED	4	28	1.8	9	II
2	KALU	Along ATALE VILLAGE	4	4	540	540	V
3	KUNDALIKA	SALAV TO ROHA	4	15	40	540	III
4	MITHI	POWAI TO DHARAVI	50	50	17000	17000	I
5	MORNA	AKOLA TO TAKALIJALAM	5.2	5.2	34	34	V
6	MULA	BOPODI TO AUNDH GAON	12.5	16.5	1600	1800	III
7	MUTHA	SHIVAJI NAGAR TO KHADAKWASLA DAM	3.2	28	25	1800	II
8	NIRA	SANGAVI TO SHINDEWADI	6.5	12.5	195	900	III
9	VEL	NHAVARE TO SHIKARPUR	9	9	140	140	IV
Priority II							
1	BHIMA	VITHALWADI TO TAKLI	5.5	24	170	1600	II
2	INDRAYANI	MOSHIGAON TO ALANDIGAON	6.5	8.5	350	900	IV
3	MULA-MUTHA	THEUR TO MUNDHWA BRIDGE	16.5	18.5	900	900	III
4	PAWANA	DAPODI TO RAVET	10	26	550	1800	II
5	WAINGANGA	TUMSA TO ASHTI	4	14	39	140	III
6	WARDHA	GHUGHUS TO RAJURA	4.4	8.2	32	130	IV
Priority III							
1	GHOD	ANNAPUR TO SHISHUR	7.5	7.5	550	550	IV
2	KANHAN	BHANDARA TO NAGPUR	7.2	22	40	170	II
3	KOLAR (MAH)	Along Koradi	5.8	5.8	140	140	V
4	KRISHNA	SHINDI TO KURUNDWAD	2.6	8	12	550	IV
5	MOR	JALGAON TO AMODA	9.8	9.8	4	4	IV
6	PATALGANGA	KHADEPADA TO KOPOLI	4	11	34	240	III
7	PEDHI	NARAYANPUR TO BHATKULI	10	10	220	220	IV
8	PENGANGA	MEHKAR TO UMARKHED	4.2	7.2	39	170	IV
9	PURNA	DHUPESHWAR TO ASEGAON	3.6	4.8	39	150	V
10	TAPI	RAVER TO SHAHADA	5.6	9.2	3.7	6	IV
11	URMODI	DHANGARWADI TO NAGTHANE	30	30	350	350	II
12	VENNA	MAHABALESHWAR TO MAHULI	3.5	7.5	50	200	IV
13	WAGHUR	SUNASGAON TO SAKEGAON	3.2	3.2	6.8	6.8	V
14	WENA	KAWADGHAT TO HINDANGHAT	4.7	7.6	33	39	IV
Priority IV							
1	BINDUSAR	SWARAJ NAGAR TO SNEHNAGAR	4.8	4.8	4	4	V
2	BORI	Along AMALNER	3.4	3.4	6.1	6.1	V
3	CHANDRABHAGA	PANDHARPUR TO SHEGAON DHUMALA	7.5	10.5	350	900	III
4	DARNA	IGATPURI TO SANSARI	4.2	5.2	1.8	6	V
5	GIRNA	MALEGAON TO JALGAON	3.2	4.2	2	2	V
6	HIWARA	PACHORA TO NIMBORA	3.5	3.5	6	6	V
7	KOYNA	KARAD TO PAPDARDE	7.5	7.5	550	550	IV
8	PEHLAR	PELHAR DAM TO GOLANI NAKA	4	4	170	170	V
9	SINA	SOLAPUR TO BANKALAGI	9	9	130	130	IV
10	TITUR	Along CHALISGAON, JALGAON	3.2	3.2	2	2	V
Priority V							
1	AMBA	BENSE TO ROHA	4	4	170	170	V
2	BHATSA	SHAHAPUR TO BHADANE	4	4	210	220	V
3	GOMAI	LONKHEDA TO SHAHDA	3.6	3.6	3.7	3.7	V
4	KAN	KAVATHE TO SAKARI	5.2	5.2	4	4	V
5	MANJARA	LATUR TO NANDED BRIDGE	6.5	6.5	2	2	IV
6	PANCHGANGA	SHIROL TO KOLHAPUR	2.4	2.8	12	20	Less Polluted
7	PANZARA	VARKHEDE TO DHULE	7.8	7.8	140	140	IV
8	RANGAVALI	TINTEMBA TO NAVAPUR	11.5	11.5	7	7	III
9	SAVITRI	DADLI TO MUTHAVALI	2.8	3.2	8.2	20	V
10	SURYA	DHAMNI DAM TO PALGHAR	4	4	170	280	V
11	TANSA	Along Thane	4	4	350	350	V
12	ULHAS	KALYAN TO BADLAPUR	4	4	79	110	V
13	VAITARNA	GANDHRE TO SARASHI	4	4	240	240	V
14	VASHISTI	KHERDI TO DALVATNE	3	3	6.8	7.8	V

ANNEXURE-VI

यू. पी. सिंह, आई. ए. एस
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सत्यमेव जयते

भारत सरकार
जल शक्ति मंत्रालय
जल संसाधन, नदी विकास
और गंगा संरक्षण विभाग
श्रम शक्ति भवन
रफी मार्ग, नई दिल्ली-110 001
GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT & GANGA REJUVENATION
SHRAM SHAKTI BHAWAN
RAFI MARG, NEW DELHI-110 001
http://www.mowr.gov.in

DO No. Legal/OA 673/2018/NMCG/2019 (Part File) March 11, 2020

Dear Sri Mohanty,

As you would be aware, Hon'ble NGT vide its Order dated 06.12.2019 in OA No. 673 of 2018 in the matter of "News item published in the Hindu authored by Shri Jacob Koshy titled More river stretches are now critically polluted: CPCB, with Dr. Tudi Indrasena Reddy &Ors versus UoI & Ors" had directed that an institutional mechanism be evolved for monitoring compliance to its Order by Chief Secretaries of all the States / UTs at State level and at the National level by the Secretary, Ministry of Jal Shakti with assistance of National Mission for Clean Ganga (NMCG) and Central Pollution Control Board (CPCB).

2. As per the Order, a meeting at the Central level is to be held with the Chief Secretaries of all States / UTs at least once a month to take stock of the progress and to plan further action. Accordingly, 2 meetings at Central level have been held at my level so far on 08.01.2020 and 19.02.2020 with the States, the minutes of which have already been circulated to the States for necessary action. Based on the discussions during the meeting held on 08.01.2020, teams comprising officials of NMCG, National River Conservation Directorate (NRCD) and CPCB have visited 5 States having large number of polluted stretches to review the pollution status (domestic and industrial), available sewage infrastructure and existing/ future gap to carry out Conditional Assessment and identify interventions required.

3. One team had undertaken a visit to Bhopal in Madhya Pradesh on 5th & 6th February 2020 to interact with various stakeholders, including representatives of local bodies and River Rejuvenation Committee (RRC) Members, on various issues relating to pollution control in the identified polluted river stretches in the State. The copy of the Visit Report of the team is enclosed for your kind perusal. The major observations and recommendations of the visit are as under:

(i) As informed by the State Government, there is improvement in the water quality of polluted river stretches as per CPCB Report of 2016 and currently analyzed by MPPCB. This needs to be resolved between CPCB & GPCB.

(ii) One of the most critical STP project for river Khan is likely to be completed by December, 2020. Efforts should be made for early completion of the project.

..2/-

(iii) One STP project in Nagda town is not being able to take off due to paucity of funds from State Government. Efforts should be made to ensure that the project is started expeditiously as it is the only town which is discharging untreated sewage in Chambal river.

(iv) Some of the river stretches have flow only during the monsoon season and remains dry for 8-9 months. The samples of such rivers (e.g. Kalisot river, Halali river, Khan river etc.) have been collected from stagnant pools and do not present the correct picture.

(v) Even after completion of sewerage projects, such river stretches may not come in Priority V or unpolluted category as no water flows through them.

4. I would request you to kindly direct the concerned officers to take necessary action on the points highlighted in the Visit Report and the decisions taken in the two review meetings at the Central level, ensure submission of monthly progress reports as well as compliance to the various directions of Hon'ble NGT issued vide its order dated 06.12.2019.

With regards,

Yours sincerely,

(U P Singh)

Shri Sudhi Ranjan Mohanty
Chief Secretary,
Government of Madhya Pradesh,
Mantralaya, Vallabh Bhavan-I
Bhopal, Madhya Pradesh – 462004

Tour Report for Madhya Pradesh

A team visited Bhopal during 5th – 6th February, 2020 to ascertain the ground reality and to interact with the stakeholders mainly representatives of local bodies (Municipal Corporations/Municipal Councils/Nagar and Gram Panchayat) responsible for sewerage infrastructure to be/being created for the said polluted river stretches.

Team members: -

- Dr. Pravin Kumar, Director Technical, NMCG
- Dr. P.N. Rymbai, Scientist 'B', NRCD
- Sunil Kumar Meena (Representative from CPCB)
- Shri Vijay Kumar Yadav, Assistant Engineer, NMCG

2. A meeting was conducted in the MPPCB office dated 5.02.2020 with the officials of pollution control board & ULBs etc. Member Secretary, Madhya Pradesh pollution control board chaired the meeting, Regional Officers (RO) were also present in the meeting.

3. Team visited the polluted river stretch II i.e. river Betwa from Mandideep to Vidisha. In Vidish one STP 22.25 MLD capacity was under construction and the schedule date of completion is Dec 2020.

4. A line diagram for priority stretch I & II was prepared to understand the locations. Maps are enclosed as annexure-II.

Dr. Pravin Kumar	**Vijay Kumar Yadav**	**Dr. P.N. Rymbai**	**Sunil Kumar Meena**
(Dir Technical)	**(ACE)**	**(Scientist B)**	**(Scientist D,CPCB)**

Annexure-1

Polluted River Stretches Present Status 2020

S N	Polluted River Stretches	Priority	Effluent generation in MLD	Major polluting sources/drains	Existing treatment MLD	Proposed treatment MLD	Time line	Agency	Present Status
1	River Khan at Indore from Kabitkhedi to Triveni Sangam (72 Km)	I	Sewage – 350 MLD	a. Piliyakhal nalla b. Palasia nala c. Azad nagar nala d. Tulsi nagar e. Khajarana f. Narvar g. Bhowarsala nalla h. Arvindo collage nalla i. Shakkar khedi nalla j. Katkia nalla	3 STPs - 335.0 MLD	05 STPs – 67 MLD	March 2020	MC, Indore	under construction
						01 STP – 10 MLD	Dec. 2020	-As above-	under construction
			Industrial – 1.45 MLD		01 CETP – 4.0 MLD	Not required	NA	-As above-	------
2	River Kshipra at Ujjain from Triveni to SiddhwAt Ujjain (10 Km)	I	Sewage – 90 MLD		01 STP – 83.0 MLD (NRCP)	01 STP - 92.5 MLD	Dec. 2020	MC , Ujjain	under construction
3	River Chambal at Nagda from Nagda to Rajgarh (16 Km)	I	Sewage –8.0 MLD		Nil	01 STP - 16.0 MLD	Dec. 2022	MC , Nagda	Not Sanction.
			Industrial -11.5 MLD		Grasim Industry (SFD) ETP up-gradation required for ZLD	11.5 MLD effluent to be made ZLD	Jan. 2021	M/s. Grasim Industries, (SFD), Nagda	under construction
4	River Betwa from Mandideep to Vidisha (70 Km)	II	**Mandideep**						
			Sewage – 2.5 MLD	a. Patel Nagar Madideep near Railway bridge	Nil	02 STPs – 3.0 MLD	Dec. 2022	MC Mandideep	Not Sanction.

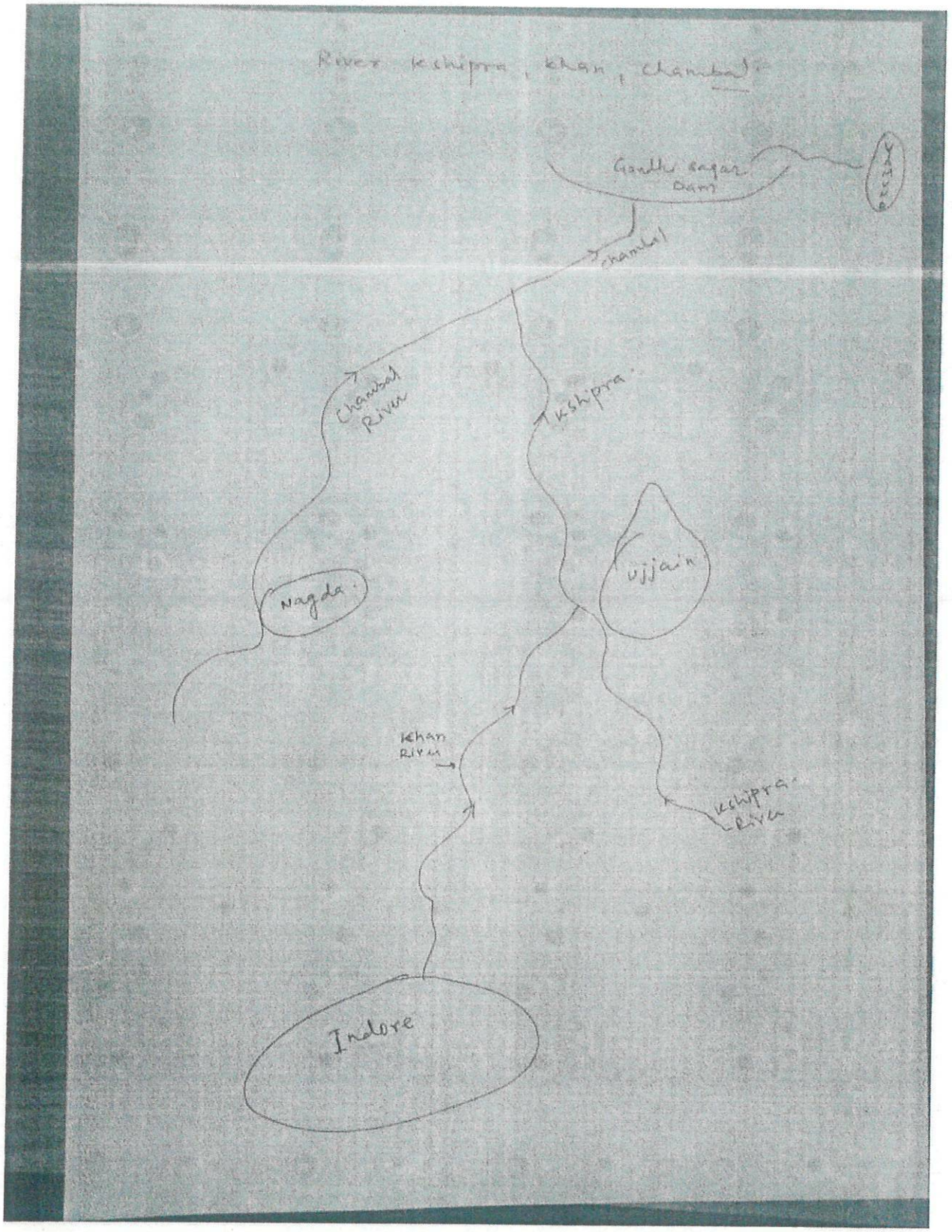
				b. AKVN WTP back-wash and Maderi Village before Nayapura Road bridge c. Nayapura Nallah d. Rahul Nagar behind Satlapur Industrial Area					
			Bhopal						
			Sewage – 80 MLD	a. Kaliasot before Bhojpur	03 STPs – 26.12 MLD	04 STPs –66.5 MLD	Dec. 2022	MC , Bhopal	Under construction– Three Land dispute-one
			Vidisha						
			Sewage – 22.25 MLD	a. Pilia Nallah b. Sewage Nallah of Vidisha city at downstream of Vidisha near Charanteerth.	01 STP – 7.2 MLD (NRCP)	01 STP –22.25 MLD	Dec. 2020	MC, Vidisha	under construction
5	River Kaliyasot (Kolar) from Suraj Nagar to Shirdipuram	IV		a. Shahapura lake & Kolar road b. Mandideep nala-1 c. Mandideep nala-2 d. Mandideep nala-3 e. Misroad Nallah	Action plan is included in Betwa River action plan				

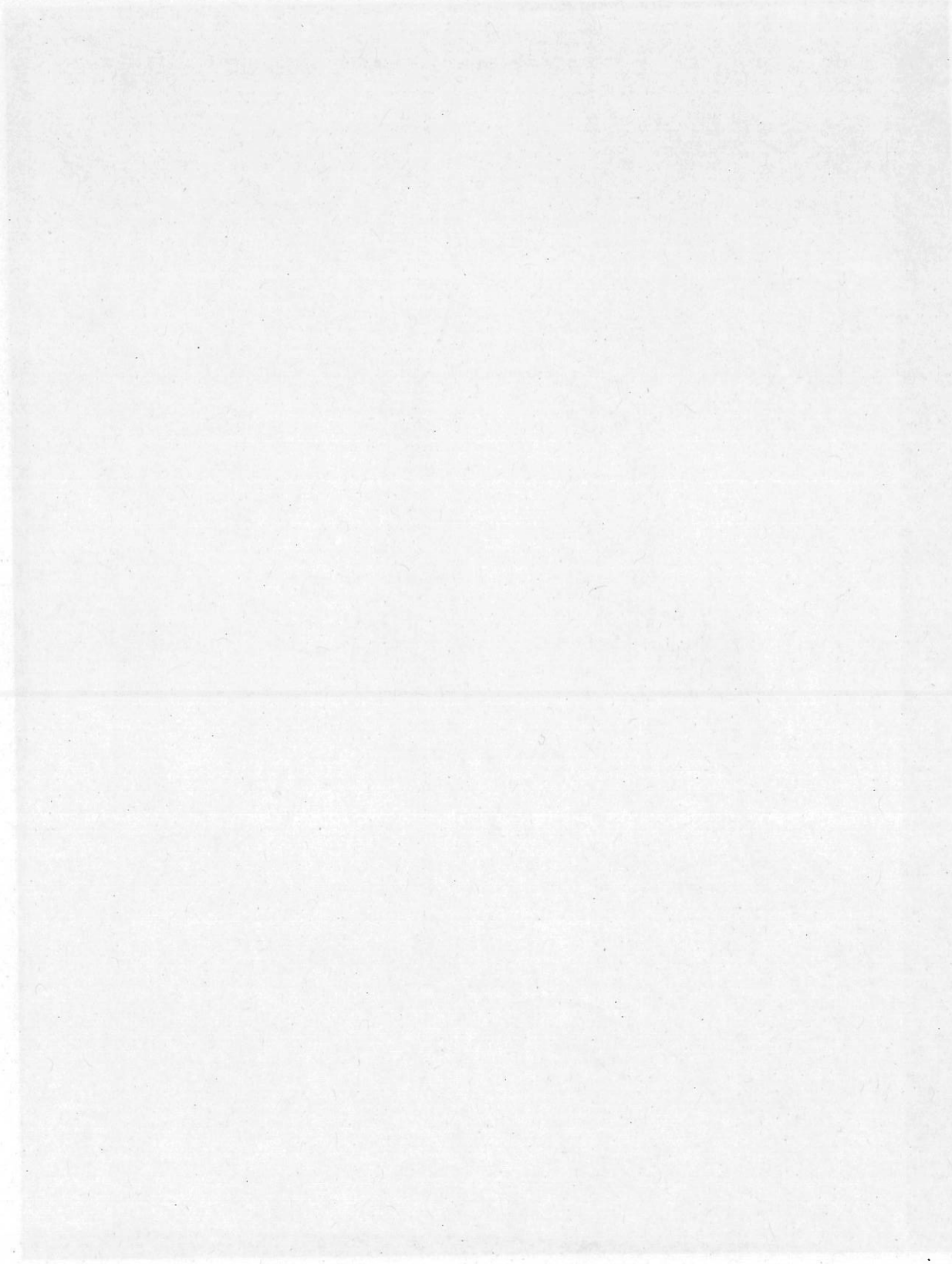
6	Kalisot at Mandideep	V			Action plan is included in Betwa River action plan Total (04 STP)				Under construction– Three Land dispute-one
7	River Tapti from Nepanagar to Burhanpur	IV		a. Masak nalla b. Pandhar nalla c. Jaweri nalla d. Nagjhiri nalla e. Gandha nalla f. Rajghat nalla g. Rajpura nalla h. Kadvissa nalla i. Pandrol nalla	River water quality is meeting the desirable Standards.	STP 18MLD	June 2021	MC Burhanpur	one STP completed
8	Gohad dam(River basely) at Gohad	IV		a. Morar b. Vaisali	Dam water quality is meeting the desirable Standards.	-			Not applicable
9	River Bichia at Rewa	V		a. Bicchiya nalla b. Rani talab area c. Akharaghat area d. Kuthuliya rea	River water quality is meeting the desirable Standards.	STPs 37 MLD	Dec. 2021	MC Rewa	one STP completed and 7Proposed
10	River Katni at Katni	V		a. Sagar pul nalla b. Gater ghat nalla c. Mohan ghat nalla d. Masorha ghta nala e. Chaighara basti f. Dharmlok Hospital nalla e. Juhla Bypass nalla	River water quality is meeting the desirable Standards.	03 STP 24.5 MLD	Dec. 2021	MC Katni	under construction
11	River Kunda at Khargone	V		a. Ondal nalla b. Implipura nalla	River water quality is meeting the	01 STP 17.6 MLD	Dec. 2021	MC Khargone	one STP completed

				c. Kaladeval nalla d. Ganesh Mandir e. Bavadi bus stand f. Anand nagar Dalki nalla	desirable Standards.				
12	River Maleni at Jaora	V		a. Piliya Khal nalla-1 b. Piliya Khal nalla-2 Piliya Khal nalla-3	River water quality is meeting the desirable Standards.	1 STP 05 MLD	Dec. 2021	MC Jaora	Not Sanction.
13	River Mandakini at Ramghat Chitrakut.	V		a. Vaidehi Vatika nala b. Paisuni nalla Nalla near Amodh van	River water quality is meeting the desirable Standards.	1 STP 4.7 MLD	Dec. 2021	MC Chitrakoot	under construction
14	River Newaj at Shujalpur	V		a. Jamdhad nalla Under bridge nalal	River water quality is sometimes not meeting the desirable Standards	1 STP 5.0 MLD	Dec. 2021	MC Shujalpur	Not Sanction.
15	River Simrar at Katni	V		a. Rahul Bagh nalla NKJ nalla	River water quality is meeting the desirable Standards.			MC Katni	under construction
16	River Tons at Chakghat	V		a. Khakkha nala b. Purani galla mandi nala c. Nehru smarak degree collage	River water quality is meeting the desirable Standards.			----------	------
17	River Wainganga at Chhapara near road bridge after mixing Moti & Chamaria Nala	V		a. Moti nalla b. Chamariya nalla	River water quality is meeting the	1 STP 2.5 MLD	Dec. 2021	MC	Not Sanction.

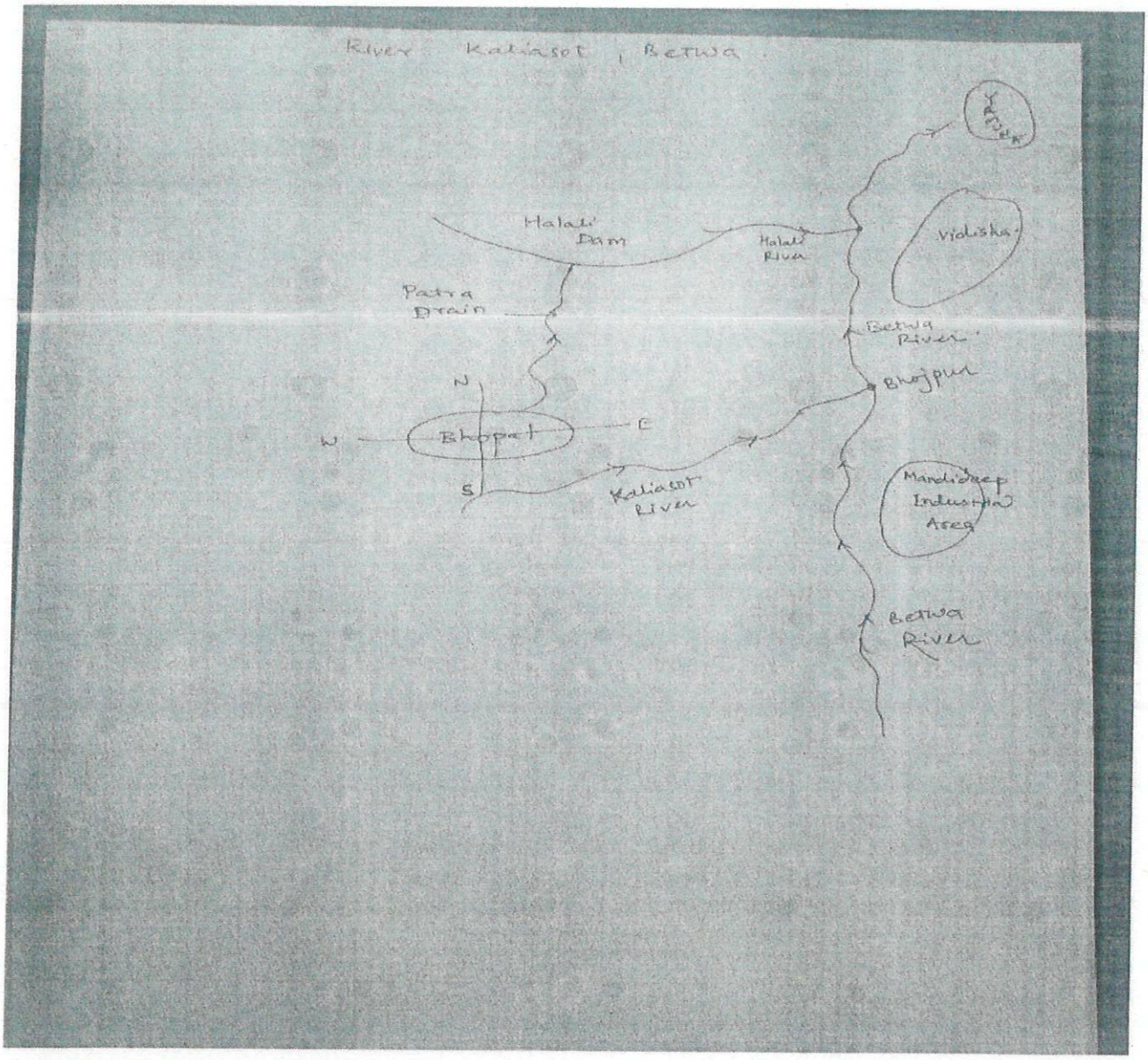
				Drain from bus stand	desirable Standards.				
18	River Sone at Bhaturagh at 200 m. Down Stream of OPM	III		a. Ghattan Nalla b. Nargadha nala c. Tanki nala d. Gaibuda nala e. Baigha nala	River water quality is meeting the desirable Standards.	1 STP 7 MLD at Dharampuri			under construction
19	River Chamla at Badnagar	V		a. Mirchi nalla b. Shivghat nalla Nooriya khal	River water quality is meeting the desirable Standards..	--			---
20	River Parvati at Pilukhedi	V		1natural nalla meet the river Parwati at down stream.	River water quality is meeting the desirable Standards..				---
21	River Chopan at Vijaypur	V		NFL vijaipur	River water quality is meeting the desirable Standards..				---
22	River Kanhan at Chhindwada district boundary	V		All nallas near the towns in catchment area became dry after travelling of some distance	River water quality is meeting the desirable Standards..				---

Line diagram River Kshipra, Khan & Chambal





Line diagram River Kaliasot & Betwa



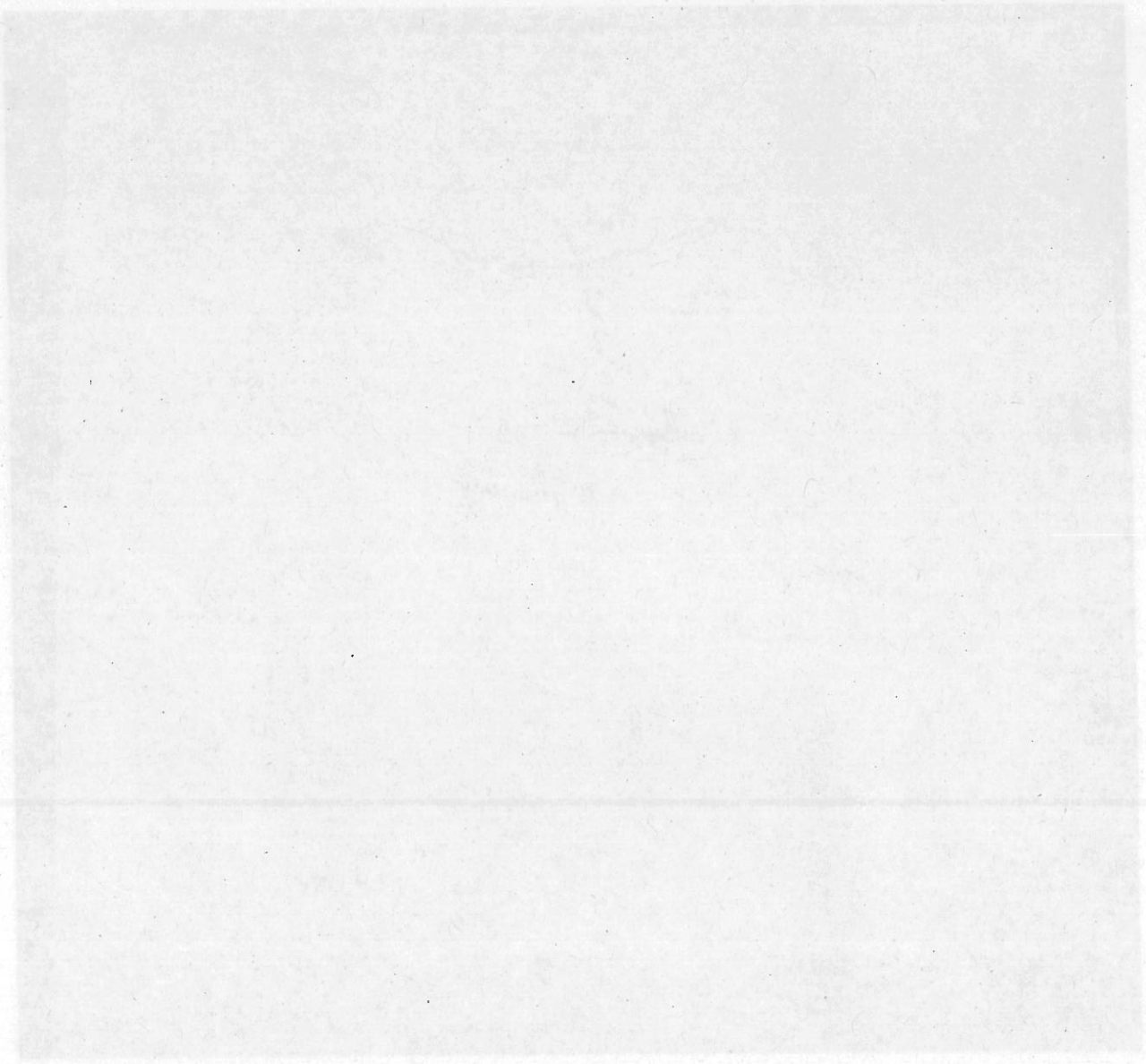
Observations & Recommendations: -

- Polluted stretch priority:

  Water quality in these stretches has improved since 2016 as:

Priority	I	II	III	IV	V	TOTAL
2016	3	1	1	3	14	22
2019*						

State is updating as data for December month was yet to be received at MPPCB.



- Most critical project for the rivers Khan (Indore and 72 Km till Triveni Sangam at Ujjain needs to be executed on top priority. The projects have been targeted to complete by December 2020 having capacity of about 77 MLD.
- For Nagda town, 16 MLD STP is required but no fund is available with the state. This is the only town which discharges its untreated sewage in Chambal river.
- Some of the rivers stretches have flow only during monsoon and remains dry for 8-9 months. The water sample of such rivers has been collected from stagnant pools and represents a different view. E.g. Kalisot River, Halali River, Khan river etc.
- Even after completion of sewerage projects, such river stretches may not come in priority V or reported unpolluted as no water flows through them. Some sampling points are also located just below the check dams and thus location of sampling points should be specified.

ANNEXURE-VII

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http://www.mowr.gov.in

DO No. Legal/OA 673/2018/NMCG/2019 (Part File) March 11, 2020

Dear Somesh,

As you would be aware, Hon'ble NGT vide its Order dated 06.12.2019 in OA No. 673 of 2018 in the matter of "News item published in the Hindu authored by Shri Jacob Koshy titled More river stretches are now critically polluted: CPCB, with Dr. Tudi Indrasena Reddy & Ors versus UoI & Ors" had directed that an institutional mechanism be evolved for monitoring compliance to its order by Chief Secretaries of all the States / UTs at State level and at the National level by the Secretary, Ministry of Jal Shakti with assistance of National Mission for Clean Ganga (NMCG) and Central Pollution Control Board (CPCB).

2. As per the Order, a meeting at the Central level is to be held with the Chief Secretaries of all States / UTs at least once a month to take stock of the progress and to plan further action. Accordingly, 2 meetings at Central level have been held at my level so far on 08.01.2020 and 19.02.2020 with the States, the minutes of which have already been circulated to the States for necessary action. Based on the discussions during the meeting held on 08.01.2020, teams comprising officials of NMCG, National River Conservation Directorate (NRCD) and CPCB have visited 5 States having large number of polluted stretches to review the pollution status (domestic and industrial), available sewage infrastructure and existing/ future gap to carry out Conditional Assessment and identify interventions required.

3. One team had undertaken a visit to Hyderabad in Telangana on 5th– 7th February 2020 to interact with various stakeholders, including representatives of local bodies and River Rejuvenation Committee (RRC) Members, on various issues relating to pollution control in the identified polluted river stretches in the State. The copy of the Visit Report of the team is enclosed for your kind perusal. The major observations and recommendations of the visit are as under:

(i) The implementation of Hon'ble NGT Orders is lagging due to lack of proper monitoring mechanism, which needs to be put in place immediately for effective implementation of the Action Plans.

(ii) Hyderabad Metro Water Supply &Sewerage Board (HMWS&SB) needs to operate all the STPs at full capacities, and if possible to overload to the extent possible. Peak pumping can be resorted during the lean period so that provisional increase in treatment capacity may reduce the treatment gap by 10-15%, thus partially fulfilling NGT direction to ensure 100% in-situ treatment by 31-03-2020.

...2/-

(iii) In-situ treatment may be taken up in nalas joining Hussain Sagar lake before letting out into the Surplus Drain to dilute the sewage in the drain so that the Amberpet STP can receive more sewage.

(iv) HMWS&SB needs to review the latest performance and ensure optimization of the existing 22 STPs located in and around River Musi.

(v) Land for the proposed STP sites may be acquired and fenced, so as to avoid delay in project execution due to land acquisition.

(vi) Action should be initiated to remove obstructions in River Musi due to the presence of weeds and silt across the cross section of the river so as to ensure smooth flow of water and avoid stagnation of water in pools.

4. I would request you to kindly direct the concerned officers to take necessary action on the points highlighted in the Visit Report, decisions taken in the 2 review meetings at the Central level, ensure submission of monthly progress report as well as compliance to the various directions of Hon'ble NGT issued vide its Order dated 06.12.2019.

With regards,

Yours sincerely,

(U P Singh)

Shri Somesh Kumar, IAS
Chief Secretary,
Government of Telangana,
Block C, 3rd Floor, Telanagana Secretariat,
Khairatabad,
Hyderabad, Telanagana.

Central Monitoring Committee Visit to Hyderabad to Assess the Polluted River Stretches in Telangana with regard to Hon`ble NGT matter in OA No. 673 of 2018

Tour Report

Honorable National Green Tribunal (NGT), Principal Bench, New Delhi vide order dated: 20th September 2018 in O.A No.673 / 2018 in the matter of news item published in the Hindu authored by Sri Jacob Koshi titled "More river stretches are now critically polluted –CPCB", the Hon'ble NGT directed the state to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes.

The CPCB has a programme to monitor the quality of rivers by measuring BOD. The CPCB considers river water fit for bathing when it meets the criteria of having Bio-chemical Oxygen Demand (BOD) less than 3.0 mg/L, Dissolved Oxygen more than 5.0 mg/L and Faecal Coliform bacteria to be less than 500 MPN/100 ml. A river stretch having BOD greater than or equal to 30 mg/L is termed as 'Priority I' polluted stretch, while that between 3.1-6 mg/L is 'Priority V'. In its 2015 Report, the CPCB had identified 302 polluted stretches on 275 rivers. The number of such stretches was found to be 351 in 2018.

The Hon'ble NGT passed further directions in the Order dated 06.12.2019 in OA No. 673 of 2018. Main directions of the order are as follows:

(i) 100% treatment of sewage may be ensured by 31.03.2020 at least to the extent of in-situ remediation.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31.03.2021.

(iii) A meeting at central level with NMCG as nodal agency must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action.

(iv) States/UT may furnish Monthly progress report to Secretary, Ministry of Jal Shakthi with a copy to CPCB.

The 1st meeting of the Central Monitoring Committee constituted by Hon'ble NGT in the matter OA No. 673 of 2018 was held on 08.01.2020 at 10.30 am in Conference Room, DoWR, RD&GR, Ministry of Jal Shakti under the chairmanship of Secretary, DoWR, RD & GR.

It was decided in the meeting that group may be formed of officials from NMCG, NRCD and CPCB for reviewing the progress of the States as per the Action Plans and visit some key & important States.

Accordingly National Mission for Clean Ganga formed team of the following officials to visit and review the progress of the Telangana state as per the Action plans:

i. Shri G. K. Murty, Team leader, Project Management Consultancy, NMCG (9560001092)
ii. Shri A. P. Singh, Deputy Secretary, NRCD (9868592828)
iii. Shri S. Jeyapaul, Scientist-D, CPCB, RD-Bangalore (Representative from CPCB)

The team visited Hyderabad, Telangana from 05.02.2020 to 07.02.2020 and reviewed the Action plan and the status of its implementation with the officials of the Government of Telangana. The team also visited the Priority I Polluted Stretches in River Musi to inspect the condition of the River and to understand the Action Plan approved by CPCB for this stretch.

1. Polluted Stretches in Telangana:

Telangana has 72 Cities and towns including Hyderabad urban Agglomeration. Hyderabad drains into River Musi and River Nakkavagu. River Miryalguda also drains into Musi while Palwancha drain into Karakavagu & Kinnersani rivers, Karimnagar, Huzurabad, Jammikunta, Parkal and Bhupallpally drain into Maner river, Mancherial, Ramagundam drain into Godavari causing pollution in the river stretches.

The projected sewage generation in 2020 and 2036, based on data provided by Telengana State Public Health Engineering Department (TSPHED) for 71 towns other than Hyderabad is about 770 MLD and

1020 MLD respectively against existing treatment capacity of 342 MLD. Thus there is a gap of 428 MLD in 2020 and 678 MLD in 2036. The state has proposal for construction of 160 STPs of about 880 MLD capacity.

The Hyderabad Metro Water Supply and Sewerage Management Board (HMWS&SB), the agency responsible for sewerage management in the city has projected a population of 1,98,48,791 in 2036 with projected sewage generation of about 2400 MLD of which 2000 MLD will be discharging to River Musi. Presently 26 STPs with total capacity of 776 MLD are installed and under operation. Thus reportedly there is a gap of about 1625 MLD.

The polluted stretches identified by CPCB in Telangana are:

RIVER	RIVER STRETCH	BOD RANGE (mg/L)	PRIORITY
Musi	Hyderabad to Nalgonda	4.0-60.0	I
Manjeera	Gowdicharla to Nakkavagu	5.0-26	II
Nakkavagu	Gandilachapet to Sevalal Thanda	26	II
Karakavagu	Along Palwancha	18	III
Maner	Warangal to Somnapalli	6-20.0	III
Godavari	Basar to Khammam	4.0-9.0	IV
Kinnersani	Along Palwancha	10	IV
Krishna	Thangadigi to Wadapally	5.0-6.0	V

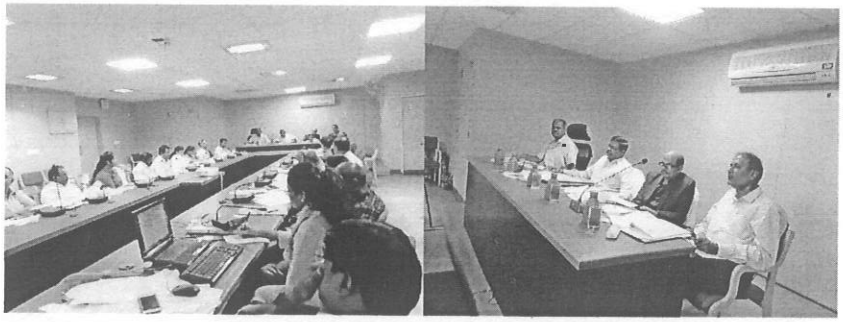
The Action Plan for Rejuvenation of River Stretches (Priority I and II) in Telangana has been approved by the CPCB on 23.03.2019 and Action Plan for Rejuvenation of River Stretches (Priority III, IV and IV) has been submitted on 20.04.2019.

2. **Deliberations during the Team Visit:**

2.1 Meetings:

Meetings were held in the Meeting Hall of the office of the Telangana State Pollution Control Board, Hyderabad on 05.02.2020 and 06.02.2020. The Minutes of this meeting are enclosed as Annexure II to this Report. The major meeting highlights were that:

1. The TSPCB installed National Water Quality Mission Points for collection of samples are located quite far. The polluted stretches have been identified based on water quality data from the upstream and downstream monitoring stations or very far placed monitoring stations. TSPCB was advised to have new stations and the interval should not be more than 10 Km in Hyderabad and 50 Km elsewhere. They were also advised that the water quality data (2016-2019) of polluted river stretch of P-I to P-V may be prioritised based on the BOD values and any change in the priority need to be updated to the CPCB.
2. Action was not started for ensuring 100% in-situ remediation. Acting on advise of visiting team, the Hyderabad Metro Water Supply and Sewerage Management Board (HMWS&SB), the nodal agency management of sewerage polluting the River Musi, discussed the remediation works with NEERI, Hyderabad and with HMDA, GHMC and Musi River Development Corporation Limited (MRDCL). NEERI has been entrusted with preparing the DPR for the same.



3. Construction of STPs is yet to start. HMWS&SB has prepared DPRs for I & D, conveyance and STPs for critical stretches. A Pre-Feasibility Report has been submitted for financial assistance to NRCD in the last week of January 2020 and would submit DPRs soon.

   TSPHED were not sure about the towns that were reported to be contributing to the polluted stretch, so an exercise to identify such towns, based on the proposed Action Plan Stretch III to Stretch V and data compiled by TSPCB was undertaken in the meeting. TSPCB has to commence the

4. The setting up of appropriate monitoring mechanism at State level to monitor the progress of the work against the Hon`ble NGT order dated 06.12.2019 was not evident during the visit.

5. Telangana has set up an SPV, Musi River Front Development Corporation (MRDCL) that acts as a nodal agency for preparation and execution of comprehensive plan for abatement of pollution of river Musi and river front development. MRDCL has cleared legacy dumps of construction and demolition garbage between Muslimganj to Salarjung Bridges in the Old City stretch of Music.

   CC TV Cameras have been installed to identify the responsible dumping waste in Musi, conducted awareness meetings vehicle owners and drivers carrying garbage, night patrolling by police along Musi river. Encroachments were removed under major bridges and Galvanised sheets erected to prevent further encroachments.

6. It was informed in the meeting that all the rivers in the state having the polluted stretches, except Krishna and Godavari, were non-perennial. The dry weather flow is only sewage. As the BOD of treated sewage after secondary and tertiary treatment will be 10 mg/l. So, bringing river water quality to bathing water standards of 3 mg/l is not feasible. It was highlighted that the same has been reported in the Action Plans.

2.1 Site Visits

1. Few I & D structures along the Musi River were inspected. While few were found to be diverting entire flow in the drains, few were found overflowing.

2. There is substantial overflow at some of the 16 I&D structures constructed on drains falling in River Musi due to wide gap between sewage generation, pumping and treatment capacity.

Overflow Observed at Bahadurpur Nala and Hussain Sagar Surplus Nala, Gol Naka

3. The pumping stations were being operated at peak capacities only during the peak hours. It was observed that if diversion weirs can be raised to impound some water that can be pumped during few lean hours and STP be overloaded without disturbing biological process, some sewage flow into the river can be reduced.

4. It was observed that pollution in River Musi is starting just downstream of Osmansagar Reservoir (at the outskirts of village Gandipet) contrary to NWMP data suggesting that there is no pollution till 10 Km downstream (up to Bapu Ghat).

5. MRCDL have put up sign boards at all bridges and important places to prevent garbage dumping. The erection work of Chain link wire fencing on either side of Musi, between Muslimjung bridge to Chadarghat bridge has started to prevent dumping C & D material into the river.

3. Conclusions and Recommendations

1. The analysis made by TSPCB during the visit and also later by the our team show that the polluted stretches can be bifurcated and also the Priority can be reclassified (Annexure I). It is suggested that this exercise be made immediately and informed to Hon'ble NGT so that the start point and end point and Priority of the Polluted Stretches can be rationalised.

2. All the concerned departments may quickly conduct field visits, physically identify the polluting drains , discharge and quality of water in therein, and compare the same with the Action plans. If required, review and submit revised Action Plans.

3. Monitoring mechanism has to be in place immediately for effective implementation of the Action Plans. Secretary, Environment, with assistance from TSPCB should proactively take up the task of monitoring the implementation. The implementation of Hon'ble NGT orders is lagging due to lack of proper monitoring mechanism.

4. Telangana State is yet to submit the performance guarantee of Rs.10 crores for ensuring the timely implementation of approved action plans for rejuvenation of 8 Nos. of identified polluted river stretches in the state.

5. Several organisations such as HMDA, GHMC, HMWS&SB, MRDCL, TSPHED, Directorate of Municipal Administration etc. are under Department of Municipal Administration & Urban Development (MAUD). It may be relevant for the Principal Secretary to form a Sub Committee in his own department to coordinate between all these organisations and hold periodical reviews to have repetition and to avoid repetition.

6. Each concerned department can have a nodal officer nominated who will be single contact point for inter-departmental coordination.

7. The HMWS&SB may operate all the STPs at full capacities and if possible to overload to the extent possible. Peak pumping can be resorted during the lean period so that provisional increase in treatment capacity may reduce the treatment gap by 10-15%, thus partially fulfilling NGT direction to ensure 100% in-situ treatment by 31-03-2020.

In-situ treatment may be taken up on nalas joining Hussain Sagar lake before letting out into the Surplus Drain. This may dilute the sewage in the drain so that the Amberpet STP can receive more sewage.

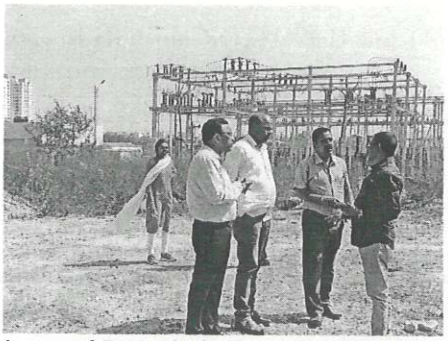
7.1. It was reported that at the directions of Hon`ble NGT, CPCB and TSPCB monitored 22 STPs located in and around River Musi during April 30, 2019 to May 10, 2019. Then it was observed that the operational capacity of these STPs only 629.17 MLD against the designed capacity of 734.35 MLD and there is a gap of 105.18 MLD. It is suggested that HMWS&SB may review the latest performance and ensure optimisation.

8. HMWS&SB was requested to have a survey of the drains verified by the departmental engineers. It was informed by the team during the meeting that Two major Nallahs one at Ganeshpuri Colony and another at Nagole bridge join the River Musi beyond confluence of effluent from Amberpet STP with Musi. Apparently these drains apparently are not included in HMWS&SB's Pre-feasibility Report submitted to NRCD.

   To avoid such omissions a walk-through by the area engineers will be useful.

9. It is necessary to acquire land at proposed STP sites to avoid delay due to land acquisition. HMWSS&SB reported that already such an exercise has started.

   In view of experience in Ganga Basin it is recommended that all acquired land may be immediately fenced.



Site Acquired Recently for Proposed STP at Kokapet

10. It may be studied if water can be stored in the upstream reservoirs that can be released in the lean seasons to maintain the e-flows.

    If maintaining storage in reservoirs for ensuring e-flow downstream is not possible due to utilisation constraints, less monsoon ingress etc., then the State Government may represent to the CPCB and Hon'ble NGT for exemption.

11. Free flow is obstructed in River Musi due to the presence of weeds and silts across the cross section of the river. The action should be initiated to remove those obstructions in order to ensure smooth flow of water and to avoid stagnation of water in pools.

12. MRDCL is erecting chain link wire fencing on either side of Musi, from Muslimjung Bridge to Chadarghat Bridge. It is suggested that such fencing may be erected on both sides of the bridges in other stretches also in the entire Musi in Hyderabad City to discourage dumping of garbage and C & D material into the River.

(S. Jeyapaul)	(A. P. Singh)	(G. K. Murty)
Scientist `D`	Additional Director	Team Leader, PMC
CPCB, RDS, Bengaluru	NRCD, New Delhi	NMCG, New Delhi

List of Polluted Stretches in Telangana

S. No.	River Name	River Stretch	Length of Stretch (in KM)	As per CPCB report		As per SPCB report		Number of Town	Sewage Generation 2035 (MLD)	Existing Sewage Treatment Plant Capacity (MLD)	GAP in Treat-ment (MLD)	Ongoing/ Proposed Capacity (MLD)
				BOD Range (mg/l)	Priority	BOD Range (mg/L)	Priority					
1	Musi	**Hyderabad to Nalgonda#**	**182**	**4-60**	**I**			**1**	**1450**	**725.8**	**724.2**	**-**
		GandipetOsmansagar Lake to BapuGhat	15			1-4	V	1	2447	737.5	1709	1694
		BapuGhat to Pillaipalli	55			4-51	I					
		Pillaipalli to Wadapally, Nalgonda	112			2-8	IV					
2	Manjeera	**Gowdicherla to Nakkavagu#**	**72**	**5-26**	**II**			**2 Villages**	**0.25**	**-**	**0.25**	**-**
	Manjeera - Nakkavagu	Singur Dam to Raipally	15	5-26	II	1-6	V	No major towns only small villages. However, existence of industries like Sugar Industry, Pharma industries may be responsible for high pollution levels				
		Ganpathy Sugars to Gowdicharla before confluence with Nakkavagu	40			2-3						
		Gowdicherla A/C with Nakkavagu	2			5-31	I	1	401	39	363	368
	Nakkavagu	**Gowdicherla toBachugudam#**	15	**5-26**	**II**			**106 villages**	**45.44**	**-**	**45.44**	**-**
3	Krishna	Thanghdigi to Wadapally	416	5-6	IV	To be Analysed		1	11.19	NIL	11.19	16.26
4	Maneru	Warangal to Sommapalli	-	6-20	III	To be Analysed		5	73.86	38.00	35.86	(28.18 Pro)
5	Godavar	Basar to Khammam	500	4-9.	IV	To be Analysed		5	86.32	24.5	61.82	77.30
6	Kinners	Along Palwancha	-	10	IV	To be Analysed		1	14.20	NIL	14.20	15.20
7	Karakay	AlongPalvancha	-	18	III							

Draft Minutes of the Review Meeting by Central Team appointed by Ministry of Jal Shakthi, GOI, on Polluted River Stretches of Telangana State held on 5th & 6th February 2020 at TSPCB, Board Office, Hyderabad

A meeting was convened with officials of TSPCB, Central Team appointed by Ministry of Jal Shakthi, stakeholder departments , State Ground water Dept, PR & RD, HMWS&SB, I&CAD, GHMC, HMDA, C&DMA, MRDCL, NEERI, Hyderabad and consultants involved in the project., on 5th & 6th of February 2020 at Meeting Hall, Telangana State Pollution Control Board, Sanathnagar, Hyderabad to review the implementation Of Action Plan of Polluted River stretches of Telangana state. The list of the participants is enclosed as Annexure I.

Sri P. Viswanatham, CEE, TSPCB, Hyderabad welcomed the Central Team appointed by Ministry of Jal Shakthi, GOI and all the stake holder departments. The CEE briefed about the 8 polluted river stretches in the State of Telangana for which action plans have to be implemented on priority basis.

At the outset Sri G.K.Murty from National Mission for Clean Ganga (NMCG) has briefed the participants about the NGT orders with regard to OA No. 673 and informed all the stake holder departments to co-ordinate for compilation of the action plan implemented by the various departments. He has reviewed the status report of action plan and discussed in detail the formats (1 to 5) to be filled and submitted to the committee by the concerned stakeholder departments.

TSPCB made a presentation briefing about the Polluted river stretches identified by CPCB in Telangana State and status of implementation of the Action Plan with regard to O.A.No.673. As per the decision taken during meeting an exercise was made to prioritise each of the polluted river stretches based on the present BOD levels.

The Central Monitoring Committee has focused on the Hon'ble NGT orders dated: 29.11.2019 which are as follows:

- 100% treatment of sewage may be ensured by 31.03.2020 at least to the extent of in-situ remediation.
- Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31.03.2021.
- A meeting at central level with NMCG as nodal agency must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action.
- Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakthi with a copy to CPCB.

HMWS&SB informed that in-situ remediation on all the drains joining the Musi River stretch may not be feasible in view of steep gradient and high velocity. The officials of GHMC has informed that GHMC has taken up few of the lakes in GHMC area to which the nalas join are

being taken up for remediation. The officials of HMWS&SB also informed that they would take up in-situ remediation of other lakes which join the Musi river.

HMWS&SB discussed the remediation works with NEERI, Hyderabad and proposed to take-up the work of in-situ remediation on the drains wherever possible and also on the drains joining some of the water bodies within GHMC area which are identified as polluted.

With regard to construction of STPs, HMWS&SB informed that the construction of STPs is being delayed for want of funds. They also informed that a letter was addressed to Govt. of India for allocation of funds (60: 40 ratio) to take up construction of STPs.

Deputy Collector, MRDCL has informed as follows:

- The Government created an SPV Musi River Front Development Corporation Limited vide G.O.Ms.No.90, MA&UD dated 25.03.2017 with senior officers of stake holder department as Directors of SPV.
- Musi river front development corporation will act as a nodal agency for preparation and execution of comprehensive plan for abatement of pollution of river Musi and river front development and will monitor, co-ordinate the activities of various departments.
- The river front development is proposed from the outfall of Osmansagar and Himayatsagar to Bapughat and downstream up to ORR-East at Gowrelli at a total length of 57.5 km.
- The project in a comprehensive way comprises of river conservation with a diversion of sewage and treatment to make the river perennial with clean water in strategic locations, river as a connector in the broadest sense, landscape beautification on the either side of the river boundary duly maintaining the ecology and hydrology of the river.
- The survey was carriedout for the entire project length of 57.5 km., from the outfall of Osmansagar and Himayatsagar to ORR in the east by using Drone Technology.
- The arrangements are also under preparation to remove the construction and demolition debris being done in the river over the years and cart way to the dump site.
- The following action has been taken up by MRDCL:
    - 3900 Cum of C & D Material/ earth was removed under the Muslimjung bridge for free flow of water during Monsoon.
    - 130 Cum of Garbage thrown into Musi at Muslim Jung Bridge and Salarjung Bridge was removed.
    - Around 9200 Cum of C & D Material was removed by HMRL for free flow of water in monsoon season
    - 16 CC TV Cameras are being installed at identified vulnerable places to identify the responsible dumping waster in Musi, to impose penalty on the guilty.
    - Awareness meeting conducted with the owners and drivers of vehicles carrying C & D Material in coordination with Police authorities.

- Sign Boards were erected at 94 places to prevent dumping of C & D waste and other material in Musi River and in order to create awareness to the public.
- Addressed the Police authorities for arranging patrolling at night time along with musi river.
- The erection work of Chain link wire fencing on either side of Musi, between Muslimjung bridge to Chadarghat bridge will commence shortly, to prevent dumping C & D material into the river.
- Encroachments removed under 1. Muslimjung bridge, 2. Salarjung bridge and 3. At Nayapool bridge and Galvalume sheets erected to prevent further encroachments.
- Sectioning of river Musi between Purana pool bridge and Chaderghat bridge was done by engaging pontoon mounted excavator and hydraulic excavators has been take up.
- Gambusia fish has been let out in stagnated waters of Musi to prevent mosquito breeding between Muslim Jung bridge and Chaderghat bridge.
- Illumination under Muslim Jung bridge has been taken up.
- Land scaping work at a stretch of 300 meters has taken near high court rubber dam.

The E-in-C of Public Health Dept., has informed that the 4 STPs at Ramagundam constructed under NRCP are not in working condition and proposals for new STPs at the same location is under consideration.

All the stake holders were requested to implement the action plan as follows:

1. Each department has to identify nodal officer and the same to be informed at the earliest.

   (Action: MA&UD, HMWS&SB, GHMC, PHED, PRED, Minor irrigation, Major Irrigation, Ground Water Dept, & MRFDCL)
2. All the concerned departments shall submit the filled up formats I to V within three days.

   (Action: MA&UD, HMWS&SB, GHMC, PHED, PRED, Minor irrigation, Major Irrigation, Ground Water Dept, & MRFDCL)
3. Monthly status reports have to be submitted by all the stake holders before 10th of every month.

   (Action: MA&UD, HMWS&SB, GHMC, PHED, PRED, Minor irrigation, Major Irrigation, Ground Water Dept, & MRFDCL)
4. Nalas joining the river stretch in River Musi have to be identified and and short term action plan to be taken-up by 31.03.2020 have to be submitted.

   (Action: HMWS&SB, GHMC, HMDA, MRFDCL & PHD)
5. The sewage flow from the nalas joining Hussain Sagar lake can be intercepted and diverted followed by in-situ treatment and let out to the Surplus Drain. This may dilute the organic content in the drain so that STP can take up more discharge.

(Action: HMDA, HMWS&SB, GHMC).

6. DPR of STPs proposed to be taken up to be submitted immediately for approval.

Action: MA&UD)

7. Identify the towns near to the polluted river stretch and action plan for setting up of STPs to be taken-up.

(Action: PHED)

8. The ground water withdrawal and usage by the industries has to be updated along with the regulations laid down by the Ground Water Department.

(Action: State Ground Water Dept.)

9. Adopting good irrigation practices / efficient irrigation methods

(Action: Irrigation Dept., Agriculture Department)

10. Information pertaining to Reuse of waste water and sludge, rain water harvesting along with the innovative methods of reuse to be identified.

(Action: Irrigation, Ground water, PHED, HMWS&SB, Industries Department).

11. River side plantation, bio diversity has to be taken-up.

(Action: MRDCL, Forest Dept, HMDA, GHMC).

12. The water quality data (2016-2019) of polluted river stretch of P-I to P-V has to be prioritised based on the BOD values and any change in the priority need to be updated to the committee.

(Action: TSPCB).

The 2-day review meeting of central monitoring committee concluded with vote of thanks.

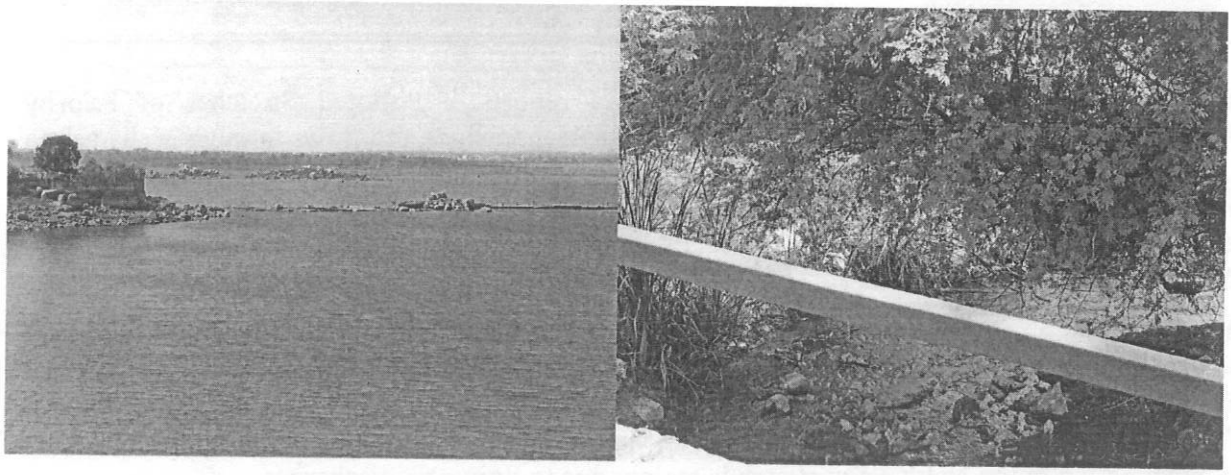
(P. Viswanatham)
Chief Environmental Engineer,
TSPCB, Hyderabad

List of Participants

1. Sri G.K. Murty, NMCG
2. Sri A.P. Singh, Additional Director, NRCD
3. Sri S. Jeyapaul, Scientist-D, CPCB, RD-Bangalore
4. Sri P. Viswanatham, CEE, TSPCB, Hyderabad
5. R. Sreedhar, E-in-C, Public Health Engineering Dept.
6. V. Mohan Kumar, (I/c) Dy. Chief Engineer, O/o Engineer-in-Chief (PHE Dept.)
7. D. Sridhar Babu, Director Projects, HMWS&SB
8. G. Raghu, Chief General Manager, HMWS&SB
9. Vasa Satyanarayana, General Manager (E), Project Division No.6, HMWS&SB
10. P. Kondanda Rami Reddy, General Manager (E), STP Div-I, HMWS&SB, Amberpet
11. K.P. Umapathy Rao, Dy. GM(E), PD-VI
12. A. Narahari, Dy. General Manager, STP Division-I, HMWS&SB
13. S. Venkat, Resident Engineer, M/s.Shah Technical Consultants Pvt. Ltd.
14. B. Sri Ram, Jr. Engineer, M/s.Shah Technical Consultants Pvt. Ltd.
15. Sri S.Bheem Prasad, S.E., GHMC
16. J. Krishna Rao, Executive Engineer (C), HMDA
17. Sk. Narul Ahamad, Executive Engineer, Musi River Front Dev. Corpn. Ltd.
18. S. Malathi, Deputy Collector, MRDCL
19. P.V. Nagender, Dy. Chief Engineer-I, Minor Irrigation, I&CAD Dept.
20. Dr. Shaik Basha, Senior Principal Scientist & Head, CSIR-NEERI, Hyderabad
21. Smt. Ramya Sanam, Senior Scientist, CSIR-NEERI, Hyderabad
22. N. Vanisri, Jt. Director, O/o C&DMA
23. N. Vishal Raj, Jr. Assistant, CDMA
24. Dr. G. Venkaesham, Sanitarian Specialist, O/o C&DMA
25. J. Prabhavathy, Dy. General Manager, TSIIC Ltd.
26. Sri Ashish Chaudhary, Head, Sustainability, M/s.Cone carbon X Solutions Pvt. Ltd.,
27. Sri V. Vamshi Krishna, Core Carbonx solutionx Pvt. Ltd.
28. Sri K. Laxma, Jt. Director, Ground Water Dept., Hyderabad
29. S. Dilip Kumar, Director, SSBM (G), O/o Commissioner, PR & RD, Hyderabad
30. B. Sravya Reddy, SLWM Consultant, SSBM(G), O/o. CPP & RD, Hyderabad
31. Sri C.Y. Nagesh, JCEE, TSPCB, Hyderabad
32. Dr. M.S. Satyanarayana Rao, JCES(FAC), TSPCB, Hyderabad
33. Sri K. Srinivas Reddy, SEE, TSPCB, Hyderabad
34. Sri D. Narender, SEE, TSPCB, Hyderabad
35. Ms. J. Sumathi, Environmental Scientist, TSPCB, Hyderabad
36. Smt. G. Vidyullata, Asst. Environmental Scientist, TSPCB, RO, Hyderabad
37. Smt. V. Aruna Devi, Asst. Environmental Scientist, TSPCB, Hyderabad

Summary of Action Plans of Telangana State

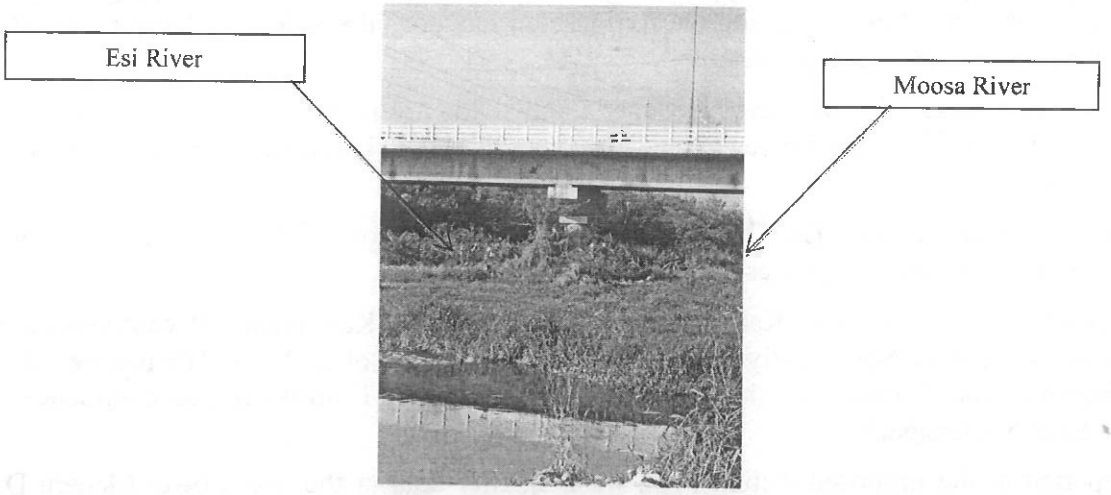
1.1 Polluted Stretch Priority I There is only 1 stretch in Telangana identified as Priority I, which is on River Musi from Hyderabad to Nalgonda. The river originates from Anantagiri Hills near Vikarabad District and joins River Krishna at Wadapally in Nalgonda District. It has an aggregate length of 250 kms and it passes through Hyderabad city. Two reservoirs Osman Sagar and HimayatSagar were built, respectively, to prevent the city from flooding. The polluted stretch in River Musi start after Gandipet Village, about 2-3 km downstream of Osmansagar Lake on the outskirts of Hyderabad.



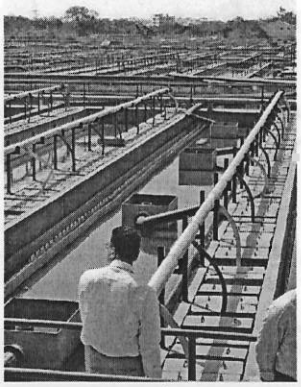
Osmansagar Reservoir

Sewage Flow 2 Km D/S of Osmansagar

The Musi River gets its names from two streams namely Moosa and Esi that join about 10 Km downstream of Osmansagar near Tipu Khan Bridge. Drains carrying sewage from various urban areas join the River from the North and South of the River adding pollution to the river.



The Action Plan for rejuvenation of Musi River has reported that 726 MLD of sewage is being treated in 22 STPs. The Action Plan has estimated total sewage generation to be around 1625 MLD by the year 2029. Therefore, a gap of approximately 900 MLD by the year 2029 has been estimated in the Action Plan. In the Action Plan 20 new STPs with 885 MLD (1 STP with 15 MLD capacity proposed at Miryalaguda – not in Hyderabad) have been proposed.



UASB Reactor in 339 MLD STP, Amberpet

1.2 Polluted Stretch Priority II The Action Plan reports 2 Polluted Stretches of Priority II.Manjeera River originates from Balaghat Hills in Maharashtra and flows through Maharashtra and Karnataka before entering Telangana in Medak District and outfalls into Godavari River at Basar near Nizamabad. The Priority II Poluted Stretch in River Manjeera is from Gowdicharla to Nakkavagu, which are the upstream and downstream points of the confluence of the rivers Manjeera and Nakkavagu.

Nakkavagu is a tributary of the River Manjeera, which flows through the Medchal-Malkajgiri, Rangareddyand Sangareddy Districts of Telangana, i.e., basically North-west and West areas of Greater Hyderabad. The Action Plan narrates that the polluted stretch of Nakkavagu starts from Bachugudem to the confluence point of the Manjeera at Gowdicherla. The major source of contamination in the Nakkavagu stretch is mainly due to domestic discharges.

The Action Plan details that sewage discharge from the urban agglomeration of Patancheru, R.C.Purammandals of Sangareddy District and the villages of river Nakkavagu isultimately joining the river Manjeera at Gaudicherla Village (downstream of Manjeeraand Nakkavagu confluence).

The impact of pollution on Manjeera river stretch is thenet result of sewage generated in Nakkavagu stream. For this reason the Action Plan has considered River Manjeera and River Nakkavagu Stretches as single stretch.

The Industrial areas of Patancheru, Jeedimetla and IDPL are in the cachment of this river but they are having CETPs that convey treated effluent across the Hyderabad City to Amberpet STP in Musi Catchment.

1.3 Polluted Stretch Priority III, IV & V: 2 Polluted Stretches of Priority III, one each in River Maner and River Karakavagu were identified.

ManeruRiveroriginates from Kakur and flows east towards Karnagunta. It confluences with Godavari River after Somanpally village, covering a distance of 232 km. The polluted stretch considered is from Karimnagar, downstream of Lower Maneru Dam (LMD) till confluence with Godavari at Somanapally.

As reported in the proposed Action Plan, water quality data at the site, Lower Maneru Dam, Karimnagar is available for September 2018-October 2018 months,as the sampling station does not have water flow during the remaining period. DO value observed to be 7.4 mg/l and BOD level is 4 mg/l.The river water quality data at Somanpally on Maneru river stretch showed the annual average DO values varied from 4.2 to 5.7 mg/l. The annual average data for BOD ranged from 3-7 mg/l. Monthly data shows that at Somanpally site during November & December 2016, the BOD levels were observed to be 20 mg/l and 8 mg/l, respectively.

There is only 1 town Karimnagar at the start of the Stretch and this town has an STP of 38 MLD capacity against present estimated sewage generation of 34.71 MLD (Source: TSPHED). However 4 STPs have been proposed at Huzurabad (about 20 Km from the river), Jamnikunta (about 8 Km from the river), Parkal (about 28 Km from the river) and Bhupalpally (about 18 Km from the river). Apart from these, 16 STP, based on WSP technology, have been proposed in rural/semi urban areasof total capacity 13.50 MLD (each ranging from 0.5 to 3.0 MLD) - 10 WSPsto be constructed in under Priority I (within 5 Km of the river), 4 WSPs under Priority II (between 5-10 Km of the river) and 2 WSPs in priority III (between 10-15 Km of the river) have been proposed.

Karkavagu - Kinnersani The other polluted Stretch in Priority III is in River Karakavagu. Karakavagu is a tributary of the River Kinnerasani, which in turn is a tributary of the river Godavari and runs about 18 Km through the Palvanchamandal before joining the main stream of Kinnerasani river. The Kothagudem Thermal Power Station (KTPS) is the major industry located on the bank of Karakavagu with an installed capacity of 1720 MW. The available points are only on River Kinnersani – (i) after confluence of KTPS ash ponds, (ii) upstream of Karkkavagu and (iii) downstream of Karkkavagu. The last 2 points are in Kinnersani before and after confluence of Karkavagu.

For treatment of domestic sewage in Palavancha, a DPR for 4 STPs of 15.20 MLD capacity (9.2 MLD, 2 MLD, 3 MLD and 1 MLD) is under preparation to cater a projected population 0f 1.30 lakhs in the year 2036. Apart from this the Action Plan proposes 16 STP, based on WSP technology, within 15 km from Karakavagu and Kinnersani river in rural/semi urban areasof total capacity13.50 MLD (each ranging from 0.25 to 1.0 MLD) - 13WSPs under Priority I, 2WSPs under Priority II and1WSPs in priority III have been proposed.

Godavari River The river stretch from Basar to Khammam has been identified as Polluted Stretch of Priority IV. Khammam is 80 Km from the River Godavari. The Action Plan has considered the Godavari river stretch from Basar to Badhrachalam city. TSPCB has 17 Water Quality monitoring Stations in this stretch of which 2 are away from the River. There is no Monitoring Station Between Basar (at the start of the Stretch) till Mancherial which is nearly 200 Km from Basar.

It has been reported in the Action Plan that the Stretch has 2 thermal power stations, 1 paper mill and 1 heavy water plant in the area. All the industries together are generating 251.70 MLD of effluents. The quality of all the ETP outlets are within the CPCB stipulated standards.

The Action Plan has proposed a requirement of 19 STPs in the stretch of which 6 STPs are proposed as Priority I and 1 STP under Priority II. Upgradation of 3 existing STPs have been proposed however the same are not being operated now.

River Krishna: The river stretch from Thangadi to Wadapally on River Krishna has been identified as Polluted Stretch of Priority V. The stretch is 416 Km and covers from entry of the river into Telangana till the confluence of River Musi with River Krishna at Wadapally.

As per the Action Plan he stretch has two major waste water generating industries M/s Suryateja Power Projects Pvt. Ltd. (SPPPL) and M/s. Allied Blenders and Distilleries Pvt. Ltd. (ADDPL) .SPPL has settling tanks for treating the liquid effluent of quantity of 288 KLDis reused with no discharge into river Krishna. ADDPLis a ZLD industry. The units also have ETP for treating the utility effluents of 1149 KLD and the treated effluent is being used for irrigation and plantation thus, there is no discharge into river Krishna. It was found that the treated effluent quality is meeting the industrial standards for effluents stipulated by TSPCB.

9 STPs OF 70 MLD capacity have been proposed in this stretch of which 2 are in Priority I, 4 in Priority II and 2 in Priority III. There is only 1 town, Gadwal (7.5 Km from river bank), within 15 Km of the river where STP has been proposed under Priority II.

Assessment of polluted river stretches in Haryana - Tour Report

A. Introduction

1. The National Green Tribunal, Principal Bench at New Delhi, vide order dated 6th December, 2019 in OA No.673/2018 in the matter of News item published in 'The Hindu' authored by Shri Jacob Koshy titled 'More river stretches are now critically polluted: CPCB' has given certain directions as under:-

(i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28th August, 2019 in OA No.593/2017 by 31st March, 2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide o4rder dated 22nd August, 2019 in the case of river Ganga i.e. Rs.5 lakhs per month per drain, for default in in-situ remediation and Rs.5 lakhs per STP for default in commencement of setting up of the STP.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the order dated 8th April, 2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22nd August, 2019 in the case of river Ganga i.e. Rs.10 lakhs per month per STP.

(iii) We further direct that an institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

(iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs atleast once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

(v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

(vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

(vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

(viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

(ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the action plans prepared by the States which may start forthwith, if not already started.

(x) Rivers which have been identified as clean may be maintained.

2. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 27th February, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. However, representatives from CPCB did not attended the meeting.For the State of Haryana, composition of the team was as below:-

(i) Dr. Pravin Kumar, Director Technical, NMCG
(ii) Shri S. K. Srivastava, Additional Director, NRCD
(iii) Shri Vivek Raj, Scientist C, NMCG

3. The present report provide a summary of the field visit and discussion undertaken during the visit.

B. Background:

4. Out of the identified 351 polluted river stretched reported, 2 such stretches are reported in Haryana and these 2 stretches are falling under Priority – I. To look into the issue, the above team visited Haryana during 06th March, 2020 to ascertain the ground reality and to interact with the stakeholders mainly representatives of local bodies (Urban Local Bodies/Municipal Councils/Nagar Panchayat) responsible for sewerage infrastructure to be/being created for the said polluted river stretches.

Table 1: Polluted River Stretches in Haryana:

S.No.	Name of Polluted Stretches with Pollution Categorization	No. of Stretches	Brief details (Name of river/stretch)
1.	No. of Polluted Stretches in Category-I	2	1. River Yamuna 2. River Ghaggar

A meeting with the various stakeholders (Urban Local Bodies/Nagar Panchayat) was held under chairmanship of Member Secretary, HSPCB on 06th March 2020 in the Member Secretary office of Haryana State Pollution Control Board. The meeting was also attended by the officials from NMCG, NRCD, HSPCB, HUDA, ULB and Municipal Councils. During the meeting, Member Secretary of HSPCB made a brief presentation highlighting the major drains as source of pollution, total sewage generation, treatment capacity generated- its GAP, under construction & new proposed and Industrial effluent management. Under Yamuna and Ghaggar Action Plan, all under-construction STPs will be completed by the year end of 2021 and the proposed capacity will be completed by the year end of 2025. HSPSC has designated nodal departments for every drain and issued direction for taking the task of sewage treatment using in-situ remediation. Further, during the meeting all stakeholders were requested to provide the latest status on the implementation of Action Plan approved by the CPCB.

As per the directions of NGT and also works assigned to the teams, discussions with the respective local bodies were focused on assessment of sewerage infrastructure (existing/futuristic) vis-à-vis the action plans submitted by Haryana Pollution Control Board (HSPCB) to the Central Pollution Control Board (CPCB). It was informed that action plans for polluted river stretches under Priority-I (2 Nos.) were approved by CPCB in May/June, 2019, which are now in different stages of implementation.

Stretch wise details of Priority I are given at **Annexure-I**, which includes information on towns/villages located thereon, sewage generation, treatment available and the gap, proposed treatment, industrial activities contributing to pollution in the said stretch, and the present implementation status vis-à-vis the directions of NGT.

5. The status report of Yamuna and Ghaggar Action Plan received from Haryana Government is enclosed at **Annexure-II & III.**

6. The major towns falling in any of the polluted river stretches in Ghaggar, their sewage generation, treatment capacity installed and gap assessment is given below:

S.No.	Major Towns	Sewage Generation (MLD)	Existing Capacity (MLD)	Gap (MLD)	Under Construction (MLD)	Proposed STP (MLD)
1	Ambala	62.3	46.5	15.8	29.5	21
2	Fatehabad	23.9	44.5	0	8	0
3	Hisar	39.2	78	0	8	20
4	Jind	34	51.75	0	0	5
5	Kaithal	28.7	56	0	0	0
6	Kurukshetra	29.4	59.5	0	0	0
7	Panchkula	33	90.75	0	3.5	8
8	Sirsa	46.4	84.5	0	0	7.5
Total		**296.9**	**511.5**	**15.8**	**49**	**61.5**

7. The major towns falling in any of the polluted river stretches in Yamuna, their sewage generation, treatment capacity installed and GAP assessment is given below:

S.No.	Major Towns	Sewage Generation (MLD)	Existing Capacity (MLD)	gap (MLD)	Under Construction (MLD)	Proposed STP (MLD)
1	Yamuna Nagar	47.3	95.5	0	0	0
2	Karnal	51.3	90	0.8	80.5	0
3	Panipat	83.9	125.8	0.3	0	0
4	Sonipat	51.3	85.3	0	0	18
5	Rohtak	69.1	106	0	37	10
6	Jhajjar	34.5	76.2	0.1	0	0
7	Gurugram	448.5	392.5	0	16	65
8	Mewat	9.1	13.1	0	0	0
9	Faridabad	210	140	70	17.5	210
10	Palwal	27.7	25.5	8.7	27.5	0
11	Ladwa - Kurukshetra	0	7.0	0	0	0
Total		**1032.7**	**1157**	**79.9**	**178.5**	**303**

7. Observations and recommendations

(a) The commencement of the setting of Sewage Treatment Plant (STPs) for the identified gap is already in process. Thus the direction regarding penalty of non-compliance of in-situ bioremediation work may not apply for these stretches. However, HSPCB already issued direction to nodal agency for taking the task of sewage treatment using in-situ remediation also which is a welcome step.

(b) The Ghaggar river right from its starting point of entry into Haryana, Punjab and Union Territory receives large quantity of sewage from the states of Haryana, Punjab and Union Territory as a result gets polluted with the domestic sewage with high BOD despite of the availability of sufficient treatment facility in above mentioned states.

(c) In Yamuna basin, sewage generation of 1032.7 MLD against the existing sewage treatment capacity of 1157 MLD. There is minor gap < 1.0 MLD in Karnal, Panipat and Jhajjar towns. However, Faridabad and Palwal are major gap area (70 MLD IN Faridabad and 8.7 MLD Palwal). However, the drain water quality does not reflect/endorse the same. Despite having availability of almost 90% sewage treatment capacity in the Yamuna basin in Haryana. The water quality of drains is still poor which shows either STP are not operating properly and sewage is directly bypass into the drain.

(d) In Ghaggar basin, sewage generation is 296.9 MLD against the existing sewage treatment capacity 511.5 MLD it appear that STP capacities are sufficient. Only exception was in Ambala town, where 15.8 MLD STP capacity gap was found (sewage generation is 62.3 MLD against the existing STP capacity of 46.5 MLD in Ambala town).However 29.5 MLD STP is under construction in Ambala town. The above observations shows that there is sufficient capacity of the sewage treatment in Ghaggar basin. However, the drain water quality does not reflect/endorse the same. Despite having availability of almost 90% sewage treatment capacity in the Ghaggar basin in Punjab, Haryana and Union Territory (Chandigarh). The water quality of drains is still poor which shows either STP are not operating properly and sewage is directly bypass into the drain.

(e) Director (T-III), NMCG suggested HSPCB to regularly monitor the utilization capacity, treatment efficiency and compliance status of all existing STPs by monitoring flow and water quality of influent and effluent of respective STPs on daily basis. Member Secretary HSPCB acknowledge the fact that the capacity utilization of treatment plant is equally important to the compliance of the STP and also ensure that in subsequent report the actual sewage treatment will also be reported.

(f) The HSPCB has closed 17 water polluting industries falling in catchment of river Ghaggar and initiated prosecution action against 39 units. Further Environment Compensation of Rs. **76,01,563/-** has been imposed against the violating units in the catchment of river Ghaggar by HSPCB, out of which Rs. **29,42,500/-** has been collected.

(g) The HSPCB has closed 334 water polluting industries falling in catchment of river Yamuna and initiated prosecution action against 174 units. Further Environment Compensation of Rs. **2,25,14,813/-** has been imposed against the violating units in the catchment of river Yamuna by HSPCB, out of which Rs. **75,47,500/-** has been collected.

(h) The HSPCB has been regularly identifying illegal industries operating without consent of the board. The closure orders are issued against such illegal industries and electric connection are disconnected.

(i) CETP Panipat has already been upgraded and now it is proposed that the treated effluent will be utilized for irrigation purpose so-that not even treated should go into the drain. Policy for reuse of treated sewage water is formulated and action plan for utilization of treated wastewater from STPs has been prepared. It has been proposed to utilize 80% of treated wastewater by 2030.

(Dr. Pravin Kumar)	**(Vivek Raj)**	**(S. K. Srivastava)**
NMCG	**NMCG**	**NRCD**

Performa of NMCG (OA No. 673 of 2018)- GHAGGAR ACTION PLAN

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
Ghaggar	**Surajpur, Panchkula to Ottu Weir, Sirsa** **<u>Major Drain outfalling in River Ghaggar</u>** 1. Sukhana Nallah, Parwanoo Barrier, Himachal Pradesh 2. Jattan walla Nallah 3. Discahrge of STP, Sec-28, Panchkula at Vill- Kakrali, Punjab. 4. MDC Drain of Panchkula entering to Sukhna Nallah	I	**11 Major drains** • Total Sewage Generation**:- 296.9** • Total Sewage Treatment Plant**:- 511.5 MLD** • GAP in Treatment:- **15.8 MLD** in Ambala town only. • No. of under construction STPs**- 11** • Capacity of under construction STPs **- 49 MLD**	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation.	Nodal Departments for every drain designated and directions issued for taking up the task.	1. Public Health Engineering Department. 2. Urban Local Bodies Department. 3. Irrigation Department. 4. Town and Country Planning. 5. Haryana Shehri Vikas Pradhikaran(HSVP). 6. HSIIDC Department. 7. Forest Department. 8. Development of Panchayat Department. 9. Health Department.	
				Commencement of setting up STPs by 31st March, 2020.	All the Under construction STPs will be completed by **31.12.2020.** Proposed STPs will be completed by **- 30.06.2025**		
				Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	• Total towns in catchment of River Ghaggar- **27** • Sewerage already laid		

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
	5. Sukhna choe at Vill- Bhankarpur, Punjab 6. Ambala Drain 7. Ghail drain at Rampur, Ambala 8. Markanda River at Vill. Dhandhota 9. Sagar Para Drain at Vill. Sagra 10. Kaithal drain at Vill. Khanauri 11. Discharge of M.C. Ratia (Fatehabad) **<u>Major towns</u>** 1. Naraingarh 2. Ambala 3. Ratia 4. Tohana		• No. of STPs proposed **- 10** • Capacity of STPs proposed- **61.5 MLD**		in 2 towns • Sewer lines were proposed to be laid in 25 Towns in Ghaggar Action Plan. • Laying of Sewerage work completed in 11 towns • Work is under process at 14 locations and will be completed by Dec., 2020. • Total length of sewer line to be laid- **478.8 Km** • Length laid so far- **234.6** Km.	10. Department of Industrial and Commerce. 11. Mines and Geology Departmet.	

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
	5. Jhakal Mandi 6. Fatehabad 7. Hisar 8. Narnaund 9. Narwana 10. Uchana 11. Jind 12. Safidon 13. Cheeka 14. Kaithal 15. Kalayat 16. Pundri 17. Shahbad 18. Pehowa 19. Thanesar 20. Kalka 21. Pinjore 22. Panchkula 23. Mandi Dabwali 24. Kalanwali 25. Sirsa						
				Completion of all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.	All the under construction STPs will be completed by 31.12.2020.		
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.	Regular monitoring is being done by Chief Secretary and MS, HSPCB is made Nodal for reviewing the status of Action Plans of polluted river stretches		
				Monthly progress report to be furnished by the States to Secretary, MoJS with	Monthly progress report submitted on		

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
	26. Rania 27. Ellenabad **<u>Industrial Cluster</u>** 1. HSIIDC Industrial Area, Barwala. 2. Industrial Area, Saha. 3. Industrial Area, Ambala Cantt. 4. Industrial Area, Jind. **262 Industries**			a copy to CPCB.	07.02.2020 by HSPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.	All Departments are asked to look into the matter		
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.	Performance guarantee is being taken from contractor by the executing departments.		

Performa of NMCG (OA No. 673 of 2018)- YAMUNA ACTION PLAN

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
Yamuna	Dhanura Escape to Palla, Sonepat and Badarpur Border to Gaunchi Drain. **<u>Major Drain outfalling in River Yamuna</u>** 1. Dhanura Escape (Ditch Drain) 2. Drain No.2 3. Drain No.6 4. Mungeshpur 5. KCB Drain 6. Drain No.8 7. Leg I 8. Leg II 9. Leg III 10. Budhiya Nalah 11. Guanchi **<u>Major towns</u>** 1. Jagadhri 2. Yamunanagar ar	I	**11 Major drains** • Total Sewage Generation:- **1032.7** • Total Sewage Treatment Plant:- 1157.2 MLD • **GAP in Treatment:-** 79.9 MLD gap in treatment in towns i.e. Faridabad (70 MLD), Beri (0.1 MLD), Indri(0.8), Palwal(8.7) and Samalkha (0.3 MLD).	100% sewage treatment by 31st March, 2020 at least to the extent of in-situ remediation. Commencement of setting up STPs by 31st March, 2020. Connecting all the drains and other sources of generation of sewage to the STPs by 31st March, 2020.	Directions issued to concerned departments for taking up the task. All the Under construction STPs will be completed by **31.07.2021** Proposed STPs will be completed by **31.12.2023** • Total towns in catchment of River Yamuna- **34.** • Sewerage is fully laid in 11 towns	1. Public Health Engineering Department. 2. Urban Local Bodies Department. 3. Irrigation Department. 4. Town and Country Planning. 5. Haryana Shehri Vikas Pradhikaran(HSVP). 6. HSIIDC Department. 7. Gurugram Metropolitan Development Authority. 8. Forest Department. 9. Development of Panchayat Department.	

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
	3. Radaur 4. Chhachhrauli 5. Ladwa 6. Nilokheri 7. Taraori 8. Indri 9. Karnal 10. Nissing 11. Gharaunda 12. Panipat 13. Samalkha 14. Gohana 15. Ganaur 16. Sonipat 17. Kharkhoda 18. Maham 19. Rohtak 20. Kalanaur 21. Sampla 22. Beri 23. Bahadurgarh 24. Jhajjar 25. Taoru 26. Gurugram 27. Nuh 28. Ferozepur jhirka		• No. of under construction STPs- **17** • Capacity of under construction STPs- **176 MLD** • No. of STPs proposed - **11** • Capacity of STPs proposed **- 303 MLD**		• Sewer lines are being laid in 23 Towns – Work will be completed by 31.12.2020 except in Beri and Panipat where it will be completed by 31.12.2021. • Total length of sewer line to be laid - **1516 Km** • Length laid so far- **832** Km	10. Health Department. 11. Department of Industries and Commerce.	
				Completion of all steps of action plans including	All the under construction STPs will be		

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
	29. Punahana 30. Faridabad 31. Palwal 32. Hathin 33. Hassan Pur 34. Hodal **<u>Industrial Cluster</u>** 1. IMT, Manesar, Gurugram. 2. Sector-37, Gurugram. 3. HSIIDC Kutana, Rohtak. 4. IMT, Rohtak. 5. Industrial Area(HSIIDC, Bahadurgarh) 6. Faridabad District Ballabgarh Town Electroplating Zone, Sec-58.			completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the NGT order dated 8th April, 2019.	completed and commissioned by 31.12.2020 except at Faridabad which will be completed by 31.07.2021.		
				Institutional mechanism to be evolved for ensuring compliance of above directions. For this purpose, monitoring to be done by Chief Secretaries of the States/UTs at State/UT level, and by Secretary, MoJS at national level with the assistance of NMCG and CPCB.	Regular monitoring is being done by Chief Secretary and MS, HSPCB is made Nodal for reviewing the status of Action Plans of polluted river stretches.		
				Monthly progress report to be furnished by the	Monthly progress report		

River	Stretch (Origin/Basin/ Sub-basin/Outfall) Tributaries Major towns/Industrial Clusters	Priority/ Present water quality (Monitoring during Jan-Dec, 2019)	Major polluting sources/ Drains/ Industrial clusters (IC) Sewage generation/ gap/treatment proposed	Directions of NGT	Present status of implementation	State Govt./Agency responsible	Remarks
	7. HSIIDC, IMT, Sec-66-69, Faridabad 8. Sector-29, Part-I, Panipat. 9. Sector-29, Part-II, Panipat. 10. Industrial Area Barhi, Sonepat. 11. Industrial Area Rai, Sonepat. 12. Industrial Area Kundlil, Sonepat. 13. Industrial Area Murthal, Sonepat. **2597 Industries**			States to Secretary, MoJS with a copy to CPCB.	submitted on 07.02.2020 by HSPCB.		
				Procedure for DPRs/tender process to be shortened and if found viable, business model to be developed at central/state level.	All Departments are asked to look into the matter.		
				Wherever work is awarded to any contractor, performance guarantee to be taken in above terms.	Performance guarantee is being taken from contractor by the executing departments.		

Status Report- Ghaggar Action Plan

1. **Initiating action for setting up STPs to prevent flow into storm water drains**

New STPs Under construction (Annexure-1 A)

17 new STPs were proposed to be constructed in the catchment of river Ghaggar with treatment capacity of 123 MLD. Out of which 6 STPs have been constructed with treatment capacity of 74 MLD. Work is in progress at remaining 11 STPs with treatment capacity of 49 MLD.

Proposal status of STPs. (Annexure-1 B)

No. of STPs proposed - 10

Capacity of STPs proposed - 61.5 MLD

2. **Removal of the deficiencies in the existing STPs/ upgradation of STPs**

2.1 Existing STPs and compliance status (Annexure-2 A)

There are total 59 STPs installed in the catchment of river Ghaggar with the capacity of 511.5 MLD. As per latest status 1 STP (10 MLD by HUDA at Jind) out of total 59 is not meeting the prescribed parameters.

The STP wise compliance status and action taken report against non complying STPs is enclosed as **Annexure- 2A**.

Department	**Total No. Of STPs**	**Capacity (MLD)**	**No. of STP Non-Complying**	**Capacity (MLD) of non complying STPs**
PHED	49	371	0	0
HSVP	9	131.5	1	1
Garrison	1	9	0	0
Total	**59**	**511.5**	**1**	**1**

2.2 Estimation of sewage

- Total towns in catchment of River Ghaggar – 27
- Quantum of sewage generation – 296.9 MLD
- Existing Treatment capacity – 511.5 MLD
- Capacity of under construction STPs (in progress) -49 MLD
- Capacity of STPs proposed- 61.5 MLD
- There is gap in treatment capacity of 15.8 MLD in Ambala only. Details of towns wise sewage generation, treatment capacity and Gaps are attached as **Annexure-2 B.**

2.3 Upgradation of STPs. (Annexure-2 C)

- Number of STPs under upgradation -32
- Capacity of STPs under upgradation -182.5 MLD

3. Setting up/ up-gradation of CETPs for control of industrial pollution in the drains.

Existing CETPs (Annexure-3 A)

- No. of existing CETPs – 4
- Capacity – 6.1 MLD

  Out of total 4 CETPs, 2 are non complying and prosecution action has been initiated. The details are given in **Annexure-3A**.

Under proposal CETPs (Annexure-3 B)

- No. of CETPs proposed – 2
- Capacity -3 MLD

4. **Septage management policy for safe disposal of septage generated in unsewered areas.**

- All towns to introduce a policy and framework in the lines of Gurugram.
- MCG has started the task of septage management.

5. **Installation and maintenance of Online Monitoring System for STPs and CETPs.**

OMD in STPs

Out of total 59 STPs located in the catchment of River Ghaggar, 53 STPs have installed online monitoring devices and 50 are connected with HSPCB server.

Sr. No.	**Departments**	**Total STPs**	**Installed as per online status**	**No. of STPs Connected to HSPCB server**
1.	PHED	49	46	45
2.	HSVP	9	7	5
3.	Garrison	1	0	0
	Total	**59**	**53**	**50**

OMD in CETPs

4 CETPs are located in the catchment of River Ghaggar, and all 4 CETPs are connected with HSPCB server.

Sr. No.	Departments	Total CETPs	Installed as per online status	No. of CETPs Connected to HSPCB server
1.	HSIIDC	4	4	4
	Total	**4**	**4**	**4**

6. Status of laying of sewer network/ connectivity as directed by Hon'ble Tribunal. (Annexure-4)

Total towns in catchment of River Ghaggar- **27**

Sewerage already laid in 2 towns

Sewer lines were proposed to be laid in 25 Towns in Ghaggar Action Plan.

Laying of Sewerage work completed in 11 towns

Work is under process at 14 locations and will be completed by Dec., 2020.

Total length of sewer line to be laid- **478.8 Km**

Length laid so far- **234.6** Km.

7. Interception of sewages points (Annexure-5)

183 MLD of effluent was proposed to be tapped/ diverted at 92 locations. Out of which 0.4 MLD effluent has been diverted at 1 location, so far.

Status Report- Yamuna Action Plan

1. Initiating action for setting up STPs to prevent flow into storm water drains.

1.1 New STPs Under construction (Annexure-1 A)

No. of under construction STPs - 22
Capacity of under construction STPs -226 MLD
Progress status
Work completed - 5 (50 MLD)
Work in progress - 17

1.2 Proposal status of STPs. (Annexure-1 B)

No. of STPs proposed - 11
Capacity of STPs proposed - 303 MLD

2. Removal of the deficiencies in the existing STPs/ upgradation of STPs :

2.1 Existing STPs and compliance status (Annexure-2 A)

3STPs of PHED,4 STPs of ULBD and 1 STP of GMDA (total=8) are non-complying.

Department	Total No. Of STPs	Capacity	No. of STP Non-Complying	Capacity
PHED	43	457.9	3	68.5
HSVP	5	58.3	0	0
ULBD	8	253	4	170
GMDA	5	388	1	68
Total	**61**	**1157.2**	**8**	**306.5**

2.2 Estimation of sewage

- Total towns in catchment of River Yamuna – 34
- Quantum of sewage generation - 1032.7 MLD
- Existing Treatment capacity – 1157.2 MLD
- Capacity of under construction STPs in progress-176 MLD
- Capacity of STPs proposed- 303 MLD
- There is gap in treatment capacity of 79.9 MLD in Haryana i.e. Faridabad (70 MLD), Beri (0.1 MLD), Indri(0.8), Palwal(8.7) and Samalkha (0.3 MLD). Details of townwise sewage generation, treatment capacity and gaps are attached as **Annexure-2 B.**

2.3 Upgradation of STPs (Annexure-2 C)

Number of STPs to be upgraded -9
Capacity of STPs to be upgraded -70.5 MLD

Progress status for upgradation.

- Work completed - 3
- Work in progress - 6

3. **<u>Appointment of Single Supervisory Authority for monitoring and implementation of the STPs.</u>**
   ACS (PHED) has already been appointed as Single Supervisory Authority for STPs and CETPs who is convening regular meetings with all stakeholder departments for monitoring the progress of implementation of the plans.
4. **<u>Formulation of Standard Operating Procedure (SoP) for STPs.</u>**
   PHED was to finalize the SoP of all STPs and CETPs in the State as per the decision taken on 22.10.2019. PHED has finalized the SoPs, of STPs and the SoPs for CETPs of HSIIDC have been framed by HSIIDC.
5. **<u>Efficacy Study of STPs.</u>**
   The reputed agencies have been engaged to conduct the efficacy studies of the existing STPs by the concerned stakeholder departments. The reputed independent agencies engaged by various departments is as under:-

Sr. No.	Departments	Reputed agency
1	PHED	Jamia Milia Islamia University, New Delhi
2	HSVP	Jamia Milia Islamia University, New Delhi
3	HSIIDC	IIT, Delhi
4	GMDA	IIT, Rookee
5	ULB	Yet to be engaged

The departments informed that the report of the agencies is awaited shortly. Further to take action on the report i.e. inviting of the tender, allotment and execution of work may take some more time and likely to be completed by 30.06.2020.

6. Commencement of In-situ Phyto-remediation/ Bio-remediation in the drains from 1.1.2020 in the event of the failure to setup STPs.

- Time Line – w.e.f. 01.01.2020
- Where applicable – In all drains where the TPs are incomplete or under construction or untreated effluent flows.
- Status - All 11 drains in Haryana fall under this category
- Penalty after Time Line – 5 Lakh per month per drain.
- Meeting of all stakeholder Departments was held on 04.11.2019, wherein the agencies for executing the Bio / Phyto remediation works in specific drains were identified (PHED, ULBD, GMDA & HSIIDC). Work is yet to be taken up. In the meeting held on 04.11.2019 two departments for each drain which contribute maximum share in the quantum of flow were identified. Further, one Nodal Department was identified for each drain for defining scope of work pertaining to the departments and shall be responsible for implementation of the work..

  The Nodal departments were identified as under :-

Sr. No.	Name of Drain	Main Stakeholder Departments	Name of ULB	Nodal Department for execution of works
1.	Dhanura Escapes (Ditch Drain)	PHED, ULBD	Yamunanagar	PHED
2.	Drain no. 2	ULBD, HSVP	Panipat	ULBD
3.	Drain no. 6	ULBD,HSIIDC	Sonipat	HSIIDC
4.	Mungeshpur	ULBD, PHED	Bahadurgarh	ULBD
5.	KCB Drain	HSIIDC,ULBD	Bahadurgarh	HSIIDC
6.	Drain no. 8	Not required being nil flow		
7.	Leg I	MCG, GMDA	Gurugram	MCG
8.	Leg II	MCG, GMDA	Gurugram	MCG
9.	Leg III	MCG, GMDA	Gurugram	GMDA
10.	Budhiya Nalah	ULBD,HSIIDC	Faridabad	ULBD
11.	Guanchi	ULBD, PHED (For discharge of village Hodal and Hathin).	Faridabad	ULBD

7. Setting up/ up-gradation of CETPs for control of industrial pollution in the drains.

7.1 Existing CETPs and compliance status (Annexure-3 A)

As per latest status, 1 CETP is non complying out of total 13 CETPs in the catchment of river Yamuna.

Department	Total No. Of CETPs	Total Capacity	Non-Complying	Capacity of non complying CETPs
HSVP	2	42	1	21
HSIIDC	9	116.2	0	0
Private Party	2	0.55	0	0
Total	13	158.75	1	21

7.2 CETPs proposed to be upgraded (Annexure-3 B)

No. of CETPs proposed to be upgraded – **7**
Capacity **- 58.2 MLD**

7.3 CETPs proposed to be constructed (Annexure-3 C)

No. of CETPs proposed – **8**
Capacity **- 120.25 MLD**

8. Septage management policy for safe disposal of septage generated in unsewered areas.

19 ULBs falling in the catchment of River Yamuna has notified their policy for Septage management. The details regarding Month wise quantum of sewage disposed off though tankers is enclosed as **Annexure-4.**

9. Installation and maintenance of Online Monitoring System for STPs and CETPs.

9.1 OMD in STPs

Out of total 58 STPs located in the catchment of River Yamuna, 48 STPs have installed online monitoring devices and38 are connected with HSPCB server.

Sr. No.	Departments	Total STPs	No. of STPs Installed OMDs	No. of STPs Connected to HSPCB server
1.	**PHED**	42	36	30
2.	**HSVP**	5	4	2
3.	**GMDA**	5	5	4
4.	**ULBD**	9	3	2
	Total	**61**	**48**	**38**

9.2 OMD in CETPs

Out of total 13 CETPs located in the catchment of River Yamuna, 12 CETPs are connected with HSPCB server.

Sr. No.	Departments	Total CETPs	No. of CETPs Installed OMDs	No. of CETPs Connected to HSPCB server
1.	**HSIIDC**	8	8	7
2.	**HSVP**	2	2	2
3.	**Private Party**	2	2	2
4	**GMDA**	1	1	1
	Total	**13**	**13**	**12**

10. Status of laying of sewer network/ connectivity. (Annexure-5)

- Total towns in catchment of River Yamuna- **34.**
- Sewer lines are under process in 23 Towns – Plan for 2 towns (Beri & Panipat) are beyond the timelines prescribed by NGT with target date 31.12.2020
- Work of laying of sewerage fully laid in 11 towns i.e. Radaur, Ganaur, Nuh, Kharkhoda, Sampla, Yamuna Nagar Ladwa, Hathin, Meham, Gurugram and Chhachhrauli.
- Total length of sewer line to be laid - **1516 Km**
- Length laid so far - **832** Km
- For those areas, where STPs/CETPs/Sewer Network are required and no work has been started yet (as on 11.09.2019), the works have to be completed by 31.12.2020

11. Interception of sewage (excluding Gurugram)

84.14 MLD of effluent was proposed to be tapped/ diverted at 165 locations. Out of which 28.6 MLD effluent has been diverted at 49 locations.

Progress regarding Tapping of Sewage(excluding Gurugram)							
Sr. No.	**Name of city MC**	**No. of location**	**Quantum of effluent to be diverted MLD**	**No. of location work completed**	**Quamtum diverted**	**No. Of location where work is under process**	**No. of location work not started**
1	Yamuna Nagar	12	14.8	1	0	7	4
2	Rohtak	2	8	0	0	2	0
3	Sonepat	9	8.8	1	0.75	5	3
4	Kharkhoda	1	12.25	1	12.25	0	0
5	Tarori	10	1.28	These points falls in approved areas where sewer line has already been laid by PHED Department so the sewerage of these points is to be tapped by PHED Department			
6	Gohana	3	1.8	2	1.2	1	0
7	Jhajjar	6	3.55	4	2.25	2	0
8	Hodal	4	2.3	2	1.5	0	2
9	Nilokheri	2	1.3	2	1.3	0	0
10	Panipat	58	19.82	30	5.95	0	28
11	Bahadurgarh	17	5.48	5	1.18	0	12
12	Gharaunda	5	0.97	5	0.97	0	0
13	Palwal	29	2.49	0	0	29	0
14	Ganaur	2	0	0	0	2	0
15	Radaur	1	0	0	0	1	0
16	Sampla	4	1.3	4	1.3	0	0
		165	**84.14**	**57**	**28.65**	**49**	**49**

12. Leg-I, Leg-II, Leg-III.

Progress status for interception of sewage at Leg-I, Leg-II and Leg-III is enclosed as **Annexure-6 A, 6 B & 6 C.**

- **Leg I –** 13 locations out of total 16 locations have been plugged upto 1.1.2020. Work is under process at rest of 3 locations.

- **Leg II** - Effluent has been tapped at 23 locations out of total 33. Balance 10 locations to be attended.
- **Leg III -** Work completed at 21 locations out of total 61. Work is under progress at balance 40 locations.

The work of tapping of sewage in Leg-I, Leg-II, Leg-III drains will be completed by 31.12.2020. The details are as under:-

Sr. No	Drain	Total Points	Points plugged up to 01.01.2020	Balance point to be attended	Points where sewage is to be diverted	STP/ MPS to be constructed	Discharge treated after attending balance points	Target date
1	Leg No. I	16	13	3	2	1	5.4	31.12.2020
2	Leg No. II	33	23	10	8	2	19.35	31.12.2020
3	Leg No. III	61	21	40	27	13	50.5	31.12.2020

13.<u>Status of Gurugram.</u>

- Quantum of sewage generated in Gurugram – **446 MLD**
- Existing treatment capacity – **573 MLD**

14.<u>Status of Faridabad.</u>

- Quantum of sewage generated in Faridabad – **210 MLD**
- Existing treatment capacity –**140 MLD**
- Gap in treatment capacity – **70**
-

15. <u>Treatment of Sewage generated from villages</u>

- 277 villages are identified in the catchment of river Yamuna by Panchayats Departments.
- Action plan has been prepared for all the 277 villages with the target date 31.12.2020.
- Work of diversion/treatment of sewage completed in 21 villages out of total 277.

16.Environmental compensation (Annxure-7).

- No. of violating units where Environment Compensation imposed- **21**
- Amount of EC imposed – Rs. **22514813**
- Amount EC collected – Rs. **7547500**

17. Action taken report against non complying units (Annxure-8 & 9).

- No of units inspected by Board -902
- No. of units found non complying -295
- No. of units closed by Board -241
- No. of prosecution cases filed -157

18. Industrial effluent generation and treatment details (Annexure 10).

- No. of industries in catchment of River Yamuna -2597.
- Quantum of Industrial effluent generation -129.7 MLD
- Existing treatment capacity of CETPs –158.750 MLD
- Treatment capacity under proposal - 21 MLD
- Gap in treatment -0

19.Environmental flow in River.

It has been reported by the Irrigation and Water Resources Department, Haryana that as per MoU dated 12.05.1994 signed among the States of UP, Haryana, Rajasthan, Himachal Pradesh & NCT of Delhi, a minimum discharge of 352 cusec water is released in Yamuna river from Hathnikund barrage at lean period also to maintain the E-flow of river which was in accordance with the guidelines of Ministry of Water Resources, River Development & Ganga Rejuvenation, Govt. of India in compliance of the order of Hon'ble NGT dated 11.06.2015. However, in case excess discharge is received at HKB (in monsoon seasons) in comparison to capacity of channel, then this excess discharge is released into river Yamuna through Somb Nadi and the indented supply is released in the channel.

Central Monitoring Committee Visit to Karnataka to Assess the Polluted River Stretches with regard to Hon`ble NGT matter in OA No. 673 of 2018

Tour Report

Honorable National Green Tribunal (NGT), Principal Bench, New Delhi vide order dated: 20thSeptember 2018 in O.A No.673 / 2018 in the matter of news item published in the Hindu authored by Sri Jacob Koshi titled "More river stretches are now critically polluted –CPCB", the Hon'ble NGT directed the state to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes.

The CPCB monitors the quality of rivers by measuring BOD. The CPCB considers river water fit for bathing when it meets the criteria of having Bio-chemical Oxygen Demand (BOD) less than 3.0 mg/L, Dissolved Oxygen more than 5.0 mg/L and Fecal Coliform bacteria to be less than 500 MPN/100 ml. A river stretch having BOD greater than or equal to 30mg/L is termed as 'Priority I' polluted stretch, while that between 3.1-6 mg/L is 'Priority V'. In its 2015 Report, the CPCB had identified 302 polluted stretches on 275 rivers. The number of such stretches was found to be 351 in 2018.

The Hon'ble NGT passed further directions in the Order dated 06.12.2019 in OA No. 673 of 2018. Main directions of the order are as follows:

(i) 100% treatment of sewage may be ensured by 31.03.2020 at least to the extent of in-situ remediation.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31.03.2021.

(iii) A meeting at central level with NMCG as nodal agency must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action.

(iv) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakthi with a copy to CPCB.

It was decided in the 1st meeting of the Central Monitoring Committee constituted by Hon'ble NGT in this matter was held on 08.01.2020 under the chairmanship of Secretary, DoWR, RD & GR, that groups may be formed of officials from NMCG, NRCD and CPCB for reviewing the progress of the States as per the Action Plans and visit some key & important States.

Accordingly,NMCG formed team of the following officials to visit and review the progress of the Karnataka state as per the Action Plans:

i. Shri G. K. Murty, Team leader, Project Management Consultancy, NMCG (9560001092)
ii. Dr. (Smt.) Sabita Madhvi Singh, Joint Director, NRCD (8377808114)
iii. Shri KM Udayakumar, Scientist-D, CPCB, RD-Bangalore (Representative from CPCB)

The team visited Bengaluru from 05.03.2020 to 07.03.2020 and reviewed the Action plan and the status of its implementation with the officials of the Government of Karnataka. The team also visited the Priority III Polluted Stretches in River Arkavathy and priority IV Stretch in River Kabini to inspect the condition of the Rivers and to understand the Action Plansproposed by Karnataka State Pollution Control Board (KSPCB) for the various stretch.

1. Polluted Stretches in Karnataka:

Karnataka cities and towns including Bengaluru Urban Agglomeration. Karnataka has 17 Polluted River Stretches (PRS) in 17 Rivers of which 4 are under Priority III (BOD 10-20 mg/l), 7 under

Priority IV (BOD 6-10 mg/l) and 6 PRS under Priority V (BOD 3-5 mg/l). 43 towns are along these Priority Stretches, whose industries and domestic sewage contribute to the pollution.

The projected sewage generation in 2020, based on data provided by KSPCB is 882 MLD against which 622 MLD treatment capacity is existing, thus there is a gap of 260 MLD. 150 MLD STP is under construction in Bengaluru at Vrishabhvathy Valley which is expected to be completed by July 2020 (December 2020 as assessed by the team, at the site).

The polluted stretches identified by CPCB in Karnataka are:

RIVER NAME	RIVER STRETCH	BOD RANGE/ MAX VALUE (mg/L)	PRIORITY
Arkavathi	Halli Reservoir ToKanakapura Town	14	III
Lakshmantirtha	Kattemalavadi To Hunsur	7.1 - 12.4	III
Malprbha	Khanapur To Dharwad	7.3 - 17.3	III
Tungabhadra	Harihar To Korlahalli	Apr-19	III
Bhadra	Holehunnur To Bhadravathi	5.5 - 7.8	IV
Cauvery	Ranganathittu To Sathyamangalam Bridge	3.1 - 6.7	IV
Kabini	Nanjanagud To Hejjige	3.6 - 6.5	IV
Kagina	Shahabad To Hongunta	4.6 - 7.4	IV
Kali	Hasan Maad (West Coast Paper Mill) To Bommanahalli Reservoir	6.5	IV
Krishna	Yadurwadi To Tintini Bridge	3.1 - 6.2	IV
Shimsha	Yediyar To Halagur	04-Oct	IV
AsangiNalla	Along Asangi	4.4	V
Bhima	Ghanapur To Yadgir	3.3 - 6	V
Kumardhara	Along Uppinangadi	4	V
Netravathi	Uppinangadi To Mangaluru	4	V
Tunga	Shivamoga To Kudli	4.3	V
Yagachi	Along Yagachi, Hassan	4	V

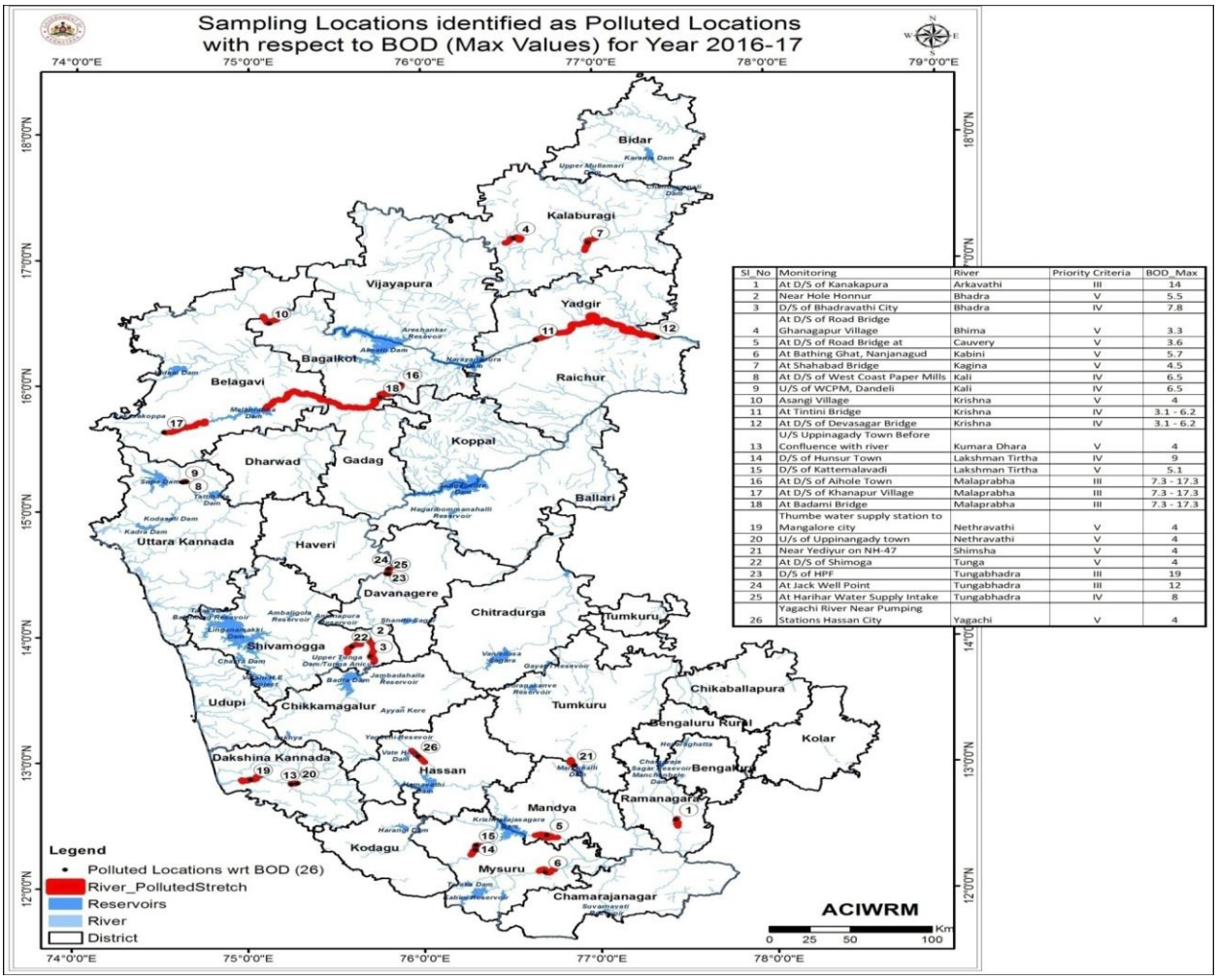
The Action Plan for Rejuvenation of River Stretches in Karnataka was submitted to CPCB in January 2019. CPCB conveyed its main observations during a meeting on 12.09.2019. The observations were mainly of the latest water quality of drains, gap analysis regarding sewage, industrial effluent and solid waste management and other requirements detailed in Hon'ble NGT's order dated 18.12.2018 as also 06.12.2019 .State of Karnataka is yet to submit the replies to CPCB.

It has been noted in the Action Plan that:

a. The Action Plans for various PRS have proposed sewerage works at 2011 population.
b. KSPCB has reported that there are no polluting industries in the stretch.
c. The 1st reported stretch in River Arkavathy flows on the outskirts of Bengaluru. Though Bengaluru does not drain directly into this river but River Vrishabhavathy joins River Arkavathy and contributes to 576 MLD of sewage from Vrishabhavathy Valley drainage

catchment of Bengaluru. This catchment has 4 industrial areas also. This catchment (V Valley) is contributing maximum pollution in entire Karnataka.
However, this river is either not monitored by KSPCB or CPCB ignored it.

d. In all the towns in PRS Underground Drainage (UGD or sewerage network) has been proposed though in many towns the laid network is not effective, as lack of individual house connections.
e. The state is proactively taking up Fecal Sludge Management in 6 towns along the PRS.
f. Reuse/ Recycle of treated waste water are not effectively implemented. After tertiary treatment 60 MLD TTP at Vrushabhavathy Valley Nayandahalli, water is again discharged in River Vrushabhavathy.



Sl_No	Monitoring	River	Priority Criteria	BOD_Max
1	At D/S of Kanakapura	Arkavathi	III	14
2	Near Hole Honnur	Bhadra	V	5.5
3	D/S of Bhadravathi City	Bhadra	IV	7.8
4	At D/S of Road Bridge Ghanagapur Village	Bhima	V	3.3
5	At D/S of Road Bridge at	Cauvery	V	3.6
6	At Bathing Ghat, Nanjanagud	Kabini	V	5.7
7	At Shahabad Bridge	Kagina	V	4.5
8	At D/S of West Coast Paper Mills	Kali	IV	6.5
9	U/S of WCPM, Dandeli	Kali	IV	6.5
10	Asangi Village	Krishna	V	4
11	At Tintini Bridge	Krishna	IV	3.1 - 6.2
12	At D/S of Devasagar Bridge	Krishna	IV	3.1 - 6.2
13	U/S Uppinagady Town Before Confluence with river	Kumara Dhara	V	4
14	D/S of Hunsur Town	Lakshman Tirtha	IV	9
15	D/S of Kattemalavadi	Lakshman Tirtha	V	5.1
16	At D/S of Aihole Town	Malaprabha	III	7.3 - 17.3
17	At D/S of Khanapur Village	Malaprabha	III	7.3 - 17.3
18	At Badami Bridge	Malaprabha	III	7.3 - 17.3
19	Thumbe water supply station to Mangalore city	Nethravathi	V	4
20	U/s of Uppinangady town	Nethravathi	V	4
21	Near Yediyur on NH-47	Shimsha	V	4
22	At D/S of Shimoga	Tunga	V	4
23	D/S of HPF	Tungabhadra	III	19
24	At Jack Well Point	Tungabhadra	III	12
25	At Harihar Water Supply Intake	Tungabhadra	IV	8
26	Yagachi River Near Pumping Stations Hassan City	Yagachi	V	4

Figure: **Polluted River Stretches in Karnataka** (Detailed List in Annexure -1)

2. Deliberations during the Team Visit:

2.1 Meeting in Karnataka State Pollution Control Board, Bengaluru: A meeting was chaired by the Principal Secretary Environment & Forest, Government of Karnataka in the Meeting Hall of the office of the Karnataka State Pollution Control Board, Hyderabad on 05.03.2020.

2.1.1 The meeting was informed that

a. A Progress Report has to be submitted by the state every month to the Secretary DOWR, RD & GR on the compliance status of the directions of Hon'ble NGT in its order dated 06.12.2020. The directions as well as the Format for the Progress report was read out and discussed. It was directed to all stakeholders to submit the report at the earliest to KSPCB so that the Report can be submitted.

2.1.2 Ensure 100% treatment of sewage at least in-situ remediation:

It was informed that Hon'ble NGT directed 100% treatment by at-least in-situ remediation by March 2020. PS directed Directorate of Municipal Administration to take immediate action in this regard.

Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured:

BWSSB informed that the projected sewage generation in Vrishabhvathy valley was 576 MLD and STPs of 426 MLD were already complete and 1 STP of 150 MLD was expected to be complete by July 2020 (However site visit confirmed that a 180 MLD STP was under rehabilitation, expected to be operational by July 2020, a 60 MLD STP was under trial run, expected to be commissioned by July 2020 and the 150 MLD STP cannot be commissioned before December 2020).

It was agreed that 100% sewage was not reaching the STPs due to lack of house service connections and missing links. PS directed BWSSB to provide solution for treating entire waste generated.

KUWSD informed that STPs of 196 MLD capacity were already existing and another 55 MLD was under creation. Proposal for approval as per the Action Plan for the gap were already submitted.

2.1.3 Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning:

KSPCB informed that in the submitted Action Plans the sewage infrastructure was proposed for the requirement of 2011 population. KUWSDB assured that the DPRs were prepared as per projected population of 2050.Timelines may be maintained as per Hon'ble NGT's directions.

KUWSDB and KSPCB were directed to revise the Action Plans accordingly.

2.1.4 Chief Secretaries may set up appropriate monitoring mechanism at State level:

A monitoring committee was to be formed as per the Hon'ble NGT directions, headed by a Secretary and also that Chief Secretary may have accountable person attached in

their office for regular monitoring. The PS informed that 2 senior officials are being recruited for appointment in the CS office for assisting him. He also assured to have a monitoring committee headed by ACS – Urban Development Department as the implementing agencies were under him.

2.1.5 Progress report to be furnished by the States/UTs to Secretary, Ministry of Jal Shakti and Member Secretary, CPCB

A Progress Report has to be submitted by the state every month to the Secretary DOWR, RD & GR on the compliance status of the directions of Hon'ble NGT in its order dated 06.12.2020. The directions as well as the Format for the Progress report was read out and discussed. It was directed to all stakeholders to submit the report at the earliest to KSPCB so that the Report can be submitted.

Progress Report may be comprised of details along with completion timelines on:

(i) **Identification of polluting sources including drains contributing to river pollution and action as per NGT order for in situ treatment**

Identification of drains contributing to river pollution by concerned 15 Regional Officers of KSPCB is under process and will be complete by end of the week. PS instructed WRD to provide flow in the drains. It was also instructed to examine the groundwater quality. No official responsible for groundwater was present in the meeting.

(ii) **Status of STPs, I&D and sewerage networks:**

Sl. No.	RIVER NAME	LOCAL BODIES	Total Sewage generation in MLD	Total Capacity of Sewage treatment in MLD	Status of STP
1	ARKAVATHI	1. Ramanagara (CMC)	8.4	7.56	Sewerage received 2.5 MLD
		2.Kanakapura (CMC)	4.5	6.29	Operational at present
		3.Bengaluru (CC)	576 (V. Valley)	326	Operational at present
2	LAKSHMANTIRTHA	4.Hunsur (CMC)	8	3.91	Operational at present
3	MALAPRABHA	5.Ramadurga (TMC)	3.67	3.30 (WSPS type), 1.00 (MBBR type)	Not Provided
		6.Khanpur (TP)	2.08	2	Not Provided by DMA
		7.Saundatti (TP)	4.5	8.50 (SBR type) 0.50 (MBBR type)	Not Provided

		8.Mugat Khan Hubli (TP)	0.68	3	Not Provided by DMA
		9. Munolli (TP)	2	8	Not Provided by DMA
4	TUNGABHADRA	10.Davanagere (CC)	48	59.8	04 STP's Operational at present
		11. Harihara (CMC)	6.8	18	Under Construction by KUIDFC
		12. Ranebennur (CMC)	11.04	15	construction completed
		13.Honnali (TP)	1.8	3.30 (WSP technology)	Operational at present
		14. Huvina Hadagali (TMC)	1.8	4.27	
5	BHADRA	15.Bhadravathi (CMC),	5	5.83	Operational at present
6	CAUVERY	16 Srirangapatna (TMC)	2.152	3.61	Operational at present
		17.T. Narasipura (TMC)	4	5	Work is under progress
		18 Bannuru (TP)	3.85	3.3	Operational at present
		19. Kollegala(CMC)	7.2	3.3	
7	KABINI	20. Nanjangudu (CMC)	8.72	7	Operational at present
8	KAGINA	21.Shahabad (CMC)	7.06	13.50 (Proposed, FSSM)	Not provided
9	KALI	22.Dandeli (CMC)	11.22	8.5	Proposed
		23. Karwar(CMC)	1.5	1.5	Operational at present
10	KRISHNA	24.Chikkodi(TMC)	2	5.8	Operational at present
		25.Ugarkurd(TMC)	1.72	3 MLD (proposed)	Not provided
		26.Kudachi(TMC)	1.72	4.62 (proposed	
		27.Examba (TP)	1	4 MLD (proposed)	
		28.Chinchali(TP)	1.14	4 MLD (proposed)	
		29. Ainapur(TP)	1.2	4 MLD (proposed)	
		30.Sadalaga (TMC)	2.4	3.72	Operational at present
11	SIMSHA	31.Maddur (TMC)	2.4	3.5	Operational at

					present
12	KRISHNA (Asangi Barrage)	32.Rabakavi-Banahatti (CMC)	7.36	9.2 MLD (Proposed)	Construction of STP work is under progress by KUIDFC
		33. Terdal (TMC)	2.81	3 MLD (Proposed, FSSM)	Proposal approved on 03-12-2018
13	BHIMA	34.Jewargi (TP)	0.25	3.25	Work under progress
	KUMARADHARA	35.Subramanya (GP)	2.6	2.6	Operational at present
		36.Uppinangady (GP)	2	2	Not provided
14		37.Panja and Kadaba (GP)	2	2	
15	NETRAVATHI	38. Bantwal (TMC)	4	4.4	Not yet Constructed
		39. Belthanagady (TP)	1.05	1.0 (FSSM)	
		40. Uppinangadi (GP)	2	2.0 (FSSM)	
16	TUNGA	41.Shivamogga (CC)	13	35.58	Operational at present
17	YAGACHI	42.Hassan (CMC)	22.11	10	Operational at present
		43. Belur(TMC)	2.4	2.7	
		TOTAL	729.13 MLD	632.34 MLD	

(iii) **Status of CETPs**

It was requested to provide information in formats provided by the Team. KSPCB informed that the information of existing CETP is available in the Action Plans and for proposed CETPs along with completion timeline information is awaited from KIADB. The information is as yet awaited.

(iv) **Status of Solid Waste Management & Details of Processing Facilities**

KSPCB informed that the basic infrastructure like compound wall, internal roads, drains, windrow platform, vermi-composting ponds, Leachate drains etc. are existing in 214 ULBs. Also, it is planned to establish decentralized composting units in all newly upgraded ULBs wherever land is not available.

(v) **Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;**

PS instructed WRD to provide flow in the drains. It was also instructed to examine the groundwater quality.

(vi) **Preventing dumping of waste and scientific waste management including bio-medical wastes, plastic wastes and decentralizing waste processing, including waste generated from hotels, ashrams, etc.**

It was informed that the Health Department regulates bio-medical waste, who were not represented in the meeting.

(vii)**Ground water regulation**

No official responsible for groundwater was present in the meeting.

(viii) **Adopting good irrigation practices**

The agriculture department was unable to provide much information but BWSSB and KUWSDB informed that treated sewage was being provided for reuse from many STPs.

(ix) **Protection and management of Flood Plain Zones (FPZ)**

Plantation in Flood Plain Zone (FPZ) Karnataka State Department Work will be initiated before rainy season for plantation. Checking encroachments in the FPZ of river Tungabhadra District/Local administration Work is Under Progress. Prohibition of disposal of municipal plastic and bio- medical waste particularly in drains work is under implementation. Notification of Flood Plain Zone still in compilation stage.

(x) **Rain water harvesting**

KSPCB was requested to provide the action taken on this account as per the Action Plan.

(xi) **Maintaining minimum environmental flow of river**

It was informed that the most of the rivers are non-perennial but e-flow is attempted to be maintained through releases from upstream reservoirs and dams. PS expressed view that some portion of treated sewage may be discharged into rivers to maintain e-flow.

Status of Environmental Flow (E-Flow)

Sl. No.	River Name	Hydrological Observation Site	Year	Flow (m^3/s)	
				Min	Max
1	ARKAVATHI	T. Bekuppe	2015	4.2	30.36
			2016	2.56	19.86
2	Lakshmantheertha	Kattemalavadi	2015	0.104	316.978
3	Malaprabha	Cholachgud	2015	8.65	167.501
4	TUNGABHADRA	Honnalli	2016	12.3	81.69
		Haralahalli		8.1	61.12
		Honnalli	2017	5.3	82.333
		Haralahalli		10.3	36.744
5	Bhadra	Holehonnur	2016	9.5	108.6
			2017	11	103.1
6	Cauvery	Chunchankatte	2015	3.87	447.012
			2016	8.17	11.25
		Kollegala	2015	11	806.821
			2016	11.2	40.01
7	Krishna (along asangi nalla	Huvinahedgi	2015	0.2	714.783
			2016	0.2	189.189
8	Krishna	Wadenapalli	2015	0.0003	229.36
			2016	0.52	184.39
9	Kumaradhara	Uppinangadi CMG station	2018	11.4	378.1
10	Kabini	T.Narsipura	2015	7.7	388.428
			2016	9	37.628
11	Yagachi	Thimmanahalli	2015	0.58	35.009
			2016	0.23	8.611

12	Netravati	Bantwal	2015	3.7	2159
			2016	0.12	2456
		Uppinangady CMG station	2018	0.7	134.4
13	Kali	KPCL, Ganeshgudi supa dam	2017	1105	2859
			2018	695	4473
14	Bhima	Yadgir	2015	20.8	297.002
15	Tunga	Shivamogga	2016	0.7	37.26
			2017	0.18	19.23
16	Kagina	Malkhed	2015	0.5	120.66
			2016	0.8	10.37
17	Simsha	*	*	*	*

(xii)**Plantation on both sides of the river**

PS informed that they have taken up plantation 0f 2 crore saplings along Cauvery under an initiative of Sadhguru. The forest department has an incentive scheme to distribute tree seedlings to farmers, who will be provided Rs. 30/- if the seedling turns into a plant and is alive after 1 year, another Rs. 30/- if it is alive after 2 years and Rs. 40/- if it is alive after 3 years. It is proposed to increase the incentive from Rs. 120/- to Rs. 325/-.

(xiii) **Setting up biodiversity parks on flood plains by removing encroachment**

Principal Secretary told that they will request. The Revenue Department not to allot lease of flood plains anymore and cancel/end lease where feasible to set up bio diversity parks

KSPCB has not issued MOM till date.

2.2 Field Visits

The team visited the PRS along the River Arkavathy and its tributary Vrishabhavathy and along River Kabini. Representatives of KSPCB accompanied the team.

2.2.1 River Arkavathy

The River Arkavathy, a tributary of Cauvery, starts in the foothills of Nandini Hills, north of Bengaluru City, flows through North West Bengaluru to Ramnaggara and Kanakpura, south west of the city to confluence with Cauvery about 65 Km south of Bengaluru. This river catches pollution from Rural Bengaluru, industrial areas of Peenya and Yeswanthapura before draining into TG Halli reservoir. However, PRS starts downstream of the reservoir and extends up to Kanakpura, 55 Km down south. Pollution from Towns of Ramnaggara and Kanakpura add pollution but major pollution, about 500 MLD sewage is added by River Vrishabhavathy.

Vrishabhavathy flows in the Vrishabhavathy Valley catchment area in West and South-West Bengaluru catching sewage from open drains, treated effluent of STPs in the catchment, industrial effluents from unorganized sector in the catchment, partial industrial effluent from Peenya and Yeswanthapura, and also from industrial areas of Kumbalgodu and Bidadi.

The sewage generation presently in V. Valley catchment is around 576 MLD with installed treatment capacity of 426 MLD. 150 MLD STP is under construction @ V.Valley and expected to be completed by July 2020 along with rehabilitation of existing 180 MLD STP. Also BWSSB has planned to establish 9 STP's of 70 MLD capacity in 110 villages under JICA funding of Cauvery 5th stage.

Existing STP's;

1. 1 MLD STP at Kempambudhi.
2. 180 MLD STP at V.Valley.

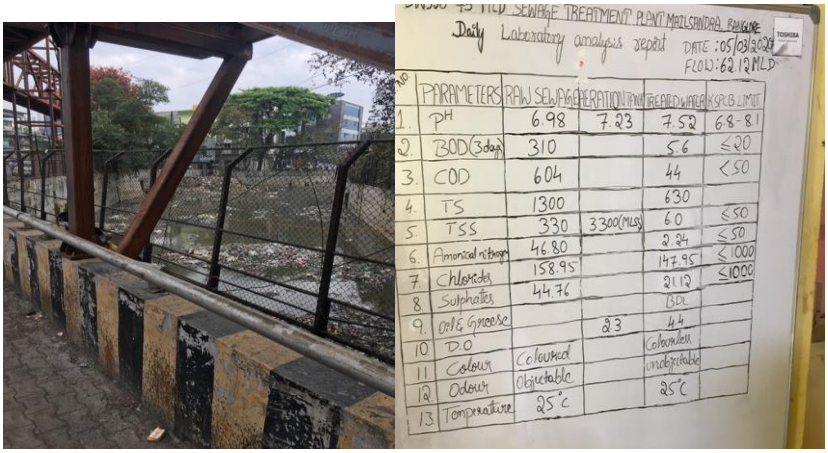
   60 MLD TTP at V.Valley from outlet of 180 MLD STP.
3. 75 MLD STP at Mailasandra
4. 60 MLD STP Kengeri.
5. 20 MLD STP & 40 MLD STP at Doddabele.
6. 5 MLD STP at Mallathahalli.
7. 20 MLD STP(Old) & 20 MLD STP (New) at Nagasandra.
8. 5 MLD STP at Chikkabanavara.

Under construction STP;

1. 150 MLD STP at V. Valley, Nayandahalli is under progress & will be completed by the July 2020.

2.2.1.1 River Vrishabhavathy

1. River Vrishabhavathy is highly polluted (reported BOD 72 mg/l at Shyanumangala bridge – 20 Km from existing STP of Doddabally) but is not considered in the Polluted River Stretches. KSPCB and BWSSB report it as Vrishabhavathy Valley and not as a river.
2. Existing STP based on ASP technology at Mailasandrawas inspected and found to be treating 70.78 MLD during the previous 24 Hours. A test report of 03/02/2020 reported BOD of 5.0 mg/l, COD of 17 mg/l and TSS of 4 mg/l.
3. The influent was reported having BOD and COD around 300 mg/l and 600 mg/l indicating presence of industrial pollution.



4. The river drains into Byramangala Reservoir d/s of Shyanumangala Bridge mentioned above. Reportedly, in pursuance of a Lokayukta GOK to clean the reservoir order the Vrushabhavathy is being bye passed to downstream of the reservoir with a concrete channel.

5. On 7th March 2020, officials visited the treatment plant located in V. Valley Nayandahalli & inspected the 60 MLD TTP & under construction STP of 150 MLD

    a. After 60 MLD tertiary treatment only 6 MLD is reused, rest again discharged in V. Valley river.

    b. BWSSB does not have a proper plan for reuse and recyle of treated water.

2.2.1.2 River Arkavathy

1. Ramanagara was visited where the team was joined by Project Director, Urban Development, Ramnaggara District, Commissioner and engineers of ULB, Executive Engineer and team of KUWSDB and other stake holders.

Arkavathi River Stretch, CMC Ramanagara, Ramanagara

2. Ramanagara town has silk cocoon processing and silk thread reeling industry in unorganized sector which generate effluent with high BOD and COD that is let out into municipal drains. The domestic sewage/sullage in the drains also carry the effluent and waste generated from filatures. It is suggested that proposed STP in Ramnaggara may be designed as a CETP to treat the combined effluent of domestic sewage/sullage and trade effluent.

3. The sewage network planned for Ramnagara town has proposal for outfall along the river bank. It was suggested that these outfalls may be planned as conveyance from drains discharging into the river.

4. In-situ remediation of all drains may be immediately taken up by ULB and KUWSDB under consultation from KSPCB to meet hon'ble NGT's timelines.

5. Existing STP of 7.5 MLD was receiving only 2.5 MLD as the machinery in 3 out of 4 wet wells were not working properly. The program of rehabilitation was discussed and it was ensured that the wet well at Balgeri should be

functional by the end of April 2020, the wet well at Industrial estate should be functional by the end of June 2020 and the detailed estimate for rehabilitation of wet well at Yakubnagar should be prepared for effective operation of August 2020.

Sewage Treatment Plant (STP) capacity of 7.56 MLD on Arkavathi River, Ramanagara

6. **Solid Waste Management:** Commissioner, CMC, Ramanagara explained difficulties they are facing in the view of non-availability of landfill site and provided details of process they are adopting for waste management.
    a. 4 Decentralized units are established at different parts of town and compost being prepared at these centers.
    b. Bio-methane plant is setup at Ward No.1 to process 1 TPD of waste per day with production of 10KVA electricity which is utilized for parks and street lighting.
    c. For effective implementation of Solid Waste Management Projects the action plans, the approvals, technical sanctions should be accorded at the earliest to ensure timely implementation of SWM Rules 2016.
7. It was informed that the treated water from STP Plant is used for agriculture purpose. The Commissioner, CMC, Ramanagara explained the project for making reuse of 2.5 MLD treated water from STP Plant to the nearby industry Senapathy Whitely Limited is already approved by the government. It was instructed to implement the project at the earliest possible time.
8. It was instructed CMC Ramanagara to identify Flood Plain Areas in their respective limits and to remove encroachment if any.
9. Sample Analysis of Water drains discharging into Arkavathi River should be carried out to initiate proper treatment facilities.

2.2.1.3 River Kabini

1. There is only 1 town Nanjangud, Kabini River in a stretch of 9 Km. But the town has highest no. of industries in single town along all the PRS.
2. The team was joined by officials of KSPCB, CMC Nanjangud, and KUWSS & DB.
3. A storm water drain upstream of Nanjangud was visited which was downstream of industrial area. Not much pollution was observed in it. It was informed that another drain nearest to the industrial area was unapproachable.

4. The STP in Nanjangud (7.5 MLD) was proposed to be receiving only 1 MLD as 100% house connectivity could not established and land acquisition issues related with 1 of the 2 wet-wells of the project.

   It was observed that the drains discharging sewage into the river can be connected to wet wells/outfall sewers nearby. This may be executed immediately to ensure increase of at least 3-4 MLD inflow to the STP. CMC was asked to expedite land acquisition.

5. The Assistant Executive Engineer, KUWSS& DB provided details regarding coverage of UGD connections left out in the town missing links, household connections and upgradation of STP to meet treatment standards and claimed that the DPR along with estimate of Rs. 36 Crores has been already prepared and submitted to CE, KUWSS&DB.
   It was instructed that the said works would not cost more than Rs. 7-8 Crores and KUWSDB may complete entire project without any delays by diverting the sewage in drains to nearest wetwell/outfall sewer.

3. Proposed targets for making Rivers Pollution Free in Karnataka

TASK	**PRESENT***		**NGT (2021)**	**2022 (Proposed)**	**2024 (Proposed)**
Sewage Management		Karnataka			
▪ Treatment Capacity	35 %	34.4%	100%	75%	90 %
▪ Utilisation of Treated Wastewater	< 2 %	21.4%	---	20 %	50 %
Industrial Effluent Management		-			
▪ Treatment Capacity	98 %	-	100%	100 %	100 %
▪ Utilisation of Treated Effluent	20 %	-	---	30 %	40 %
▪ Reduction of Fresh Water use	---	-	---	10 %	25 %
Solid Waste Management		-			
▪ Collection	80 %	86.7%	100%	100 %	100 %
▪ Treatment	26 %	35.8%	100%	75 %	100 %
E-Flow Management		-			
▪ Lean Flow	---	-	15-20%	15-20%	15-20%

4. Conclusions and Recommendations

4.1 The Action Plans have inputs from stakeholders but has been prepared by KSPCB. The Action Plans may be revised to include actual proposals of the stakeholders.

4.1.1 The sewerage infrastructure has been proposed for 2011 in the Action Plans. The same may be revised as per CPHEEO norms.

4.1.2 The total solid waste generation in the ULBs in the PRS is 5197.186 TPD against which treatment facility for 3148.46 TPD is available. So the state has to provide treatment facilities for the gap of 2048.726 TPD. The Action Plans are also silent about the same. The Revised Action Plan must include firm plan and cost for the same.

4.1.3 The Action Plans have proposals for Under Ground Drainage (sewerage networks). UGD takes long time in execution and also are ineffective due to missing links and low house connections. Therefore, Interception and Diversion (I & D) of the drains discharging into rivers may be taken up for conveyance of sewage to STP.

4.2 Several drains are flowing into River Vrushabhavathy, and during meeting BWSSB officials agreed that this situation shall continue despite completing entire under-execution network due to missing links and incomplete house connections.

4.2.1 The sewage flow from the drains joining River Vrushabhavathy can be intercepted and diverted to existing/STPs under construction to ensure no untreated sewage flows into the river.

4.2.2 Immediate in-situ treatment of the drains discharging into the river may be taken up to ensure compliance of directions of Hon'ble NGT.

4.3 During field visits of Ramanagara and Nanjangud following suggestions were made by the team:

4.3.1 The sewage network planned for Ramnagara town has proposal for outfall along the river bank. These outfalls may be planned as conveyance from drains discharging into the river.

4.3.2 The STP in Nanjangud (7.5 MLD) was proposed to be receiving only 1 MLD. It was observed that the drains discharging sewage into the river can be connected to wet wells/outfall sewers nearby. This may be executed immediately to ensure increase of at least 3-4 MLD inflow to the STP.

4.3.3 Ramanagara town has silk cocoon processing and silk thread reeling industry in unorganized sector which generate effluent with high BOD and COD that is let out into municipal drains. The domestic sewage/sullage in the drains also carry the effluent and waste generated from filatures. It is suggested that proposed STP in Ramnaggara may be designed as a CETP to treat the combined effluent of domestic sewage/sullage and trade effluent.

4.4 Appropriate monitoring mechanism at State level to monitor the progress of the work against the Hon'ble NGT order dated 06.12.2019 needs to be immediately set up. KSPCB should proactively take up the task of monitoring the implementation.

4.5 Karnataka State is yet to submit the performance guarantee of Rs.10 crores for ensuring the timely implementation of approved action plans for rejuvenation of 17 Nos. of identified polluted river stretches in the state.

4.6 KSPCB, BWSSB, ULB or KUWSDB were unable to provide results of combined sampling of operational STPs by Operating Agencies and KSPCB. It is suggested that combined sampling and performance assessment may be made quarterly by the Agency and KSPCB and the report be submitted along with monthly progress report.

4.7 Reuse/ Recycle of treated waste water are not effectively implemented. Policy yet to formulate.

4.8 The drains as identified by Water Resources Department are being tested by KSPCB in response to CPCB observations on Action Plans. KSPCB may test

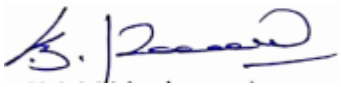
a. All drains discharging into the river irrespective of whether they are identified by WRD or not.

b. Tubewells near the river banks especially those near the industrial areas.

4.9 The total solid waste generation in the ULBs in the PRS is 5197.186 TPD against which treatment facility for 3148.46 TPD is available. So the state has to provide treatment facilities for the gap of 2048.726 TPD. The Action Plans are also silent about the same. The Revised Action Plan must include firm plan for the same.

4.10 It may be studied if water can be stored in the upstream reservoirs that can be released in the lean seasons to maintain the e-flows.

4.11 Constructed Wetland may be provided upstream of Byramangla Reservoir to conserve the wetland instead of diverting sewage water downstream.



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Scientist `D`	Joint Director	Team Leader, PMC
CPCB, RDS, Bengaluru	NRCD, New Delhi	NMCG, New Delhi

Annexure 1

List of Monitoring Stations in Karnataka

Station Code	Name Of Monitoring Location	Name Of Water Body	Latitude	Longitude
2778	Arkavathi At T.G. Halli Reservoir, ,	Arkavathi	12.967039	77.337053
2779	Arkavathi At Hesaraghatta Reservoir,	Arkavathi	13.144364	77.484511
1165	Arkavathi At D/S Of Kanakapura	Arkavathi	12.535417	77.424792
1196	Lakshmantirtha At D/S Of Hunsur	Lakshmantirtha	12.302189	76.286164
2772	Lakshmantirtha At D/S Of Kattemalavadi,	Lakshmantirtha	12.344614	76.286175
1186	Malprabha At D/S Of Aihole Town,	Malprabha	16.009319	75.878022
1187	Malprabha At D/S Of Khanapur Village,	Malprabha	15.633431	74.510322
2764	Malprabha At Badami Bridge,	Malprabha	15.875672	75.722272
38	Tungabhadra At Honnali Bridge	Tungabhadra	14.236122	75.659356
1029	Tungabhadra At Haralahalli Bridge,	Tungabhadra	14.325397	75.771092
1896	Tungabhadra At Confluence Point Of Tunga And Bhadra At Kudli	Tungabhadra	14.011333	75.676667
2768	Tungabhadra At D/S Of Hpf,	Tungabhadra	14.514278	75.785697
2769	Tungabhadra At Jackwell Point,	Tungabhadra	14.526500	75.796072
2770	Tungabhadra At Harihar Water Supply Intake,	Tungabhadra	14.515836	75.797939
1169	Bhadra At D/S Of Kiocl Road Bridge, Near Holehunnur,	Bhadra	13.989311	75.683736
1387	Bhadra At D/S Of Bhadravathi,	Bhadra	13.832272	75.713164
1171	Cauvery At Sri Rangapattanna, D/S Of Road Bdg.,	Cauvery	12.423705	76.693672
2774	Cauvery At Ranganathittu,	Cauvery	12.425022	76.653544
1198	Cauvery At Napokulu Bdg (D/S),	Cauvery	12.314149	75.698522
2773	Cauvery At Bannur Bridge,	Cauvery	12.321469	76.841472
3570	Cauvery D/S Of Kr Nagar Bridge	Cauvery	12.349387	76.291890
3571	Cauvery U/S Of Kr Nagar	Cauvery	12.344232	76.282887
2775	Kabini At Bathing Ghat, Nanjanagud,	Kabini	12.128775	76.683736
1197	Kabini At Saragur Village D/S,	Kabini	12.019853	76.388075
41	Kabini At Cause Way Sattur	Kabini	12.166761	76.792908
1895	Kagina D/S Of Sewage Disposal Point	Kagina	17.107483	76.955311
2777	Kagina At Shahabad Bridge,	Kagina	17.139369	76.966739
1444	Kali At D/S West Coast Paper Mill (Wcpm) ,	Kali (Karnataka)	15.235272	74.618650
1170	Krishna At D/S Of Devasagar Bdg.,	Krishna	16.380508	77.362725
1181	Krishna At D/S Of Narayanpura Dam,	Krishna	16.242436	76.370678
1182	Krishna At U/S Of Ugarkhurd Barrage,	Krishna	16.640864	74.821308
1889	Krishna - Ankali Bridge Along Chikkodi Kagwad Road	Krishna	16.557500	74.679717
1166	Shimsha At D/S Of Bridge, Halagur,	Shimsha	12.422764	77.226144

Station Code	Name Of Monitoring Location	Name Of Water Body	Latitude	Longitude
1200	Shimsha At D/S Of Highway Bridge, Yediyar,	Shimsha	12.979108	76.851622
3567	Shimsha D/S Near Madduar Town	Shimsha	12.584716	77.049787
2763	Asangi Nalla At Asangi Village,	Asangi Nalla	16.503131	75.116569
1167	Bhima At D/S Of Bdg. Near Yadgir,	Bhima	16.734100	77.130744
1183	Bhima At D/S Of Road Bridge At Gangapur Village,	Bhima	17.179219	76.566603
1184	Bhima At Ferozabad Village (D/S),	Bhima	17.069328	76.794283
1888	Bhima River At Confluence Of Jewargi Town Sewage Disposal Point	Bhima	17.043481	76.814478
1894	Kumaradhara - U/S Of Uppinagady Town Before Confluence With River Nethravathi	Kumardhara	12.830100	75.242439
1892	Netravathi U/S Of Dharmastala At Water Supply Intake Point	Netravathi	12.947644	75.359525
1168	Tunga At D/S Of Shimoga Town,	Tunga	13.926464	75.583336
1893	Yagachi River Near Pumping Station. Hassan City	Yagachi	13.006814	76.099553

Annexure 2

Industries in 17 Identified Polluted River stretches of Karnataka

S. No.	River Name	Number of Industries
1	Arkavathi	2
2	Lakshmantirtha	0
3	Malaprabha	4
4	Tungabhadra	4
5	Bhadra	3
6	Cauvery	48
7	Kabini	46
8	Kagina	0
9	Kali	2
10	Krishna	4
11	Simsha	1
12	Krishna(Asangi Barrage)	2
13	Bhima	0
14	Kumaradhara	0
15	Netravathi	0
16	Tunga	0
17	Yagachi	0
	Total	**116**

Report on Review of progress on Polluted River Stretches (PRS) Kerala held on 05-06/03/2020 at Thiruvananthapuram / Mannar

1. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 25th February 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/ futuristic gap to make a conditional assessment and requiring interventions, if any. For the State of Kerala, composition of the team was as below: -

   a. Shri Manish Kumar (in place of Shri Rajat Kumar Gupta), NMCG

   b. Shri A P Singh, NRCD

   c. Dr. Deepesh V, CPCB

2. The above team visited Thiruvananthapuram and Mannar in Pathanamthitta District during 05-06 March, 2020 to ascertain the ground reality and to interact with the stakeholders mainly representatives of local bodies (Municipal Corporations/Municipal Councils/Nagar and Gram Panchayat) responsible for sewerage infrastructure to be/ being created for the said polluted river stretches in River Karamana and River Pamba respectively.

3. The meeting of the Polluted River Stretches (PRS) Assessment Team was held on 05/03/2020 at 10:30 am in the presence of River Rejuvenation Committee(RRC) members/ representative and officials from concerned organizations, authorities/departments, agency and associations to take overview of PRS and its present status in matter of PRS of River Karmana (Priority I) in District of Thiruvananthapuram.

4. During brief introduction, it was noted that meeting was attended by Senior officials/representatives of all RRC members.

5. A brief about State of Kerala

a. The state of Kerala located on the southernmost tip of India is bounded by Western Ghats on east and Lakshadweep Sea on the west and having an area of 38863 sqkm.

b. The state comprises of 14 districts namely Kasaragod, Kannur, Kozhikode(Calicut), Wayanad, Malappuram, Palakkad, Thrissur, Ernakulam, Idukki, Kottayam, Alappuzha, Pathnamthitta, Kollam and Thiruvananthapuram with cumulative population of 3.34 Crores as per 2011 census.

c. The urban population is spread across 520 Urban Local Bodies consisting of 5 Corporations, 53 Municipalities, 1 Cantonment Board and 461 Census Towns.

d. There are 8 major cities in Kerala. Out of 8 cities only Thiruvananthapuram (107MLD STP) and Kochi (5.5 MLD STP) have sewerage infrastructure.

e. Wastewater disposal and treatment was a major problem in cities in Kerala. The waste water from toilets is been disposed through septic tanks and soak pits and grey form of wastewater from kitchen and bathrooms is directly discharged into the sludge drains without any treatment.

f. The details of waste water Management in four major cities are as follows:

Corporation	Sewage Generation in MLD Year 2035 (approx.)	Total STP capacity in MLD	Working STP capacity in MLD	STP capacity under Construction in MLD	STP utilization (%)	Sewer network coverage
Thiruvananthapuram	120	112	107	5	65	30%
Kochi	97	5.5	5.5	0	80	5%
Kozhikode	70	0	0	0	0	0%
Kollam	56	0	0	0	0	0%

6. A brief Presentation was made by Member Secretary Smt. Sreekala regarding PRS in State of Kerala.

The following facts were presented:

a. As per NGT order, CPCB has identified 21 PRS in 10 districts of Kerala State. Out of 21 PRS, River Karmana is in Priority 1, 5 nos are in Priority IV and 15 nos is priority V. Details are tabulated and annexed as **Annexure I**.

b. Following actions has been taken

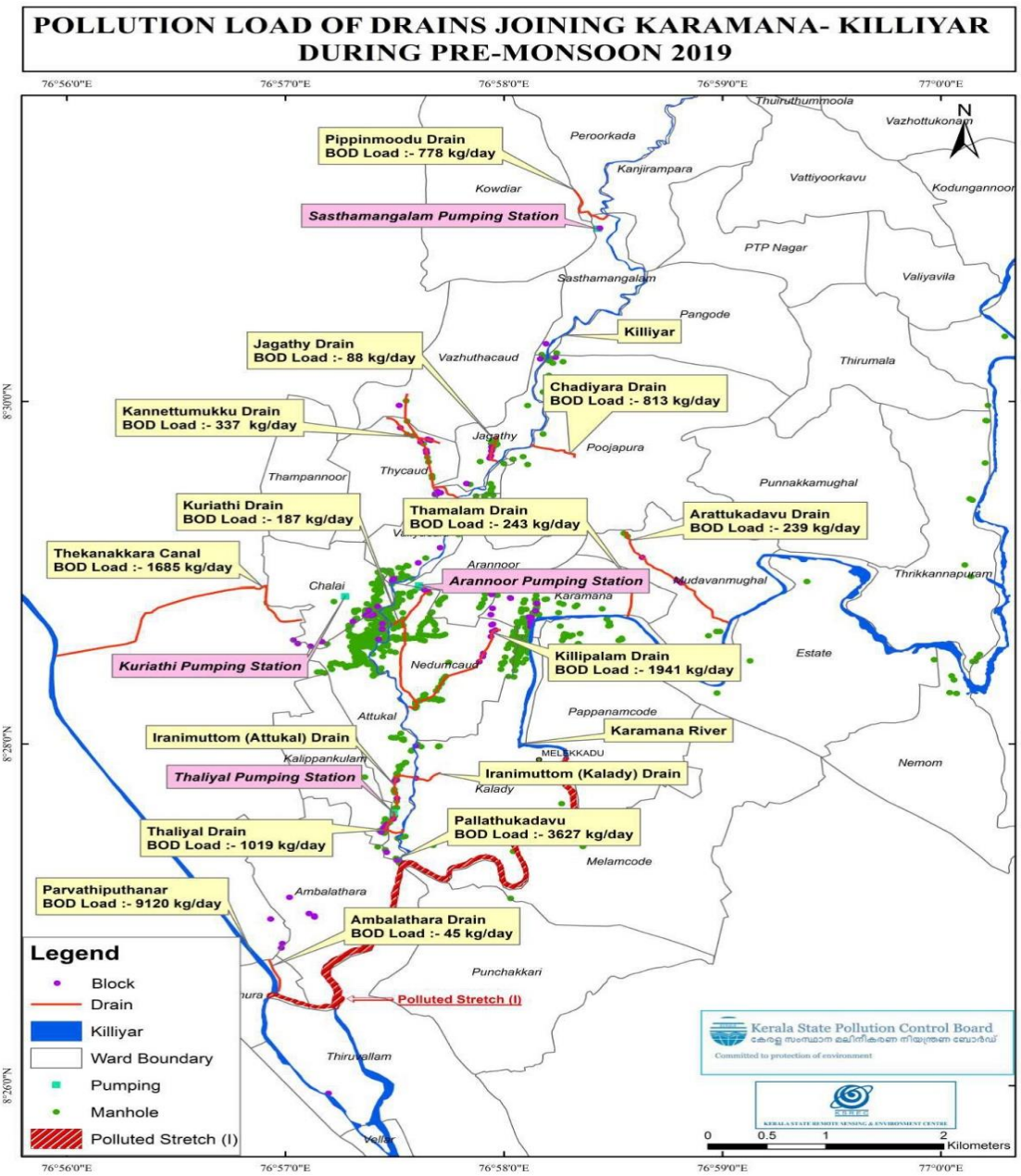
- River Rejuvenation Committee (RRC), and Special Environment Task force (SETF) at State & District Level has been formed vide GO(Rt) No. 135/2018/Envt. Dated 12/12/2018.
- Website www.ksrrc.in was developed and is continuously being updated.
- Draft Action Plans for 21 PRS were submitted to the Hon'ble NGT and CPCB.
- Action Plan for River Karamana was approved by Hon'ble NGT and all the action plans are being implemented with utmost importance.
- Action plan for Priority IV-V PRS (20 Nos) are being revised as per directions of CPCB.
- Status of action plans is being reviewed constantly at District and State level by SPCB, RRC and Chief Secretary.
- There are 128 monitoring stations considered under State Water Quality(WQ) Monitoring Programme and National Water Quality Monitoring Programme SPCB has

c. The present Compliance Status district wise of Action Plans for all 21 PRS is tabulated and annexed as **Annexure II**.

d. The detailed presentation on PRS Priority I -River Karamana (Malekkadu to Thiruvallam-5 km) was also made and discussed.

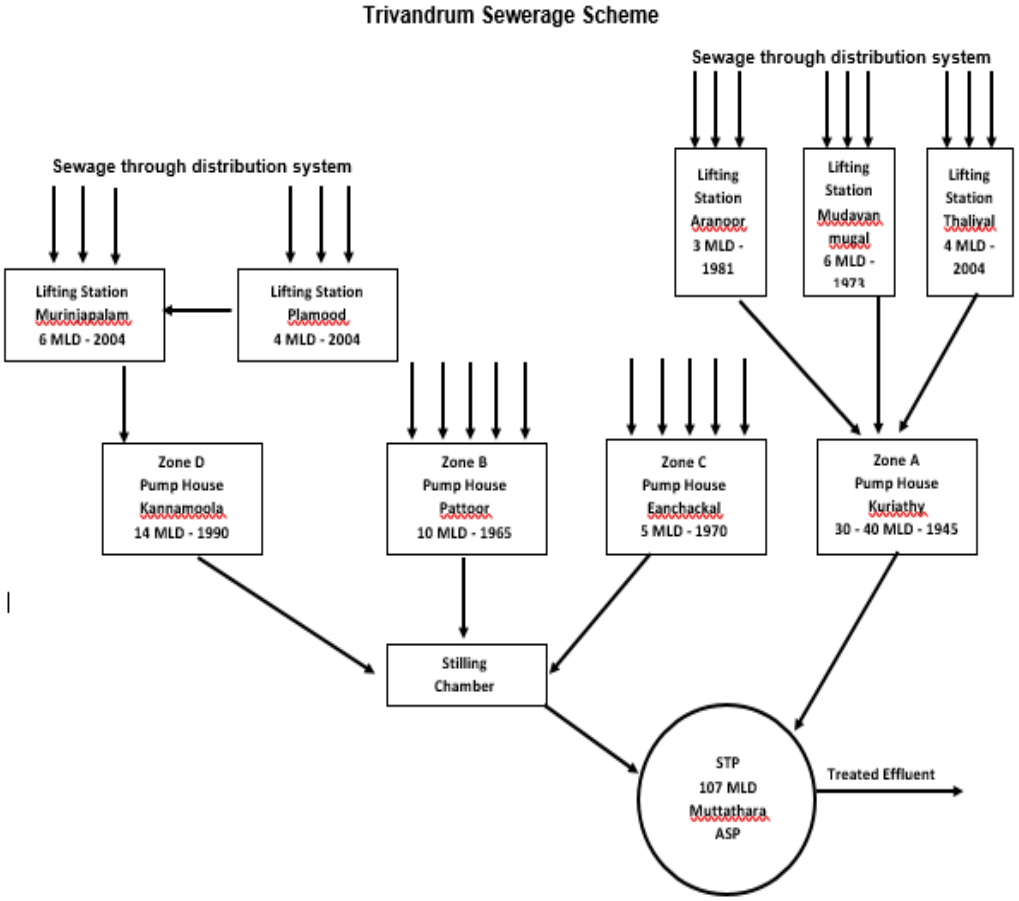
- The **Figure I** shows that Karmana river has basin of 690 sq km and Killiyar river is its largest tributary.
- The pollution is primarily due to sewage and sullage of discharge and dumping of solid waste from the Thiruvananthapuram city.
- Regarding liquid waste management, as per SPCB,there 16 drains discharging approx. 60 Tons of BOD load per day in River Karamana.

Figure I: Basin of River Karmana and River Killiyar (its largest tributary)



- There is existing sewerage infrastructure consists of 5 IPS,4 SPS,1 MPS and ASP based STP of 107 MLD owned by Kerala Water Authority (KWA) and presently operated by M/s Eco Chem, Surat. STP is treating approx. 70 MLD of sewage with discharge effluent as per norms of 30 mg/l and enough to cater the entire city. Scheme is summarized in **Figure II.**

Figure II: Trivandrum Sewerage Scheme



- Regarding Industrial pollution, SPCB has inspected and assessed pollution loads from 79 units (hospitals, commercial establishments, residential apartment complexes, service stations, markets, industries) and issued notices/instructions to 32 units.
- Regarding Sanitation, SPCB Conducted sanitation survey of 250m on either sides of the River Karamana and Killiyar and 10m on either side of six identified polluted streams to curb pollution from encroached and unauthorized colonies.
- Regarding Sanitation, The sanitation survey was conducted by SPCB in 45 wards, through which the Karamana and Killiyar passes through the city area. 9263 residences, 706 establishments and 32 flats have been surveyed.

- Regarding Sepatge management, Thiruvananthapuram Municipal Corporation(TMC) has septage collection system in place with sludge disposal facility at existing 107 MLD STP by co-treatment.
- Regarding Solid waste management(SWM),TMC adopting approach of decentralized waste treatment and waste segregation as an action plan.
- Under State Water Quality(WQ)Monitoring Programme and National Water Quality Monitoring Programme SPCB has conisedered below three sampling points on PRS of River Karamana

➢ Pallathukadavu

➢ Thiruvallam

➢ Moonnattumukku

- The comparative statement of the PRS priority based on BOD results of Year 2019-20 with CPCB Report Sep-2018 indicated that 12 PRS shows Improvement in quality (Priority down) and already achieved prescribed standards, while 08 PRS shows improvement in water quality however no change in priority.

e. As per WQ report of KSPCB, the BOD is reduced to 18 mg/l which was reported as 56 mg/l at the time of identification of PRS.

f. Action plan is prepared which includes both short term and long term measures. The progress on the individual action plan items, primarily in respect of sewage management, industrial waste management and solid waste management was reviewed, and the status is placed at **Annexure III**.

During detailed discussions / review following issues and concerns were brought to notice of the team.

- Progress of Short-term Action Plans to be completed by May 2020
- Progress of Long-term Action Plans
- Progress of 5 MLD STP
- Septage Management
- Direction of Hon'ble NGT order 06/12/2019 regarding in situ treatment of drains by 31.03.2020
- Validation of Water Quality of PRS by CPCB
- Action plans for Solid Waste Management (SWM)

- Ultimate disposal of waste-Solid and Sludge
- Reuse and Recycle of Treated water

7. Discussion regarding Rejuvenation of River Karamana by developing Bio diversity park, etc has also held with concerned officials.
8. The next meeting of PRS Assessment team regarding PRS of River Pamba was held on 06/02/2020 at 10:30 am at Mannar in the presence of RRC members/ representative and officials from concerned organizations, authorities/departments, Gram panchayat of concerned districts.
9. During the meeting draft of modified action plan for River Pamba has been discussed and found that main issue is lack of SWM and its safe disposal.

10. PRS Assessment Team Observations

The assessment team also visited u/s of PRS of River Karaman,sewage pumping station,5 MLD STP under construction, drains & monitoring locations and 107 MLD existing STP during the visit. The observations from the site visit and discussions are as under:

a. The quality of water in river Karamana near Karamana bridge u/s of PRS was good and there is no drain meeting river up to the Malekkadu i.e. starting point of PRS. However, results showing high level of pollution in PRS of River Karamana.

b. The water was almost stagnant at sampling point 1 i.e Pallathukadavu at confluence of River Killiyar with river Karamana, sampling point 2 i.e Thiruvallam and sampling point 3 i.e. Moonnattumukku confluence point of TS canal with River Karamana.

c. River Killiyar was polluting river Karamana as it carries discharge of maximum number of drains and SPCB is not monitoring pollution in the river.

d. At Sampling point 2, River Karamana is dividing into two streams, out of which only one stream is confluence with sea behind Adyar resort and Sampling point 3- TS canal is making condition worst and hyacinth were grown as water is stagnant.

e. As reported by KSPCB and observed, main cause of pollution in River Karamana is discharge of sewage from the city through drains, TS canal etc. and lack of sewer network in 70% of city.

f. The prominent large industries are M/s Travancore Titanium Products Ltd (TTPL), HLL Lifecare Ltd (Formerly Hindustan Latex Ltd) and English Indian Clays Ltd with respective

ETPs. Being a ZLD,M/s TTPL discharge its treated effluent in sea near Shangumugam beach which was reported to have yellowish water and other two industries discharges in to River Killiyar which appears to be more polluted than PRS of River Karamana.

g. The city also houses an international apparel park at Kazhakootam with a common effluent treatment plant which is reported as not upto the mark.

h. Solid waste dumping was visible most of the places and chicken waste was dumped just behind the MPS maintained by KWA.

i. Progress of 5 MLD STP at Medical college was slow and need to be expedited to meet the completion date of May 2020.

j. Existing 107 MLD STP was operating well with co treatment facility of treating septage and now treating 70 MLD sewage w with effluent having BOD 9 mg/l however consuming more power due to old & less energy efficient machinery.

k. There was no plan for recycle and reuse of treated effluent and disposal of sludge.

l. SPCB is claiming BOD 2 mg/l at sampling locations of River Pamba which was not supported by visual inspection of river water at locations of sampling point i.e. Confluence of two streams of River Pamba .

11. PRS Assessment Team Recommendations

a. As per progress report, most of short term action plans have completion date of May 2020 However most of action plans are either showing slow progress or still in under tendering.

b. Even completion of short term action plans will not have much impact on PRS of River Karamana.

c. For abatement of pollution of River karamana, SPCB needs to explore implementation of long term plans ASAP or tapping of polluting drains and diverting the tapped waste water to existing STP through existing sewage pumping stations.

d. KSPCB claimed variation of priorities of PRS based on water quality analysis done by KSPCB.PRS Assessment team suggested CPCB to cross verify and report.

e. CPCB may approve the remaining action plans in respect of priority IV to V PRS ASAP.

f. PRS Assessment team suggested to start taking sample from various points on PRS to assess the variation in length of PRS and priority.

g. PRS Assessment team suggested to prepare the road map for Recycle and reuse Treated effluent and disposal of sludge.

h. Sanitation and solid waste management shall be addressed in totality as per the provisions of SWM Rules of 2016. Though, the local authorities are highlighting their efforts on decentralized waste treatment approaches, there are no concrete efforts on proper collection, waste segregation and final disposal of different solid wastes in Thiruvananthapuram city and Mannar town.

(Dr. Deepesh V)
Scientist 'C'
CPCB, RDC, Bengaluru

(Shri A P Singh)
Add Director
NRCD, New Delhi

(Shri Manish Kumar)
Sewerage Expert, PMC
NMCG, New Delhi

ANNEXURE I- LIST OF 21 PRS IN KERALA STATE

S.No	Name of river	Polluted Stretch	Priority	District
1	Karamana	Malekkadu to Thiruvallam	I	Thiruvananthapuram
2	Manimala	Kalloopara to Thondra	IV	Alappuzha
3	Pamba	Mannar to Thakazhy	IV	Pathanamthitta
4	Chitrapuzha	Irumpanam to Karingachira	V	Ernakulam
5	Kadambayar	Manckakadavu to Brahmapuram	IV	Ernakulam
6	Periyar	Alwaye-eloor to Kalamassery	V	Ernakulam
7	Keecheri	Puliyannor to Kechery	IV	Thrissur
8	Karuvannur	Along Karuvannur	V	Thrissur
9	Puzhackal	Olarikkara to Puzhackal	V	Thrissur
10	Bharathapuzha	Along Patambi	IV	Palakkad
11	Bhavani	Along Elachivazhy	V	Palakkad
12	Thirur	Naduvilangadi to Thalakkadathur	V	Malappuram
13	Kadalundy	Along Hajirappally/ Hajiyarpalli	V	Malappuram
14	Kallai	Thekepuram to Arakkinar	V	Kozhikkode
15	Kuttiyady	Along Kuttiyady	V	Kozhikkode
16	Kavvai	Along Kavvai	V	Kannur
17	Kuppam	Thaliparamba to Velichangool	V	Kannur
18	Peruvamba	Along Peruvamba	V	Kannur
19	Ramapuram	Along Ramapuram	V	Kannur
20	Mogral	Along Mogral	V	Kasaragod
21	Uppala	Poyya to Mulinja	V	Kasaragod

ANNEXURE II-

Tab.1 District Wise Compliance Status of Action Plans For 21 Prs

SL. No.	District	River	Priority	Quality of Water	% of compliance	STP/Treatment
1.	Kasargod	Uppala	V	BOD <3 FC<500	90%	Periodical checking and sampling
		Mogral	V	”	90%	”
2	Kannur	Kavvai	V	”	”	”
		Kuppam	V	”	”	”
		Peruvamba	V	”	”	”
		Ramapuram	V	”	”	”
3.	Malappuram	Thirur	V	”	”	STP construction progressing. 1 STP completed
		Kadalundi	V	”	”	Periodical checking and sampling
4.	Palakkad	Bharathapuzha	IV	”	”	STP proposed by Shornoor Municipality
		Bhavani	V	BOD <3 FC>500	80%	Community/Individual Toilets proposed
5.	Thrissur	Kecheri	IV	BOD <3 FC< or =500	85%	STP proposed
		Karuvannur	V	BOD <3 FC<500	”	FSTP & STP proposed
		Puzhakkal	V	”	”	100 KLD & 360 KLD STP proposed
6.	Ernakulam	Chithrapuzha	V	BOD <3 FC>500	30%	STP proposed
		Kadambrayar	IV	”	”	”
		Periyar	V	”	”	”
7.	Kozhikode	Kallayi	V	BOD <3 FC>500	40%	STP proposed
		Kuttiyadi	V	”	”	”
8.	Pathanamthitta	Pamba	IV	BOD <3 FC>500	70%	Minimal Treatment & Disinfection proposed
9.	Alappuzha	Manimala	IV	BOD <3 FC>500	50%	STP proposed
10.	Trivandrum	Karamana	I	BOD <10 FC>500	30% (Short term>50%)	STP proposed, Sewer line

Table.2 Septage & Sewage Treatment plant proposed

Sl.No.	Name of river	Septate & Sewage Treatment plant proposed
1	KARAMANA	Sewage – at Medical College by Kerala Water Authority Long term -Additional STP requirement by Kerala Water Authority
2	MANIMALA	Septage& Sewage - Chengannoor & Thiruvalla municipalities
3	CHITRAPUZHA	STP - Thrikkakkara and Thripunithura municipalities
4	KADAMBAYAR	STP - Thrikkakkara municipality
5	PERIYAR	1. Augmentation and Revamping of existing STP near Adwaitha Ashramam 2. Augmentation and Revamping of existing STP at Aluva Market and to increase the capacity of STP by Aluva Municipality 3. common STP - Kalamassery Municipality and ETP at Municipal Market
6	KEECHERI	Common STP - Wadakkanchery Municipaity
7	KARUVANNUR	FSTP and STP - Irinjalakkuda Municipality
8	PUZHACKAL	1. Sewage - Ramavarmapuram and District Hospital, Thrissur by Thrissur Corporation 2. Constructing decentralised sewerage scheme at Vachikulam in Thrissur Corporation
9	BHARATHAPUZHA	Septage & Sewage Treatment Plant -Pattambi Municipality
10	THIRUR	1. Setting up of STP at Private Bus stand by Tirur Municipality 2. Construction of modular treatment plant in Tirur Payyangadi near Kadayithode drain (TIC school) by Tirur Municipality
11	KALLAI	1. Common STP of(13 MLD) at Kothi bridge and at Avikkal by Kozhikkode Corporation 2. STP at Medical college by Kozhikkode Corporation 3. STP at Kottooli by Kozhikkode Corporation- Hon'ble NGT stayed the project (NGT case no: 215/2016(SZ) 4. Treatment facility for waste water in Central market by Kozhikkode Corporation
12	PERUVAMBA	1. STP - Payyannur Muncipality 2. STP proposed at market place

Table 3: Sewage Treatment Plant newly proposed (Not included in Action Plan)

Sl.No.	Name of District	Local body
1	Palakkad	Shornur Municipality
2	Palakkad	Pudur Panchayath
3	Ernakulam	Thrikkakkara Municipality
4	Ernakulam	Thripunithura Municipality
5	Kottayam	Erumeli Panchayath
6	Alappuzha	Mannar Panchayath
7	Pathanamthitta	Niranam Panchayath

ANNEXURE III- PROGRESS OF ACTION PLANS FOR PRS PRIORITY I-RIVER KARAMANA (MALEKKADU TO THIRUVALLAM)

☎: General: 0471- 2312910, 2318153, 2318154, 2318155 Chairman: 2318150 Member Secretary: 2318151
E-mail: ms.kspcb@gov.in FAX: 0471 – 2318134, 2318152 web: www.keralapcb.nic.in

KERALA STATE POLLUTION CONTROL BOARD
കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
Pattom P.O., Thiruvananthapuram – 695 004
പട്ടം പി.ഒ., തിരുവനന്തപുരം – 695 004

PCB/HO/EE1/NGT/673/2018 Date: 17/04/2019

From
The Member Secretary

To
The Chairman
Central Pollution Control Board
Parivesh Bhavan
East Arjun Nagar
Delhi – 110 032.

Sub: OA No. 673/2018 – Polluted River Stretches Program Report – Reg.

Ref :1. Order dated 20/09/2018 of Hon'ble NGT in OA No. 673/2018
2. This Office letter of even No. dated 13/12/2018
3. Letter No. 14011/1/2019 – WQM-I/5096 dated 10/01/2019
4. This Office letter of even No. Dated 23/02/2019

Sir,

In compliance with the order dated 20/09/2018 of the Hon'ble NGT in OA No. 673/2018, River Rejuvenation Committee, State Level Special Environment Surveillance Task Force and District Level Special Environment Surveillance Task Force were constituted vide Govt. Order No. G.O. (Rt) No. 135/2018/Envt dated 12/12/2018. The revised draft action plan was submitted vide ref. (4) above.

The Action Plan for Priority I "River Karamana" approved by the River rejuvenation Committee on 17/04/2019 is submitted herewith for necessary action.

Yours faithfully

MEMBER SECRETARY

Encl: As above

Copy to;

1. The Principal Secretary
   Environment Department } with C/L
2. CPCB, Bangalore

ACTION PLAN FOR RIVER KARAMANA, KERALA

1. OA 581/2018 Karamana River Pollution

The pollution of River Karamana is primarily from Thiruvananthapuram City sewage discharge. The City has STP of capacity 107 MLD. It is sufficient to cater to the entire City. But only 50 MLD reaches the STP, as the sewage network does not cover all areas of the City. Sewage flows into storm water drains and reaches River Karamana and Akkulam-Veli lake connected to Karamana River. In the short-term, resolving bottlenecks and overflows in the existing sewerage system can convey another 10 MLD into the STP. Action has been initiated and works are in progress.

The pollution load due to sewage entering the River Karamana system through various drains has been determined. The pollution load sorted in order of importance is given in (Table 1).

Table 1 Pollution load in drains

	Drain	**Pollution load BOD in TPD**
1	Kannamoola stream into Akkulam-Veli lake	17.7
2	Ulloor thodu	14
3	Parvathiputhanar	9
4	Pattom thodu	3.8
5	Killiyar river	3.5
6	Amayizhanchal	2.5
7	Killippalam drain	1.9
8	Thekkanakkara canal	1.6
9	Thaliyal drain `	1.0
10	Chadiyara drain	0.8
11	Jagathy drain	0.8
12	Pippinmoodu drain	0.7
13	Amabalathara drain `	0.45
14	Kannettumukku drain	0.3
15	Arattukadavu drain	0.2
16	Thamalam drain	0.2

KSPCB has inspected and assessed pollution loads from 79 units (hospitals, commercial establishments, residential apartment complexes, service stations, markets, industries). Notices issued to 17 units and instructions issued to 15 units.

2. Short term plan

Maintenance and de-bottlenecking of existing sewerage network

No.	Activity	Implementing agency	Cost Rs. Cr.	Source of fund	Time line	Expected outcome
2.1.1	Pumping lines from the terminal pumping stations namely Kuriyathi, Pattoor, Kannammoola and Enchakkal pumping stations are to be connected directly to STP at Muttathara	Kerala Water Authority		Plan scheme	May 2019	Reduced pollution load in Parvathiputhanar
	Kuriyathi pumping line					
2.1.2	Rehabilitation/upgradation of Thaliyal and Aranoor Sewerage Pumphouse by rehabilitation of existing well, construction of new well and grit chamber, installation of new pump sets	Kerala Water Authority	2.37	Plan scheme	May 2020	Reduced pollution load in Thaliyal drain leading to Killiyar
2.1.3	5 MLD sewage treatment plant at Medical College	Kerala Water Authority	19.2		May 2020	Reduced pollution load in Kannamoola Stretch
2.1.4	Installation of adequate pumps in Mudavanmughal and Enchakkal pumping stations	Kerala Water Authority		Plan scheme	March 2020	Reduced pollution load in Parvathiputhanar
2.1.5	DG sets in all lift and pumping stations – Mudavanmughal, Aranoor, Thaliyal, Kuriyathi, Pattoor, Kannammola, Pattom,Murinjapalam and Enchakkal	Kerala Water Authority			May 2020	Reduced pollution load in the drains
2.1.6	Reconnect sewer at Rajaji Nagar, stop outflow of sewage into Amayizhanchan thodu, control stormwater entry into sewer to avoid overflow in Thampanoor area	Kerala Water Authority			Dec 2020	Reduced pollution load in Amayizhanchan thodu stormwater

	Sewage generated in Rajaji Nagar shall be diverted to main sewerline Sewage generated in Thoppil area shall					drain

	be diverted main sewerline					
2.1.7	Discharge of sewage in Parayil kadavu shall be stopped as there is overflow of sewage reaches in houses having sewerage connection and this may lead to discharge of sewage into River Karamana	Kerala Water Authority			Completed	Reduced pollution load of River Karamana
2.1.8	Divert the sewer line from the School compound of Government Karamana High School	Kerala Water Authority	0.42		Awarded	Stop overflow of sewage through manholes in the school compound
2.1.9	**Rehabilitation by laying new lines increasing size of undersized main and reconstruction by dilapidated manholes for the last 3 years** **Total works in progress (45No.)** **Works in tendering (33No.)**	Kerala Water Authority	**11.6** **7.6**		May 2020	
2.1.10	Extension of sewer network wherever technically feasible in new areas of existing blocks In progress(17No.) Tendering(12No.)	Kerala Water Authority	 5.5 19.6		May 2020	
2.1.11	Procurement of sewer cleaning machines and equipment maintenance	Kerala Water Authority	3.17		Mar2020	

Solid Waste Management Action Plan

Sl.No	Activity	Implementing Agency	Unit	No of units	Cost in Rs Cr	Source of fund	Time for completion
2.2.1	Slaughterhouse and poultry waste	Thiruvananthapuram Corporation	Rendering plant	1	9.6	Plan fund	March 2021

Sl.No	Activity	Implementing Agency	Unit	No of units	Cost in Rs Cr	Source of fund	Time for completion
2.2.2	Sanitation facility and treat of waste water in the markets of Pangode, Kumarichanda		Treatment plant Portable aerobic bins	2 4	0.3	Plan Fund	Dec 2019

Sl.No	Activity	Implementing Agency	Unit	No of units	Cost in Rs Cr	Source of fund	Time for completion

2.2.3	Provide facility for the treatment of sewage, sullage and garbage generated in the poonthura slum area between Karamana river and sea	Thiruvananthapuram Corporation	Aero bins at various places(28) **Proposed sites** 1. Moonnathumukku – Purampoku 2. Poonthura – HI Office 3. Cheriyanmuttam – Poonthura 4. Beemapally Compound 5. Tsunami Colony 6. Mother Theresa Colony 7. KumariChantha 8. Poonthura Market 9. Moonnattumukku bridge 10. Ambalathara – Nilama 11. Fishermen Flat – Muttathara 12. Perunalli Market road 13. Poundkadavu old market 14. Market behind Attipra zonal office 15. Tsunami Colony near 110KV tower (Poundkadavu) 16. Near ValiyavilaVeli St. Thomas Church (Poundkadavu) 17. Near Kamalesshwaram HSS 18. Valiyaveetil Residence association 19. Near ArannoorGovt Quarters 20. Kunjalumoodu Junction 21. KumarapuramThamarabhagam (near comfort station) 22. NaerKannammoola Bridge 23. Mannanthala Market 24. Santhi Nagar Residents association 25. AlantharaKattayil 26. Ulloor Market 27. Museum RKV Road 28. New Nalantha Road	28	3.36	Plan Scheme	March 2020

Sl.No	Activity	Implementing Agency	Unit	No of units	Cost in Rs Cr	Source of fund	Time for completion
2.2.4	The discharge of waste water from the surrounding houses to the pond at Jagathy is to be stopped	Thiruvananthapuram Corporation	Pond desilting Issued notices to the household Project is prepared for desilting the pond		0.50	Plan Fund	March 2020
2.2.5	Around 155 Houses in Kurukuvilakom, Kannettumukku shall be provided with septic and treatment system	Thiruvananthapuram Corporation					
2.2.5	Identification of illegal outlets into storm water drains and fine shall be imposed on such units	Thiruvananthapuram Corporation	Fine imposed and prosecution initiated		9.8 laks Fine collected		
2.2.6	Biodegradable waste	Thiruvananthapuram Corporation	Bio-Composter	50,000	9	Plan Scheme	May 2020
2.2.7			Thumboormuzhi aerobic bins	154	11.97		
2.2.8			Community biogas	12	2.1		

2.2.9			Organic Waste Converter	1	0.4		

Sl.No	Activity	Implementing Agency	Unit	No of units	Cost in Rs Cr	Source of fund	Time for completion
2.2.10		Thiruvananthapuram Corporation	Portable biogas	200	0.21		
2.2.11			Portable aero bins	100	1.50		
2.2.12			Ring compost	500	0.13		
2.2.13			Segregation bins	1,00,000	4		
2.2.14	Biodegradable waste	Thiruvananthapuram Corporation	RRC	7	7		
2.2.15			Plastic Recycling unit	1	1.36		
2.2.16			Mobile MRF	5	1.3		
2.2.17			Electronic Weigh bridge	1	0.1		
2.2.18			Solar electrical cart	25	0.5		
2.2.19			Swaps shops	4	0.2		
2.2.20			PET bottle crushing	15	0.05		
2.2.21			Community level unit Napkin destroyer	102	0.35		
2.2.22		Thiruvananthapuram Corporation	Animal Crematorium at Kattela	1	1	Plan fund	May 2020
2.2.23		Thiruvananthapuram Corporation	Urban Gardening		0.5		
2.2.24		Thiruvananthapuram Corporation	UPgradation of present facilities	42	1.86		

2.2.25		Thiruvananthapuram Corporation	Capacity Building & IEC		0.7		

Sl.No	Activity	Implementing Agency	Unit	No of units	Cost in Rs Cr	Source of fund	Time for completion
2.2.26		Thiruvananthapuram Corporation	Viability gap Fund		0.92		
2.2.27	Prevent entry of stormwater into sewer line along with KWA	Thiruvananthapuram Corporation	KWA is authorized to prepare and implement proper sewerage lines under Amrut scheme		154	AMRUT	May 2020
2.2.28	Take steps to prevent the solid wastes in sewer line as reported by KWA	Thiruvananthapuram Corporation	Squad and Fines Special squad is formed at corporation level. Health Inspectors are authorized for regularly monitoring and preventing the waste discharge				May 2020

Monitoring

	Activity	Implementing agency	Cost	Source of fund	Time line	Remarks
2.3.1	River water quality monitoring - Killiyar, Karamana, Parvathiputhanar, Akkulam-Veli lake	Kerala State Pollution Control Board	Rs. 3000 per sample	National Water Quality Monitoring Programme (NWMP), CPCB fund	Ongoing; monthly frequency	Monitoring of water quality

2.3.2	Storm drains monitoring - Amayizhanchan thodu, Ulloorthodu, Pattom thodu, Kannamoola thodu,	Kerala State Pollution Control Board	Rs. 3000 per sample	State Water Monitoring Programme, KSPCB fund (SWMP),	Ongoing Seasonal monitoring – pre-monsoon,	Notice issued to TVM Corporation

	Thekkanakkara canal			KSPCB fund	monsoon, post-monsoon	
2.3.3	Inspection and effluent quality monitoring of the flats, industrial units, service stations, hospitals, hotels etc in Thiruvananthapuram Corporation area	Kerala State Pollution Control Board	As per sampling charge	KSPCB funds,	Ongoing Interval: Red – 1 month. Orange – 3 m. Green – 6 m.	Monitoring of establishments, service stations, flats, industrial units

3. Long term Plan

Sewerage network

	Long term measures proposed	Implementing agency	Amount Required (Rs.in Crore)	Time line	Remarks
3.1.1	Extension of sewerage system to Block F to G coastal belt	Kerala Water Authority	200	Three years	DPR Preparation in 6 months (through consultants)
3.1.2	Extension of sewerage system to Block H to R	Kerala Water Authority	700		
3.1.3	Extension of sewerage system to Newly added areas of corporation viz,	Kerala Water Authority	300		
3.1.4	Providing sewerage system in Block A to E	Kerala Water Authority	100		
3.1.5	Rehabilitation of existing network and pump house in block A to E	Kerala Water Authority	100		
3.1.6	Procurements of equipments for maintenance sewerage system	Kerala Water Authority	10		

3.1.7	Additional STP requirement	Kerala Water Authority	60		

3.1.8	Total Amount required	Kerala Water Authority	1470 Crore		

Solid waste management

	Long term measures proposed by Thiruvananthapuram	Implementing agency	Amount Required (Rs.in Crore)	Time line	Remarks
3.2.1	Acquire 58 acres of land and rehabilitate 8150 families from the banks of River	Thiruvananthapuram Corporation	600	5 years	

Desilting and developement

No.	Activity	Implementing agency	Amount allotted Rs. crore	Department	Timeline
3.3.1	Development package for Parvathy Puthanar	Irrigation department	150	Irrigation department Included in KIFB by KWIL includes cleaning of canal	3 years
3.3.2	Desilting and development of Amayizhanchan Thodu	Irrigation Department	25	Irrigation department	1.5 years
3.3.3	Improvements to Thekkenekara canal and desiliting-	Irrigation Department	5 (under preparation)	Irrigation department	1 year
3.3.4	Karimadam tank improvements,desilting sheet piling/under preparation and providing fencing	Irrigation Department	4.5 (under preparation)	Irrigation department	1.5 years
3.3.5	Development of Karamana basin	Irrigation Department	6.77 crores/under preparation	Irrigation department	1.5 years

4. Recommendations by Kerala State Pollution Control Board

Activities for compliance with Solid Waste Management Rules, 2016; Bio-medical Waste Management Rules, 2016

<table>
<tr><td>Activity</td><td colspan="2">Responsibility</td></tr>
<tr><td rowspan="2">Door-to-door collectionion and transportation of MSW</td><td>Thiruvananthapuram Corporation</td><td rowspan="8">Proposed Kerala Solid Waste Management Authority</td></tr>
<tr><td>Local bodies of Census Town</td></tr>
<tr><td rowspan="3">Modern Solid Waste Treatment Plant</td><td>Thiruvananthapuram Corporation</td></tr>
<tr><td>Local bodies of Census Town</td></tr>
<tr><td></td></tr>
<tr><td rowspan="3">Rendering plant for slaughter house/poultry wastes</td><td>Thiruvananthapuram Corporation</td></tr>
<tr><td>Local bodies of Census Towns</td></tr>
<tr><td></td></tr>
<tr><td>Common bio-medical waste treatment facility</td><td>Health Department</td><td>Proposed Kerala Solid Waste Management Authority</td></tr>
<tr><td rowspan="3">Regional sanitary landfill site identification and land acquisition

Establishment and operation of Regional Sanitary Landfills</td><td>District Collector</td><td></td></tr>
<tr><td>Thiruvananthapuram Corporation</td><td rowspan="2">Proposed Kerala State Waste Management Authority</td></tr>
<tr><td></td></tr>
</table>

Tour report for assessment of polluted river stretches in Meghalaya

A. Introduction

1. The National Green Tribunal, Principal Bench at New Delhi, vide order dated 6th December, 2019 in OA No.673/2018 in the matter of News item published in 'The Hindu' authored by Shri Jacob Koshy titled 'More river stretches are now critically polluted: CPCB' has given certain directions as under:-

(i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28th August, 2019 in OA No.593/2017 by 31st March, 2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide order dated 22nd August, 2019 in the case of river Ganga i.e. Rs.5 lakhs per month per drain, for default in in-situ remediation and Rs.5 lakhs per STP for default in commencement of setting up of the STP.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the order dated 8th April, 2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22nd August, 2019 in the case of river Ganga i.e. Rs.10 lakhs per month per STP.

(iii) An institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

(iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

(v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

(vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

(vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

(viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

(ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the action plans prepared by the States which may start forthwith, if not already started.

(x) Rivers which have been identified as clean may be maintained.

2. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 22nd January, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. For the State of Meghalaya, composition of the team was as below:-

(i) Shri Saumyasib Mukhopadhyay, Senior Environmental Specialist, NMCG
(ii) Dr. P. N. Rymbai, Scientist 'B', NRCD
(iii) Dr.Shantanu Dutta, Additional Director, Shillong, (Representative from CPCB)

The present report provides a summary of the filed visit and discussion undertaken during the visit.

B. Background

3. Out of the identified 351 polluted river stretches reported, 7 such stretches are reported in Meghalaya. However, only 2 such stretches namely, River Umkhrah and River Umshyrpi are falling under Priority-I. The detail of the polluted river stretches in Meghalaya is shown in Table-1. The above team visited Meghalaya during 04-05thMarch, 2020 to ascertain the ground reality and to interact with the stakeholders responsible for sewage treatment facilities to be/being created for the said polluted river stretches. The team visited various points on Rivers Umkhrah and Umshyrpi.

Table1: Polluted River Stretches in Meghalaya:

Sl.No.	Name of polluted stretches with pollution categorization	No. of such stretches	Name of river/stretch
1	No of Polluted stretched in Category-I	2	1.Umkhrah River 2.Umshyrpi River
2	No of Polluted stretched in Category-IV	3	1. Kyrhuhkhla 2. Nongbah 3. Umtrew
3	No of Polluted stretched in Category-V	2	1. Lukha 2. Myntdu
	Total	7	

The team took tour in Shillong and due to ongoing curfew in Shillong travelling to other areas was prohibited. However, all the drains discharging to the polluted stretches of River Umshyrpy and Umkhrah (falling under Priority -1) was done with officials of PHED, Urban Affairs, Pollution Control Board and others so as to have a detail glimpse of the proposed treatment of waste water, solid waste and industrial waste water.

The photographs taken during the visit are placed at **Annexure – I.** A meeting with the stakeholders was also held in the Meghalaya State Pollution Control Board (MSPCB), Shillong under the Chairmanship of Chairman, MSPCB, and Shillong on 4th of March 2020.

As per the directions of NGT and also works assigned to the teams, discussions with the respective local bodies were focused on assessment of sewerage infrastructure (existing/futuristic) vis-à-vis the action plans submitted by Meghalaya State Pollution Control Board(MSPCB) to the Central Pollution Control Board (CPCB). During the discussion it was learnt that Shillong City is under the jurisdiction of three Urban Local Bodies viz. **Shillong Municipal Board**, **Shillong Cantonment Board** and **Shillong Urban Agglomeration under Khasi Hills Autonomous District (KHADC)**. It is learnt that the department of Urban Affairs of Shillong is responsible only for the sewage management within the Shillong Municipal Board area. For the rest of the areas, plans are taken up either by Shillong Cantonment Board or by KHADC.

It was informed that action plans for polluted river stretches under Priority-I (2 nos) were approved by CPCB in May/June, 2019. In respect of polluted river stretches under Priority-IV (3 nos), Priority V (2 nos), actions plans although have been submitted by MPCB but yet to be approved by CPCB.

Stretch wise details of Priority I are given at **Annexure-II**, which includes information on towns/villages located thereon, sewage generation, treatment available and the gap, proposed treatment, industrial activities contributing to pollution in the said stretch, and the present implementation status vis-à-vis the directions of NGT. A copy of the minutes of meeting is enclosed in file **Annexure-III.**

During the meeting all stakeholders were requested to provide the latest status on the implementation of Action Plan approved by the CPCB, however, it appears that still lot of things needs to be done to address the sewage treatment in the Shillong.

As per the Monthly Progress Report (MPR) submitted by Govt. of Meghalaya the list of polluted stretches has been proposed to be modified as per Table 2.

Table2: River List of Polluted Stretches

Priority River Stretch	Polluted Stretches		Name of Polluted rivers	Corresponding Towns
	As per CPCB Report	Revised list as per the recent monitoring (MPCB JAN-Nov 2019)		
Priority-I	2	2	1.Umkhrah River 2.Umshyrpi River	Shillong
Priority-II	-	-		
Priority-III	-	-		
Priority IV	3	1	Nongbah river	Scattered settlements
Priority V	2	4	1. Kyrhuhkhla 2. Umtrew 3. Lukha 4. Myntdu	Coal mine area and villages. Byrnihat (bioremediation) Coal mine and villages Jowai (7 STP)
Total	7	7		

3. Observations and recommendations:

i. From the pollution stretches concerned in Meghalaya, Shillong the major town of concern situated along the two Priority Rivers namely Umkhrah and Umshyrpi. The other important towns are Jowai (along river Myntdu Priority V), and Byrnihat (along river Umtrew in Priority V). The other polluted stretch i.e. flows through coal mines and scattered village population.

(a) The total present catchment area population of these rivers is about 400000 (census 2011) with an estimated sewage generation of 40 MLD. No treatment capacity is available at this moment. The major town wise break up is given in table3 below:

Table3: Sewage Generation vis-à-vis gap assessment for the priority towns.

S.No	Major Towns	Priority	Contributing Population (2011)	Sewage Generation (MLD)	Existing Capacity (MLD)	GAP (MLD)	Proposed (STP and MLD)
1	Shillong	I (Umkhrah)	354749	38.31	0	38.31	3.7 MLD (3 STP)
2	Jowai	V (Myntdu)	28430	3.07	0	3.07	3 MLD (7 DSTPs) , proposal being sent to NRCD
Rest of the areas are scattered population and passes through coal mines							

ii. The waste management programme in Shillong largely dependent upon the decision at the local community levels and KHADC and interdepartmental communication.

iii. The DPR preparation work is going on since last 5 years. Earlier, M/s Mott MacDonald was hired for prepared a sewerage and STP scheme in Shillong which was prepared as detailed integrated sewerage network and STP scheme. But, due to land issues and possible non feasibility of laying of sewerage line in Shillong the scheme was cancelled. It was proposed to develop a 45 MLD scheme and 60 MLD till 2040.

iv. Later on for 2 specific sewage zones (Zone 1a2 and Zone 1a3) M/s WAPCOS has been hired as a Design Checking cum Project Management Consultant. Due to non-availability of land for SPS and STP, nalla tapping at strategic locations and FSSM has been proposed. They have came up with installation of 4 MLD of STP (through 3 STPs) and 1 FSST with 300 KLD. Zone Maps of Shillong is given in Figure1.

Table4: Sewage Generation in Shillong and gap assessment within it

S.No	Name of ULB	Sewage Generation	GAP in Treatment (MLD)	Proposed STP
1	Shillong Municipal Board	19.34	19.34	4.3 (3 DSTPs of 4 MLD) and 1 FSSM of 300 KLD
2	Shillong Cantonment Board	1.61	1.61	Being proposed
3	Shillong Urban Agglomeration under KHADC	26.95	29.95	-

v. So basically for the areas within the Shillong Municipal board areas where 3 Decentralized STPs are being planned (2 along Umkhrah River and 1 along Umshyrpi river through I&D and STP scheme). In addition, a 300 KLD Faecal Sludge and Septage Management is being planned. However, major areas falls beyond the Shillong Municipal Board areas for which concrete plan to be developed.

vi. Drain flow: There are about 20 drains flowing to Umkhrah River having a dry weather flow of around 45 MLD. Whereas in Umshyrpy river around 6-10 MLD flow for nearly 10 outfalls is discharging. Hence the STP proposed appears to be not be sufficient. During the visit, it was observed that there are 20 outfalls in Umkhrah River and only 4 of them are proposed to be tapped for treatment. The State Government was advised to see that all outfalls are tapped for abatement of pollution in Umkhrah River. Whereas, in the case of Umshyrpi River, 12 outfalls are observed and none of them are tapped for treatment, instead, a 750 KLD STP is proposed to be set up at the downstream of the main river itself at Harrison Bridge. The consultant concerned was advised to see that there is no error in the flow measurement at Umshyrpi River before finalizing on the capacity of STP proposed.

vii. **STP along Umshirpy:** A 700 KLD STP is proposed just along Umshuirpy River whereas the flow in river Umshyrpy is not less than 10 MLD. The reasons for proposing such lower capacity of STP has been mainly the land constraint as been told by the Urban Affairs and their consultant M/s WAPCOS. Even for the waste generation in Shillong Municipal Board and the capacity proposed is appears very much under designed.

viii. The 300 KLD FSSM scheme has been proposed as a short term measures in association with the STP schemes which will give till a detailed sewage management is not in place. This FSSM scheme would cover all the Shillong areas (i.e. Shillong Municipal Board and Shillong Urban Agglomeration). However, tendering of the schemes and its implementation is required to be completed at the earliest. 3 cesspool are available and 26 more cesspool vehicles will be procured. The proposal consists of:

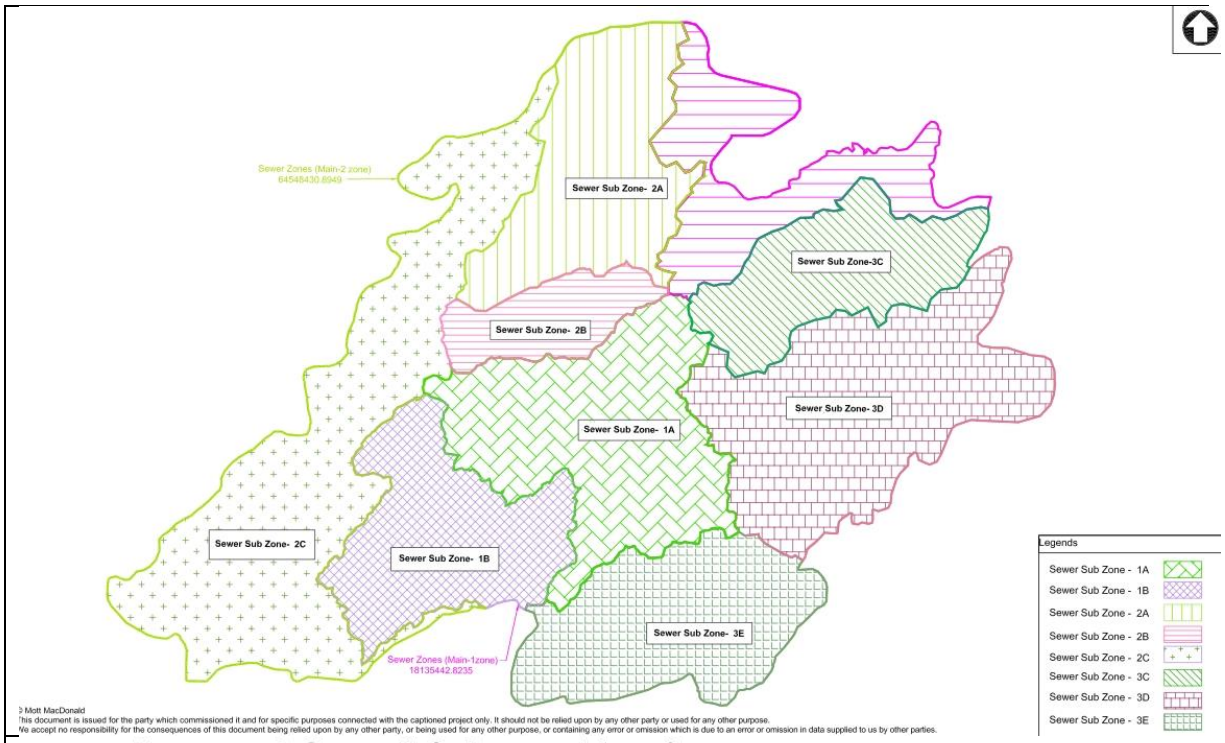
- Number of users – **4,56,441 – Shillong Urban Agglomeration**
- Septage extraction ratio – 50%
- Septage generation rate – 30 g/person/day
- Number of Households – 91,288
- Frequency of desludging - once every 3 years
- Nos. of houses to be desludged per annum – 30,429
- Average sludge volume per house – 3 m^3
- Number of trips per day - 3
- Volume of sludge collected per day – 300m^3/day
- Number of cesspool vehicles of Collection of Septage from household – 26 (proposed) and 3 existing. Total 29.

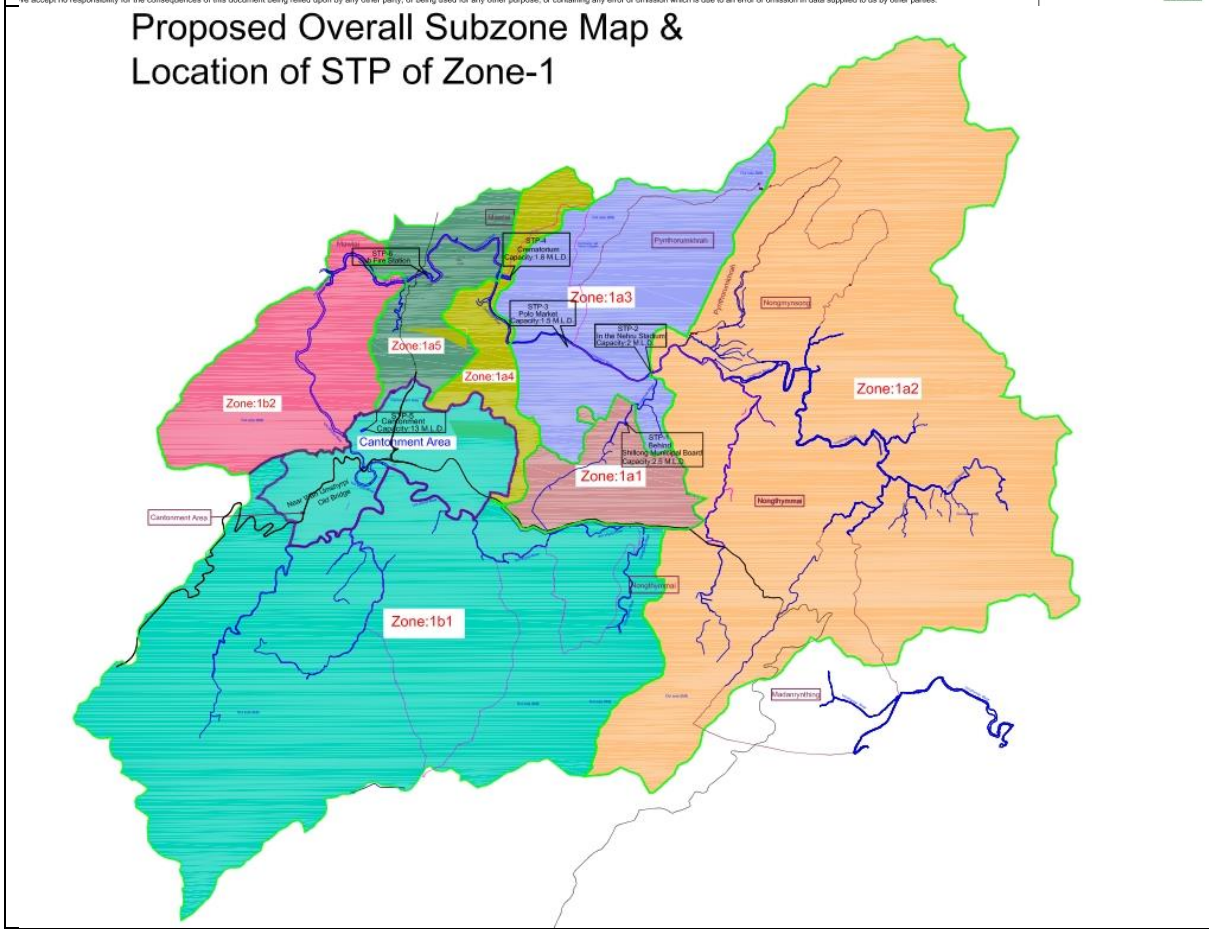
The septage characteristics is given below::

No.	Description	Unit	Value
1	Capacity	m3/day	300
2	Average flow-rate	m3/hr	12.5

No.	Parameters	Unit	Value
1	pH	-	4 – 10
2	Chemical Oxygen Demand (COD)	mg/l	2,000
3	Biochemical Oxygen Demand (BOD)	mg/l	1,000
4	Total Suspended Solids (TSS)	mg/l	1,200

5	Total Nitrogen (TP)	mg/l	180
6	Total Phosphorus (TP)	mg/l	50





With regard to the Myntdu River which is of priority-V at Jowai, West Jaintia Hills District, the Jowai Municipal Board has prepared DPR which however needs to be revised and sent to Urban Affairs Department for approval. As per the DPR, 10 outfalls have been identified and 7 STPs have been proposed to be installed at the total cost of around Rs. 30 crore which includes operation and maintenance for 5 years. The proposal will be sent to NRCD for financial assistance.

ix. **Bioremediation:** For Bioremediation, the department of Urban Affairs has tied up with M/s Trinity Impex International for preparation of DPR and it will be completed by 2nd week of March 2020. It is being done at this moment for the 2 major drains (due to fund constraint) and later it will be scaled up for other rivers as well. For other polluted river stretches which are located in rural areas with scattered population only bioremediation was proposed and the DPR is expected to be completed by the month of May, 2020.

x. **Solid Waste Management:** It has been informed that the Shillong Municipal Board, Shillong Cantonment Board and Traditional Institutions collect solid wastes daily on a door-to-door basis so as to minimize littering. Segregation of municipal solid waste is adopted only in areas under the jurisdiction of Shillong Municipal Board and Cantonment board for the purpose of mini composting of bio-degradable waste carried out by self-help groups within the premises of existing disposal site. A 170 TDP Compost Plant is under construction at **Marten, Shillong** which is proposed to be commissioned by 31st March, 2020. A sanitary landfill has been developed for the purpose of disposal of inert waste. During the site visits it was observed that the State Government has constructed a good height of jali fencing along the bank of some stretch of rivers Umkhrah and Umshyrpi so as to prevent the dumping of wastes into the rivers. The details of present capacity vis-a vis gap assessment for the solid waste management is given in table 5.

Table 5: Solid Waste generation and Treatment Facility

River	ULB	Solid Waste Generation (TPD)	Solid Waste Treatment (TPD)	Gap in Treatment (TPD)
Umkhrah	Shillong Municipal Board, Shillong Cantonment Board & Traditional Institutions	164.81	8.72 TPD (170 TPD compost plant will be commissioned by 31st March 2020)	156.09
Umshyrpi	Shillong Municipal Board, Shillong Cantonment Board & Traditional Institutions	50.13		50.13
	TOTAL	214.94	8.72	206.22

xi. Solid Waste Management by KHADC: A project has been taken up by the KHADC as a part of the project the council has engaged Master rolls duly recommended by the Dorbar Shhnong on contractual basis at Rs 5000/- per month each to clean up the river. The cleaning up of the river was undertaken by the Water Resource Department started on 7th August 2017 along the stretch between Umkaliar to Mawlai where the council has engaged 4 assistant supervisors and 8 master rolls. During the cleaning 14 truckloads of waste are collected from the river and are sent to the solid waste disposal facility at Marten. The council has incurred a Cost of **Rs 10,90,500** for the cleaning of river. Details enclosed in **Annexure-IV.**

xii. The management and handling of bio-medical waste by the Health Care facilities located in Shillong are in accordance with the criteria laid down under the Bio-Medical Waste Management Rules, 2016. At present the Common Bio-Medical Waste Treatment Facility (CBWTF) is not in operation and hence deep burial as a temporary measurement is being carried out as recommended by CPCB for final disposal until the CBTWF is in operation. The Shillong Municipal Board informed that a proposal has been sent to MoEF&CC for up-gradation of existing CBWTF but the proposal was rejected as the Ministry informed that there is no sanction for up-gradation but only for a new CBWTF. In this regard, a proposal for setting up of a new CBWTF is under preparation which will be forwarded to MoEF&CC at the earliest. Shillong Municipal Board informed that as an interim arrangement, it has tie up with a firm in Assam for treatment of the waste from the State for which authorization of transport of the wastes has been received from MSPCB, however, the firm in Assam has yet to receive authorization from the Pollution Control Board, Assam.

xiii. MSPCB informed that industries including hotels, restaurants, automobile servicing units and hospitals located in the catchment of the two rivers (Umkhrah and Umshirpi) are regulated under the consent management of the Board. These industries are having onsite ETPs for treatment of trade effluent except for one hospital wherein the ETP is still under construction. These industries are regularly monitored by the Board.

xiv. The District Forest Officer (DFO), Social Forestry mentioned that a proposal for tree plantation was prepared by the Forest Department along the bank of Umkhrah and Umshyrpi rivers. An estimated cost of Rs. 28.35 lakh was proposed for plantation along the Umkhrah River. However, there has been an issue with land availability for plantation along the Umshyrpi river as a portion of land identified for the project falls under the Defense which stated that the particular portion of land has already been given to NHIDC and PHED for widening of road and lying of pipelines respectively. However, these plantation activities are kind of random plantation (based on land availability) does not much related to catchment treatment.

xv. The State Government was also advised to speed up the implementation of In-situ remediation of drains and to complete well within 31st March, 2020 so that it is in compliance with the NGT order.

(Shri Saumyasib Mukhopadhyay)	**(Dr. P.N. Rymbai)**	**(Dr.Shantanu Dutta)**
NMCG	**NRCD**	**CPCB**

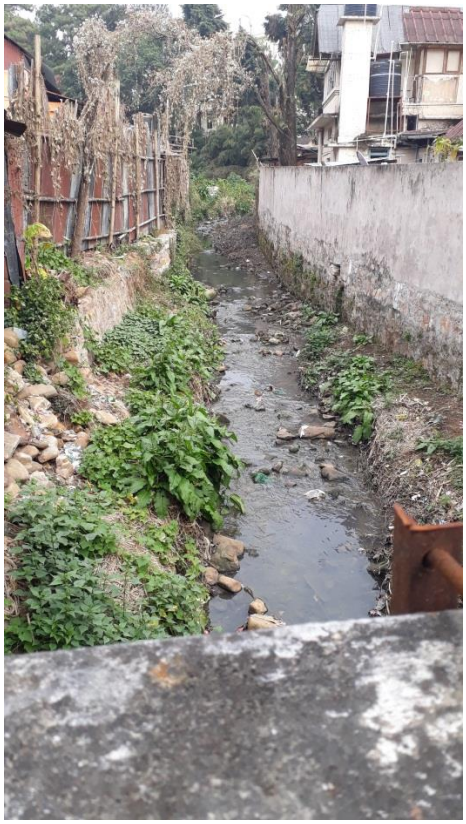


Fig: Snapshots of main channel and some outfalls at Umkhrah and Umshyrpi rivers in Shillong.

Fig: Construction of Jali fence at some stretches along the river banks for preventing dumping of wastes into Rivers Umkhrah and Umshyrpi

Annexure-II

List of Polluted River Stretches

- Total number of Stretch:- 7
- Based on water quality monitoring results during the period from January-December 2019, MSPCB informed that priority status of the said polluted river stretches has changed from that reported by CPCB (in 2016 sampling). In some of the cases, water quality was reportedly improved as per the stretch wise details given as under:-

Priority	Polluted stretches	
	As per CPCB Report (Sep-2018)	Revised list as per recent Monitoring (SPCB-Jan-Dec 2019)
Priority-I	02	02
Priority-II	--	--
Priority-III	--	--
Priority-IV	03	01
Priority-V	02	04
Total	07	07

Status of Sewage Generation and treatment In Shillong,Meghalaya

ULBs	No of ULBs	STP Capacity Required (MLD)	STP Capacity Existing (MLD)	STP Capacity Ongoing (MLD)	STP Capacity (Existing + Ongoing) (MLD)	GAP IN STP Capacity (MLD)
Shillong municipal Board	1	19.34	-	-	-	19.34
Shillong cantonment Board	1	1.61	-	-	-	1.61
KHADC(Traditional Institutions)	1	26.95	-	-	-	26.95

Polluted River Stretch (Priority I) Gap Analysis in Sewage Generation &Treatment in Shillong, Meghalaya

ULB	Numbers	Sewage Generation MLD	Sewage Treatment MLD	Gap in Treatment MLD	Capacity of Proposed STP MLD
Shillong Municipal Boards,	4 (Proposed STPs including Septage Management)	19.34	-	19.34	4.05 (STPs including Septage Management)
Shillong cantonment board	Nil	1.61	-	1.61	To be proposed (Annexure I)
Shillong urban agglomeration under KHADC	Nil	26.95	-	26.95	No proposal

List of Polluted River Stretch under Priority –I in Shillong, Meghalaya

Sr. No.	River Name	River Stretch	Length of Stretch as per RAP (KM)	As per CPCB report		As per SPCB report		Number of Town	Sewage Generation (MLD)	Sewage Treatment Plant Capacity (MLD)	GAP in Treatment (MLD)	Proposed Capacity (MLD)
				BOD Range (mg/lit)	Priority	BOD Range (mg/L)	Priority					
1	Umkhrah	Demthring to MawlaiMawpdang	10	30-90.2	1	10.5-56.0	1	1	33.52	-	33.52	3.05
2	Umshyrpi	Dhankheti to Umshyrpi Bridge	5	38.5-95.0	1	13.4-44.0	1	1	14.37	-	14.37	1.00
	TOTAL								47.89		47.89	4.05

GAP Assessment in Solid Waste Treatment for Shillong, Meghalaya

River	ULB	Solid Waste Generation (TPD)	Solid Waste Treatment (TPD)	Gap in Treatment (TPD)
Umkhrah	Shillong Municipal Board, Shillong Cantonment Board & Traditional Institutions	164.81	8.72 TPD (170 TPD compost plant will be commissioned by 31st March 2020)	156.09
Umshyrpi	Shillong Municipal Board, Shillong Cantonment Board & Traditional Institutions	50.13		50.13
	TOTAL	214.94	8.72	206.22

Annexure-III (Minutes of Meeting at Meghalaya)

Minutes of the Meeting on the Assessment of the Implementation of Action Plans for Rejuvenations of Polluted River Stretches in the state of Meghalaya held Between the Officials of NMCG & NRCD, Ministry of Jal Shakti, New Delhi with all Stakeholders / Implementing Agencies held on 5th March 2020 in the Conference Hall of the Meghalaya State Pollution Control Board (MSPCB), Shillong

A Meeting of all the stakeholders on Assessment of Polluted River Stretches of 6 States with regard to the Hon'ble NGT matter OA No. 673/2018 was held on the 5th March 2020 in the Conference Room of the Meghalaya State Pollution Control Board, Shillong. The officials present in the Meeting are as indicated below (list enclosed).

1. Shri C.P. Marak, IFS (Retd), Chairman, Meghalaya State Pollution Control Board, Shillong
2. Dr. Shantanu Dutta, Addl. Director, CPCB, Regional Directorate North East, Shillong
3. Shri Saumyarib Muukpadhyay, Sr. Environment Specialist, NMCG, Ministry of Jal Shakti
4. Dr. P.N. Rymbai, Sc 'B', NRCD, Ministry of Jal Shakti
5. Shri B. Lato, Jt. Director, Urban Affairs, Meghalaya, Shillong
6. Smti A.D. Blah, Addl. Chief Engineer, Water Resource Deptt., Meghalaya, Shillong
7. Shri M.L. Lawai, EE, Water Resource Deptt., Meghalaya, Shillong
8. Smti M.J.A. Sangma, DFO, Social Forestry, East Khasi Hills
9. Shri C. Marngar, SE, PHED, Meghalaya, Shillong
10. Shri F.B. Chyne, EE, Shillong Municipal Board
11. Shri J.B. Laloo, JE, Shillong Municipal Board
12. Shri M. Kharkongor, District Urban Planner, Shillong
13. Shri R. Sohkhlet, District Urban Planner, Jowai, West Jaintia Hills District
14. Shri S. Amse, EO, Jowai Municipal Board
15. Shri R. Pde, S.I., Jowai Municipal Board
16. Shri H. Syiem, Deputy Secretary, KHADC, Shillong
17. Shri A. Basaiawmoit, Under Secretary, KHADC, Shillong
18. A.K. Borah, TLE, WAPCOS Ltd.
19. Shri H. Wagh, MLE, WAPCOS Ltd.
20. Shri J.H. Nengnong, Member Secretary, Meghalaya State Pollution Control Board
21. Dr (Miss) B. Nongbri, Sr. Scientist, Meghalaya State Pollution Control Board
22. Smti J. Sawian, Scientist 'C' Meghalaya State Pollution Control Board
23. Smti D. Syiemlieh, Environmental Engineer, Meghalaya State Pollution Control Board
24. Shri S. Syiem, AEE, Meghalaya State Pollution Control Board
25. Shri J.F. Lamurong, AEE, Meghalaya State Pollution Control Board
26. Shri Y.F.H Laloo, AEE, Meghalaya State Pollution Control Board
27. Shri M.S. Tiewsoh, AEE, Meghalaya State Pollution Control Board

The meeting was chaired by Shri C.P. Marak, IFS (Retd), Chairman, Meghalaya State Pollution Control Board.

At the outset, the Chairman welcomed all the officials present in the meeting and highlighted that the meeting was called to discuss on the water sector of the State which has attracted the attention of the Government of India and NGT. He also stressed on the urgency and gravity of the situation for which the issues need to be tackled by different Govt. Departments. The following are the point of deliberation:

1. **Presentation of Action Plans for polluted river stretches under priority I, IV and V.**

   It was informed that the priority I includes the Umkhrah River and Umshyrpi in Shillong city while the priority IV includes Nonbah River in Nongstoin, Umtrew River in Byrnihat, Ri-Bhoi District and Kyrhuhkhla River in Khliehriat, East Jaintia Hills District. Priority V includes the Myntdu River in Jowai, West Jaintia Hills and Lukha River in East Jaintia Hills District.

   For Priority-I rivers, the Board's official informed that as per the NGT Order, the river water should be brought up to bathing quality but however, the Plan is to bring the water quality of priority-I up to irrigation quality.

After the presentation the following points were discussed:

- Sewage Management

  The Sr. Environment Specialist, NMCG, Ministry of Jal Shakti advised that a DPR is to be approved and the tendering process is to be completed at the earliest and the construction of the Sewage Treatment Plants for the generated sewage within the jurisdiction of Shillong Municipal Board should be started by July 2020.

  The bio-remediation treatment should commence by 30th March 2020 as per NGT Order.

  The Dy. Director, Urban Affairs informed that for bio-remediation, the Department has tied up with Trinity Impex international for preparation of DPR and it will be completed by 2nd week of March 2020. It was further informed that due to fund constraints the bio-remediation treatment process will be carried out initially for two major drains.

  With regard to the Myntdu River, the District Urban Planner, Jowai informed that the Jowai Municipal Board has prepared DPR which however needs to be revised and sent to the Urban Affairs Department for approval. As per the DPR, 10 outfalls have been identified and 7 ETPs have been proposed to be installed at the total cost of around Rs. 30 crores which includes operation and maintenance for 5 years. The proposal will be sent to NRCD for financial assistance.

  For other polluted river stretches which are located in rural areas with scattered population only bio-remediation was proposed and the DPR is expected to be completed by the month of May.

It was further informed that construction of septic tank latrines with soak pits has been sanctioned under Swachh Bharat mission in the villages within the catchment of the polluted river stretches of priority IV and V.

For faecal sludge management, the Shillong Municipal Board informed that 3 cesspool vehicles are in operation.

It was further informed that additional 26 nos. of vehicles will be procured for disposal of faecal sludge with a proper routine plan for movement of the vehicles.

The NMCG officials advice that the Water Resources Deptt. should carry out the flow measurement during the lean period.

- Solid Waste Management

  The Shillong Municipal Board, Shillong Cantonment Board and Traditional Institutions collects solid wastes on a daily basis. Door-to-door collection has been carried so as to minimize littering.

  Segregation of municipal solid waste is adopted only in areas under the jurisdiction of Shillong Municipal Board and Cantonment Board for the purpose of mini composting of bio-degradable waste carried out by self help groups within the premises of existing disposal site.

  A 170 TPD Compost Plant is under Construction at Marten, Shillong which is proposed to be commissioned by 31th March 2020.

  A scientific sanitary landfill has been developed for the purpose of disposal of inert waste.

- Bio-medical Waste Management

  The management and handling of bio-medical waste by the Health Care Facilities located in Shillong are in accordance with the criteria laid down under the Bio-Medical Waste Management Rules, 2016. At present the Common Bio-medical Waste Treatment Facility (CBWTF) is not in operation and hence deep burial as a temporary measurement is being carried out as recommended by CPCB for final disposal until the CBWTF is in operation.

  Shillong Municipal Board informed that as an interim arrangement, the Shillong Municipal Board has tie up with a firm in Assam for treatment of the waste from the State for which authorization for transport of the wastes has been received from the MSPCB however, the firm in Assam has yet to receive Authorization from the Pollution Control Board, Assam.

  The Meeting decided that the SMB can write to the Regional Director, CPCB, Shillong in the matter and the Addl. Director, CPCB, Regional Directorate North East, Shillong assured that the CPCB will take up the matter with the Pollution Control Board, Assam.

  Further, Shillong Municipal Board informed that a proposal has been sent to MoEF & CC for up-gradation of the exiting CBWTF but the proposal was rejected as the Ministry informed that there is no sanction for up-gradation but only for a new CBWTF. A proposal for setting up of a new CBWTF is under preparation which will be forwarded to MoEF & CC at the earliest.

- Trade effluent

The Meghalaya State Pollution Control Board informed that the industries located in the catchment of the two rivers are regulated under consent management of the Board. It was also informed that these industries includes hotels, restaurants, automobile servicing units and hospitals and these industries are having onsite ETPs for treatment of trade effluent except for 1 hospital wherein the ETP is still under construction. These industries are regularly monitored by the Board.

2. **Presentation by the WAPCOS Ltd., Consultant of Urban Affairs Deptt.**

A presentation by WAPCOS Ltd. was made on the proposed STPs within the jurisdiction of Shillong Municipal Board.

The Sr. Environment Specialist, NMCG, Ministry of Jal Shakti suggested that a Shit Flow Diagram for offsite and onsite treatment should be prepared. The official further advised that WAPCOS Ltd. should share the population data of Shillong Municipal Board, Shillong Cantonment Board, Shillong Agglomeration etc to estimate sewage generation as per the format to be submitted to NMCG.

In reply to a query made by the Sr. Environment Specialist, NMCG, Ministry of Jal Shakti, the Chairman informed that for areas outside the Municipality, the duty of waste management falls under the jurisdiction of the District Councils under Sixth Schedule. And the Cantonment areas in Shillong falls under the jurisdiction of the Shillong Cantonment board.

The representative of KHADC informed that the Council has prepared by-laws in this regard which are still pending approval due to the absence of the Executive Council.

The representatives of Shillong Cantonment Board were not present during the meeting and hence information regarding the status of sewage management under its jurisdiction could not be obtained.

The Meeting urged upon the KHADC that it should organize public awareness and hold meetings with the community with guidance of the Meghalaya State Pollution Control Board and should take the Rangbah Shnong (Traditional Institutions) into confidence in the matter of sewage management.

It was informed that the PHE Deptt. has carried out Feasibility Study on the Nonbah River. The Meeting decided that the Report on the Study is to be submitted by the PHE Deptt.

The Sr. Environment Specialist, NMCG, Ministry of Jal Shakti advised that the operation and maintenance should be projected for 10 years.

The Meeting decided that the Jowai Municipal Board should expedite revision of the DPR and send for funding.

Dr. P.N. Rymbai, Sc 'B', NRCD, Ministry of Jal Shakti informed that the National River Conservation Department, Ministry of Jal Shakti may be approached for funding for sewage management, plantation, awareness programme, eco friendly crematorium and study projects on rivers of Meghalaya.

The DFO, Social Forestry gave a presentation on the proposal of tree plantation to be taken up by the Forest Department along the bank of the Umkhrah and Umshyrpi rivers. She informed that plantation along the Umkhrah River will cost around Rs. 28.35 lakhs. However, plantation along the Umshyrpi River is not possible since land is not available though the matter has been taken up with the CEO, Cantonment and the Ministry of Defence since most of the land falls under the Defence. She informed that the Ministry of Defence has informed that land cannot be spared since some portion has already been given to NHIDC for widening of road and PHED for lying of pipelines.

The Meeting decided that the DFO, Social Forestry to send the detailed proposal to the Ministry of Jal Shakti for funding.

The Meeting ended with a vote of thanks to and from the Chair.

C.P. MARAK, IFS (Retd)
CHAIRMAN
Meghalaya State Pollution Control Board
Shillong

Tour report for assessment of polluted river stretches in Nagaland

A. Introduction

1. The National Green Tribunal, Principal Bench at New Delhi, vide order dated 6th December, 2019 in OA No.673/2018 in the matter of News item published in 'The Hindu' authored by Shri Jacob Koshy titled 'More river stretches are now critically polluted: CPCB' has given certain directions as under:-

(i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28th August, 2019 in OA No.593/2017 by 31st March, 2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide order dated 22nd August, 2019 in the case of river Ganga i.e. Rs.5 lakhs per month per drain, for default in in-situ remediation and Rs.5 lakhs per STP for default in commencement of setting up of the STP.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the order dated 8th April, 2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22nd August, 2019 in the case of river Ganga i.e. Rs.10 lakhs per month per STP.

(iii) An institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

(iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

(v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

(vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

(vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

(viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

(ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the action plans prepared by the States which may start forthwith, if not already started.

(x) Rivers which have been identified as clean may be maintained.

2. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 22nd January, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. For the State of Nagaland, composition of the team was as below:-

(i) Shri Saumyasib Mukhopadhyay, Senior Environmental Specialist, NMCG
(ii) Dr. P. N. Rymbai, Scientist 'B', NRCD
(iii) Dr.Shantanu Dutta, Additional Director, Shillong, (Representative from CPCB)

The present report provides a summary of the field visit and discussion undertaken during the visit.

B. Background

4. Out of the identified 351 polluted river stretches reported, 6 such stretches are reported in Assam. However, only 1 stretch is falling under Priority-I. The details of the polluted river stretches in Nagaland is shown in Table-1. The above team visited Dimapur during 02nd – 03rd March, 2020 to ascertain the ground reality and to interact with the stakeholders responsible for sewerage infrastructure to be/being created for the said polluted river stretches. The team visited various points on Dhansiri River.

Table1: Polluted River Stretches in Nagaland

S.No	Name of polluted stretches with pollution categorization	No. of such stretches	Brief details (Name of river/stretch)
1	No of Polluted stretches in Category-I	1	Dhansiri River
2	No of Polluted stretches in Category-II	-	-
3	No of Polluted stretches in	1	Dzuna

S.No	Name of polluted stretches with pollution categorization	No. of such stretches	Brief details (Name of river/stretch)
	Category-III		
4	No of Polluted stretches in Category-IV	2	1. Chathe 2. Dzu
5	No of Polluted stretched in Category-V	2	1. Dzucha 2. Sano
	Total	6	

The town wise polluted stretches are given in Table2.

Table2: Polluted Stretches and name of towns in Nagaland

S.No	Polluted River Stretch	Main River/Tributary	Town
1	Dhansiri River (I)	Dhansiri	Dimapur
2	Cathe River (IV)	Tributary of Dhansiri	Medziphema/Chumukedima settlements near Dimapur
3	Dzuna (III)	Tributary of Dzu	Kohima
4	Dzucha (V)	Tributary of Dzu	Kohima
5	Dzu (IV)	Dzu	Kohima
6	Sano (V)	Sano	Kohima

Source: Action Plan prepared by NPCB

The photographs taken during the visit are placed at **Annexure – I.** A meeting with the stakeholders was also held under the Chairmanship of Member Secretary, Nagaland Pollution Control Board (NPCB) on 2nd March 2020.

As per the directions of NGT and also works assigned to the teams, discussions with the respective local bodies were focused on assessment of sewerage infrastructure (existing/futuristic) vis-à-vis the action plans submitted by Nagaland Pollution Control Board (NPCB) to the Central Pollution Control Board (CPCB). It was informed that action plans for polluted river stretch under Priority-I (1 nos) was approved by CPCB in May/June, 2019.In respect of polluted river stretches under Priority-III(1 nos), IV (2 nos) & V (2 nos), actions plans although have been submitted by NPCB but yet to be approved by CPCB.

During the meeting, major stakeholders present were from Nagaland Pollution Control Board (NPCB), PHED, Dimapur Municipal Council. It was also requested to nominate a Nodal officer in the office of Chief Secretary as directed by the Hon'ble NGT. Various issue that were discussed include mainly focuses on sewage treatment aspects.

During the meeting it was informed that a pollution abatement works sanctioned under NRCP for a priority-1 river Dhansiri in the form of an I&D and STP works is ongoing and 45% is completed. The expected date of completion is June, 2021. 95% construction of STP of 25.43 mld (WSP technology) is completed. Out of the 6.5 km of the trunk sewer line 6 km is

completed. And 5 km of the road restoration work is also completed. Out of 80 km sewer line, 30 km is laid; about 35% completed for gravity sewer, Admin. Building at STP site is completed and 5000 trees planted on road side. The project was sanctioned in 2005 with revised sanctioned in 2014, work is yet to be completed.

During the discussion, it was informed to the team that due to (i) prolonged monsoon season-almost 7 months (from April to October), (ii) delay in land availability (no Govt land is available in Nagaland, all lands belong to communities and negotiations for land acquisition takes lot of time), (iii) delay in releasing of Central share to the implementing agency and non-release of corresponding State share because of financial constraint in the State has been the major reasons for delay in work completion.

During the site visits, the solid waste disposal sites, Feacal Sludge Management plant, were also seen. At present there is no such sanitary landfill site available at Dimapur.

4. Observations and recommendations

(a) From the pollution stretches concerned in Nagaland, Dimapur and Kohima are the two major towns contributing pollution load. Out of the Dimapur is situated along river Dhansiri considered under Priority one polluted stretch, while Kohima is along 4 other polluted stretches (river Dzuna, Dzucha, Dzu and Sano). The other polluted stretch i.e. Cathe river flows through the outer settmeennts namely Medziphema village and Chumukedima towns at the outer settlement areas of Dimapur. The population at these areas are scattered.

(b) The total present catchment area population of these rivers is about 300000 (census 2011) with an estimated sewage generation of 32 MLD. No treatment capacity is available at this moment. The major town wise break up is given below:

S.No	Major Towns	Priority	Contributing Population (2011)	Sewage Generation (MLD)	Existing Capacity (MLD)	GAP (MLD)	Proposed (STP and MLD)
1	**Dimapur and Surrounding**						
(i)	Dimapur	I (Dhansiri river)	149834	16.58	0	16.58	25 (1 STP)-WSP
(ii)	Medziphema (village)	IV (Chathe river)	1217	0.13	0	0.13	-
(iii)	Chumukedima		16510	1.8	0	1.8	-
	Sub-Total (A)		**167561**	**18.51**	**0**	**18.51**	**25**
2	Kohima	III, IV & V	115000	12.42	0	12.42	-
8	Total		282561	30.93	0	30.93	25

(c) In Dimapur, A project for 80 km sewer network and 25 MLD STP capacity was sanctioned in 2005 for which a contractor was hired. But, due to various reason the contract with the earlier contractor could not been worked out and a revised sanction

was issued in 20014 by NRCD for Rs 82 Cr. (on 70:30 ratio) to complete the scheme. A copy of the AA&ES is enclosed in **Annexure-II.** In the previous scheme it is learnt that the STP ponds were constructed but due to change in level of the inlet pipeline re excavation of the ponds are being done in the new contract.

(d) The status of the other components of Work include as follows:

S.No	Item of Works	Work Done	Physical Progress (%)
1	Gravity Sewer (100mm to 1200 dia)-80 km	30km	37.5
2	STP-25.43 MLD based WSP	Almost complete	95.83
3	Laboratories and Equipment's	Complete	100
4	Admin Building and Staff Quarter	Complete	100
5	Low cost sanitation		7.42
6	Afforestation		50
7	Public awareness Campaign		3.7
	Overall Completion		45

(e) However, now the PHED authority is changing the scheme and following are proposed:

- 23 km sewer network to bring the waste water from Dimapur to Sugar Mill Nala;
- 3 SPS at Lengri Nala, Hospital Nala and Sugar Mill Nala
- Gravity sewer of 1.9 km from Sugar Mill Nala to Pressure Break Tank near Suzuku Village
- Gravity sewer of 2.3 km from Hospital Nala (SPS point) till the SPS at the Lengri Nala
- Rising main of 100m from Lengri Nala to the Pressure Break point at Suzuku Village through a steel bridge;
- Conveyance of the sewage collected at the pressure break point to the STP through a 6.5 km of trunk main line

MAP SHOWING DHANSIRI RIVER AND ITS

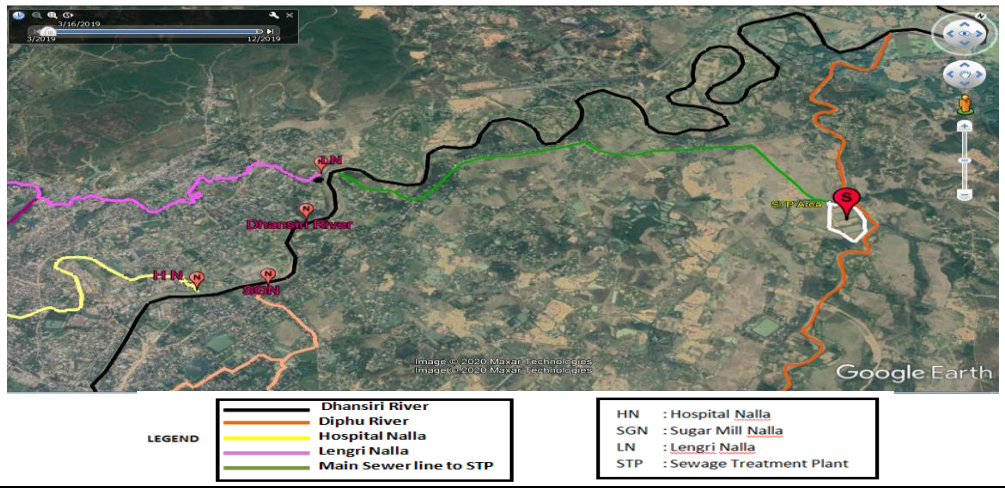


Figure1: Dhansiri River and its tributaries

(f) However, if the Interception and Diversion of the 3 Nala is considered then the proposed STP capacity is 25 MLD appears to be an over designed STP capacity probably as it was conceived considering a sewerage network projects which appears not to be the priority now for the Govt. of Nagaland.

(g) After the AA&ES from the Nagaland Government the scope changed will be informed to NRCD. No additional cost is envisaged.

(h) The total dry weather flow of these 3 nala is given in table 3 below:

S. No.	Name of Nala	Dry weather Flow (MLD)
1	Lengri Nala	3.9
2	Hospital Nala	2.33
3	Sugar Mill Nala	1.72
	Total	7.95

(i) Therefore for the I&D scheme an STP with 10 MLD capacity (with 20% extra loading provision) could have been a better designed STP as in the pond system the necessary retention required to be maintained will not be met if a STP of 25 MLD is constructed.

(j) During the visit, it was also found that the there will be 3 pumping station required at the tapping points of these nala and one steep bridge is needed to bring the waste water from the SPS proposed at the Lengri nala side to the other bank side for further transportation towards the STP site. A schematic drawing of the SPS, Nala and Proposed STP site is shown in Figure-2.

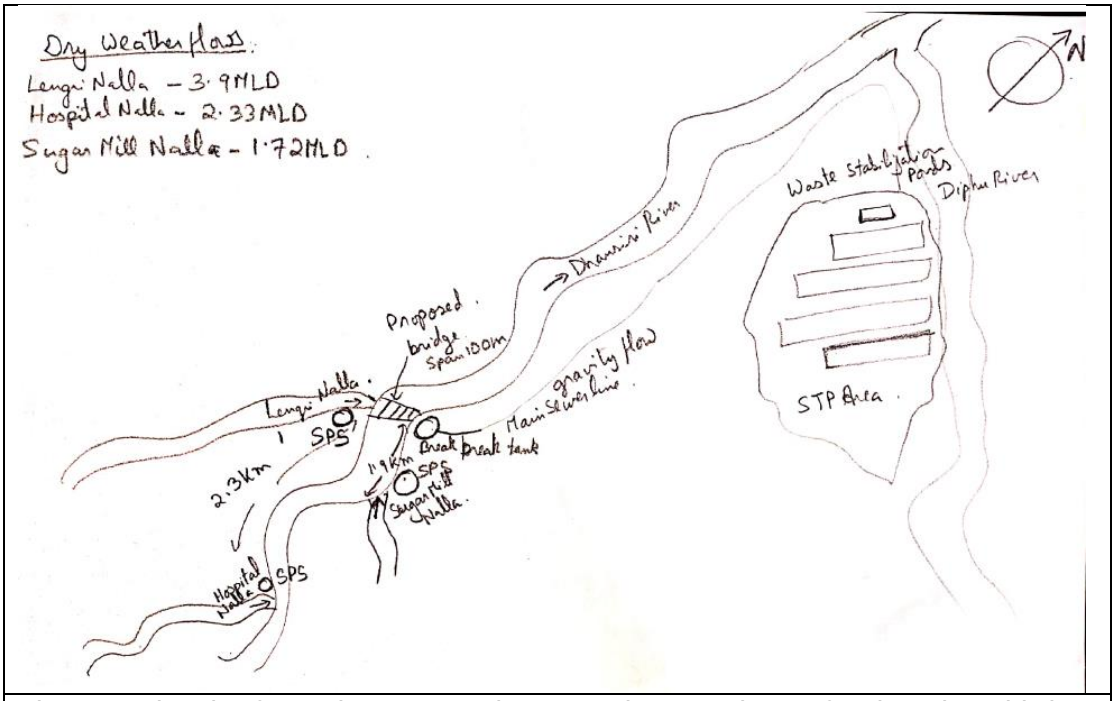


Figure2: Sketch of 3 Nala, proposed SPS and STP scheme for the Dhansiri river scheme (Source: PHED, Nagaland)

(k) Considering the work remains i.e. proposed 3 SPS, bridge construction on the Dhansiri river (100m for rising main), and the remaining works of gravity line (2.3+1.9= 4.2 km) and 0.5 km of trunk line (out of 6.5 km of trunk line 6 km is already laid) the STP does

not seems to start its operation even before March 2021 as the season of work is only between November to March. The land for the SPS is still not acquired but negotiations is going on with the owners hopefully the SPS lands will be acquired by October 2020. In absence of a contractor, it is quite unlikely that the PHED department will be able to complete these works within the stipulated period of March 2021.

(l) One of the major reasons for delay is non release of state share due to non-availability of funds. It is learnt that due to applicability of schedule 6, almost all the central sponsored projects in Nagaland is funded in 90:10 ratio whereas the present sewerage scheme is funded in 70:30 ratio. State government will be requesting NRCD to change the funding pattern.

(m) In absence of the STP scheme, bioremediation activities should have been started immediately to the major polluting 3 drains. However, till now no such plan has been prepared for the bi-remediation of drains. During the meeting the necessary guidelines document prepared by CPCB was requested to be referred for suitable bioremediation proposal.

(n) Dimapur Municipal Council (DMC) under the AMRUT SAAP Management Plant of 30 KLD capacity at Burma Camp, Dimapur Plant is in operation. This plant is located just adjacent to the Solid Waste Disposal site and is an anaerobic treatment system with underground chambers constructed there. The treated water is disposed to nearby drain after filtration. The treated water quality was requested to be tested at the laboratory of NPCB with sample taken during the visit.

(o) It was reported that no CETP is available at present, whereas, two ETPs are in operation and directions were issued to hotels for setting up of ETPs. According to the monthly progress report, proposal for In-situ remediation of polluting drains is being worked out.

(p) During the site visit, it was also observed that Solid waste management is still very poor in the State. The Team's visit to the Burma Camp Waste dumping site has revealed that neither a segregation nor treatment of solid waste is adopted at present. In this regard, the Government of Nagaland was recommended tie up with companies for compaction of waste.

(q) A visit was made to the Burma Camp Waste dumping site and it was noticed that no segregation of waste is carried out and the whole dumping site is being poorly managed. About 100 TPD of waste is generated. As per monthly progress report, a proposal for solid waste management at the cost of Rs. 110.72 Crore was submitted to the Ministry of Housing and Urban Affairs, Government of India. Also, a direction for prevention of illegal disposal of waste in the drainage has been issued by DMC in the local dailies on 13.03.2019 and the colony councils/GBs have been authorized to implement the order and impose a fine on defaulters.

(Sh. Saumyasib Mukhopadhyay) NMCG **(Dr. P. N. Rymbai-NRCD)** **Dr. Shantanu Dutta, CPCB**

Annexure – I

Figure: Dhansiri River

Fig: Hospital Nallah meeting the Dhansiri River

Figure: Sugar Mill Nala

Figure: Lengri Nala Meeting the Khera Nala and then to Dhansiri river

At The ongoing STP work site at Suzuku Village

Figure: 30 KLD FSSM Plant at Burma Camp-Dimapur

Solid Waste Disposal Site at Burma Camp

Assessment of polluted river stretches in Punjab - Tour Report

A. Introduction

1. The National Green Tribunal, Principal Bench at New Delhi, vide order dated 6th December, 2019 in OA No.673/2018 in the matter of News item published in 'The Hindu' authored by Shri Jacob Koshy titled 'More river stretches are now critically polluted: CPCB' has given certain directions as under:-

(i) 100% treatment of sewage may be ensured as directed by this Tribunal vide order dated 28th August, 2019 in OA No.593/2017 by 31st March, 2020 at least to the extent of in-situ remediation and before the said date, commencement of setting up of STPs and the work of connecting all the drains and other sources of generation of sewage to the STPs must be ensured. If this is not done, the local bodies and the concerned departments of the States/UTs will be liable to pay compensation as already directed vide o4rder dated 22nd August, 2019 in the case of river Ganga i.e. Rs.5 lakhs per month per drain, for default in in-situ remediation and Rs.5 lakhs per STP for default in commencement of setting up of the STP.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31st March, 2021 in terms of the order dated 8th April, 2019 in the present case will remain as already directed. In default, compensation will be liable to be paid at the scale laid down in the order of this Tribunal dated 22nd August, 2019 in the case of river Ganga i.e. Rs.10 lakhs per month per STP.

(iii) We further direct that an institutional mechanism be evolved for ensuring compliance of above directions. For this purpose, monitoring may be done by the Chief Secretaries of all the States/UTs at State level and at National level by the Secretary, Ministry of Jal Shakti with the assistance of NMCG and CPCB.

(iv) For above purpose, a meeting at central level must be held with the Chief Secretaries of all the States/UTs atleast once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action. NMCG will be the nodal agency for compliance who may take assistance of CPCB and may give its quarterly report to this Tribunal commencing 01.04.2020.

(v) The Chief Secretaries may set up appropriate monitoring mechanism at State level specifying accountability of nodal authorities not below the Secretary level and ensuring appropriate adverse entries in the ACRs of erring officers. Monitoring at State level must take place on fortnightly basis and record of progress maintained. The Chief Secretaries may have an accountable person attached in his office for this purpose.

(vi) Monthly progress report may be furnished by the States/UTs to Secretary, Ministry of Jal Shakti with a copy to CPCB. Any default must be visited with serious consequences at every level, including initiation of prosecution, disciplinary action and entries in ACRs of the erring officers.

(vii) As already mentioned, procedures for DPRs/tender process needs to be shortened and if found viable business model developed at central/state level.

(viii) Wherever work is awarded to any contractor, performance guarantee must be taken in above terms.

(ix) CPCB may finalize its recommendations for action plans relating to P-III and P-IV as has been done for P-I and P-II on or before 31.03.2020. This will not be a ground to delay the action plans prepared by the States which may start forthwith, if not already started.

(x) Rivers which have been identified as clean may be maintained.

2. Pursuant to the directions of NGT and to facilitate monitoring thereof by the Central Monitoring Committee, National Mission for Clean Ganga (NMCG), vide OM dated 27th February, 2020, has constituted teams consisting officers from NMCG, NRCD and CPCB to visit and review the status of pollution (domestic and industrial), available sewage infrastructure and existing/futuristic gap to make a conditional assessment and requiring interventions, if any. However, representatives from CPCB did not attended the meeting. For the State of Punjab, composition of the team was as below: -

- Dr. Pravin Kumar, Director Technical, NMCG
- Shri Sanjay Kumar Singh, Deputy Director, NRCD
- Shri Vijay Kumar Yadav, Assistant Engineer, NMCG

3. The present report provides a summary of the field visit and discussion undertaken during the visit.

B. Background:

4. Out of the identified 351 polluted river stretched reported, 4 such stretches are reported in Punjab. Out of these 4 stretches 2 are in Priority-I and each 1 are in Priority-IV & Priority-V. To look into the issue, the above team visited Punjab during 05th March, 2020 to ascertain the ground reality and to interact with the stakeholders mainly representatives of local bodies (Urban Local Bodies/Municipal Councils/Nagar Panchayat) responsible for sewerage infrastructure to be/being created for the said polluted river stretches.

Table 1: Polluted River Stretches in Punjab:

S.No.	Name of Polluted Stretches with Pollution Categorization	No. of Stretches	Brief details (Name of river/stretch)
1.	No. of Polluted Stretches in Category-I	2	1. River Satluj 2. River Ghaggar
2.	No. of Polluted Stretches in Category-IV	1	1. River Kali Bein
3.	No. of Polluted Stretches in Category-V	1	1. River Beas

A meeting with the various stakeholders (Urban Local Bodies/Nagar Panchayat) was held under chairmanship of Member Secretary, PPCB on 06th March 2020 in the Member Secretary office of Punjab Pollution Control Board. The meeting was also attended by the officials from NMCG, NRCD, PPCB, ULB and Municipal Councils. During the meeting, Member Secretary of PPCB made a brief presentation highlighting the major drains as source of pollution, total sewage generation, treatment capacity generated- its GAP, under construction & new proposed and Industrial effluent management.

5. The major towns falling in any of the polluted river stretches in Satluj, their sewage generation, treatment capacity installed and GAP assessment is given below:

S.No.	Major Towns	Sewage Generation (MLD)	Existing Capacity (MLD)	GAP (MLD)	Proposed STP (MLD)	Present status
1	Ludhiana	646	418	228	275	Under Tendering
2	Sahnewal	3	3	0	0	N.A.
3	Machiwara	3	1.5	1.5	0	N.A.
4	Jagraon	15	15	0	0	N.A.
5	Jalandhar	300	235	65	65	50 MLD under tendering & 15 MLD DPR preparation is in progress.

6	Phagwa	36	36	0	0	N.A.
7	Phillaur	5.6	5.6	0	0	N.A.
8	Nakodar	6	6	0	0	N.A.
9	Nawashahar	6	6	0	0	N.A.
10	Banga	3	3	0	0	N.A.
11	Hoshiarpur	30	30	0	0	N.A.
12	Raikot	7	0	7	7	N.A.
13	Nurmahal	2.6	2.6	0	0	N.A.
14	Shahkot	1.5	0	1.5	3	Under construction
15	Naya Nangal	11.4	18.75	0	0	N.A.
16	Kiratpur Sahib	1	0	1	2	Under construction
17	Roopnagar	8	14.5	0	0	N.A.
18	Morinda	4	5.5	0	0	N.A.
19	Kurali	3	5	0	0	N.A.
20	Anandpur Sahib	2.14	8	0	0	N.A.
21	Village Ratanpura, Roopnagar	0.09	0	0.09	Not proposed	31.01.2022
22	Viilage Bhrampur lower & Bandlehri, Roopnagar	0.19	0	0.19	Not proposed	31.01.2021
Total		**1094.52**	**813.45**	**304.28**	**352**	

However total 54 towns fall in the stretch, total sewage generation 1387 MLD and 51 STPs of capacity 1001 MLD installed. 5 nos. STPs (419 MLD) up-gradation proposed.

6. There are 3 existing dairy complexes at Ludhiana namely Tajpur diary complex, Haibowal Diary complex and Jaswal diary complex & 1 existing dairy complex at

Jalandhar namely Jamsher Dairy complex. Untreated wastewater from these diaries is being discharged directly in nearby drains.

- ETP of 5 MLD proposed for Jamsher dairy complex, Jalandhar- **To be commissioned by 30.09.2021.** Proposal stage only.
- ETP of 5 MLD & 10 MLD proposed for Tajpur & Haibowal Dairy complex, Ludhiana- **To be commissioned by 31.12.2020.** Proposal stage only.

7. In the stretch of Sutluj 4 locations are identified to install the Real Time Water Quality Monitoring Stations (RTWQMS) Rooper Headworks, D/S Budha Nallah, D/S East Bein & Harike Lake (Rajasthan feeder). Work has already been awarded on 15.12.2019 and likely to be commissioned by 31.03.2020.

8. In the catchment area of river Sutlej, there are 2317 (490 industries captive ETPs 104 MLD, 1890 industries joined CETPs 3 ZLD- 5.55 MLD & 10 electroplating industries ZLD) water polluting units, which discharge their treated effluent into the sewerage system of respective cities either directly or through CETPs. Out of these, 1465 industries are connected with three CETPs and 425 industries are connected with re-processor facility installed at Ludhiana. 3 new CETPs (105 MLD) proposed.

9. The major towns falling in any of the polluted river stretches in Ghaggar, their sewage generation, treatment capacity installed and GAP assessment is given below:

S.No.	Major Towns	Sewage Generation (MLD)	Existing Capacity (MLD)	GAP (MLD)	Proposed STP (MLD)	Present status
1.	Banur	2.53	4.0	0	0.0	
2.	Baretta	2.13	3.0	0	0.0	
3.	Bhikhi	2.52	3.0	0	0.0	
4.	Budhlada	5.50	6.5	0	0.0	
5.	Khanauri	1.82	3.0	0	0.0	
6.	Lehragaga	2.92	4.0	0	0.0	
7.	Mandi Gobindgarh	10.02	25.0	0	0.0	
8.	Moonak	2.34	3.0	0	0.0	
9.	Mohali	24.35	45.4	0	0.0	
10.	Patiala	70.00	46 10	14	Additional module of STP of 15	

					MLD yet to be installed	
		6	13			
11.	Pattran	3.70	4.0	0	0.0	
12.	Rajpura	14.32	17	0	0.0	
13.	Samana	6.95	10.0	0	0.0	
14.	Sardulgarh	2.69	4.0	0	0.0	
15.	Sunam	7.00	8.0	0	0.0	
16.	Zirakpur	13.87	17.0	0	0.0	
17.	Bassi Pathana	2.53	-	2.53	3.0	
18.	Boha	1.63	-	1.63	2.0	
19.	Lalru	4.74	1.5	3.24	1.5, 1.0, 0.3 & 0.3	
20.	Dera Bassi	5.77	4.0	1.77	2.0 & 2.0	
21.	Sirhind	7.54	-	7.54	5.0, 4.0 & 2.0	
22.	Amloh	2.28	-	2.28	3.0	
23.	Cheema	1.50	-	1.50	2.0	
24.	Dhuri	7.19	-	7.19	5.0 & 6.0	
25.	Sangrur	11.32	-	11.32	11.0 & 4.0	
26.	Nabha	7.81	-	7.81	10.0	
27.	Longowal	3.26	-	3.26	3.0	
28.	Sanaur	2.80	-	2.80	4.0	
29.	Bhadson	0.93	-	0.93	3.0	
30.	Ghanour	0.8	-	0.8	2.0	
		238.76	**231.4**	**68.6**	**91.10**	

10. The stretch of river Beas along Mukerian are in under priority V. river Beas has been divided into two stretches i.e. stretch-1 Talwara to Mukerian, 4 towns located in the stretch (Talwara, Pathankot, Sujanpur, IFP Pathankot). Total quantity of sewage

generation in stretch-1 is 70.3 MLD & capacity of STPs in operation 55.6 MLD, thus Gap in this stretch is **14.7 MLD**. In stretch-2 D/s Mukerian to Harike 3 towns located (dhilwan, Goindwal Sahib & IFP Goindwal Sahib). Total quantity of sewage generation in stretch-2 is 6.8 MLD & capacity of STPs in operation 1 MLD, thus Gap in this stretch is **5.8 MLD.**

11. The stretch of river Kali Bein from "Sultanpur Lodhi to confluence point Beas" has been categorized under priority IV. Major towns located on the bank of Kali Bein are Dasuya, Tanda, Begowal, Bholath, Kartarpur, Kapurthala & Sultanpur Lodhi. Total sewage generation in this stretch is 56.1 MLD. Total 7 nos, STPs (44.1MLD0 are in operation. Thus GAP in treatment capacity is 12 MLD. In sultanpur Lodhi one sewage Treatment Plant of 1 MLD is proposed and 2nd STP of 4 MLD is proposed to be replaced with the existing STP of 2.5 MLD.

12. In Punjab total 90 nos. STPs (new/ rehabilitation/ up-gradation) are being set up in the catchment areas of rivers (Sutlej- 42, Ghaggar-32 and Beas-16) by 31.09.2022. Out of 90 STPs, fund for 65 STPs (966.3 MLD) tied up and funds for 25 STPs (98.5 MLD) are yet to be tied up.

13. A total of 204.02 MLD of industrial effluent is generated, out of which 203.57 is treated in captive ETPs installed by the industries. Total 513 nos. ETPs are operational in the catchment area of rivers.

14. Observations and recommendations

a. Budha nalla carries domestic as well as industrial effluent of Ludhiana while East Bein carries the domestic and industrial effluent of Jalandhar area and these two nallas are the major source of pollution in river Sutluj. There are 14 major drains are discharging in Budha nalla without any treatment, for capturing these drains a sewerage project tender has been floated. After completing this sewerage project water quality of Budha nalla & river Sutluj will improve.

b. In Ludhiana there are 03 CETPs one completed & 2 are under construction for dying sector, the dying sector are discharging in Budha nalla. Budha nalla merges with river Satluj and few km downstream from Harike Barrage, Rajasthan feader canal withdraws water. Due to textile industrial effluent, the water quality in Rajasthan canal always become an issue between Punjab & Rajasthan. Though water quality of Rajasthan canal in terms of BOD/COD appears fine, it still caries traces of textile/dying effluent. Most of the places the water from canal is used for drinking with or without treatment, causing serious health risks. The team felt that the effluent from dying/textile CETP clusters may be reused in agriculture and should not be discharged into Budha nala. Industrial reuse of the CETP effluent has not been agreed by Dyers association. Due to cost issue, reuse in other way may solve the problem.

c. River Ghaggar enters Punjab near Mubarikpur, District Mohali, passes through distt. Mohali, Patiala, Sangrur and Mansa. 13 primary & 29 secondary drains contributing to

river Ghaggar, 30 towns & 389 villages in the catchment area of Ghaggar. 43 STPs are required to be installed in 30 towns. Presently 21 STPs are in the operational state, quantity of wastewater presently treated 170.16 MLD. The Gap in the treatment capacity is 68.6 MLD, however 93.10 MLD capacity has proposed. The water quality of river Ghaghar from its origin point gets affected due to discharge of domestic sewage from towns of Punjab, UT of Chandigarh and towns of Haryana. Despite being sufficient capacity in these areas the water quality of river should not be so poor. Special attention may be given in the monitoring of STPs in this area.

d. The stretch of Holy Bein from " Sultanpur Lodhi to confluence point Beas" has been declared as polluted stretch of Priority-IV. Holy Bein originates from spring (Bhouli) in dhanoa village of Dasuya Tehsil, Hoshiarpur district of Punjab. To maintain the ecology in Holy Bein, fresh water from Mukerian hydel @ 200 cusecs to 300 cusecs is released into the Bein at village Terkiana, Tehsil Dasuya, District Hoshiarpur, which helps in improving the water quality & ecology of Holy Bein. This is a good arrangement to increase the flow in Kali Bein river.

e. Director (T-III), NMCG suggested PPCB to regularly monitor the utilization capacity, treatment efficiency and compliance status of all existing STPs by monitoring flow and water quality of influent and effluent of respective STPs on daily basis. Member Secretary PPCB acknowledge the fact that the capacity utilization of treatment plant is equally important to the compliance of the STP and also ensure that in subsequent report the actual sewage treatment will also be reported.

Dr. Pravin Kumar	**Sanjay Kumar Singh**	**Vijay Kumar Yadav**
(Dir Technical)	**(Deputy Director)**	**(ACE)**

Tamilnadu Tour Report – Polluted Stretches

Honorable National Green Tribunal (NGT), Principal Bench, New Delhi vide order dated: 20th September 2018 in O.A No.673 / 2018 in the matter of news item published in the Hindu authored by Sri Jacob Koshi titled “More river stretches are now critically polluted –CPCB”, the Hon’ble NGT directed the state to prepare action plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes.

The CPCB has a nationwide programme the “National Water Quality Monitoring Progamme (NWMP) being implemented through State Boards and Pollution Control Committees. In this programme the Designated Best Use (DBU) parameters as well as other relevant parameters are being analyzed and river stretches are prioritized based on certain classifications. BOD is one of the important parameter to monitor the quality of rivers. The CPCB considers river water fit for bathing when it meets the criteria of having Bio-chemical Oxygen Demand (BOD) less than 3.0 mg/L, Dissolved Oxygen more than 5.0 mg/L and Faecal Coliform bacteria to be less than 500 MPN/100 ml. A river stretch having BOD greater than or equal to 30 mg/L is termed as ‘Priority I’ polluted stretch, while that between 3.1 - 6 mg/L is ‘Priority V’. In its 2015 Report, the CPCB had identified 302 polluted stretches on 275 rivers. The number of such stretches was found to be 351 in 2018.

The Hon’ble NGT passed further directions in the Order dated 06.12.2019 in OA No. 673 of 2018. Main directions of the order are as follows:

(i) 100% treatment of sewage may be ensured by 31.03.2020 at least to the extent of in-situ remediation.

(ii) Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning till 31.03.2021.

(iii) A meeting at central level with NMCG as nodal agency must be held with the Chief Secretaries of all the States/UTs at least once in a month (option of video conferencing facility is open) to take stock of the progress and to plan further action.

(iv) States/UT may furnish Monthly progress report to Secretary, Ministry of Jal Shakti with a copy to CPCB.

The 1st meeting of the Central Monitoring Committee constituted by Hon’ble NGT in the matter OA No. 673 of 2018 was held on 08.01.2020 at 10.30 am in Conference Room, DoWR, RD&GR, Ministry of Jal Shakti under the chairmanship of Secretary, DoWR, RD & GR.

It was decided in the meeting that group may be formed of officials from NMCG, NRCD and CPCB for reviewing the progress of the States as per the Action Plans and visit some key & important States.

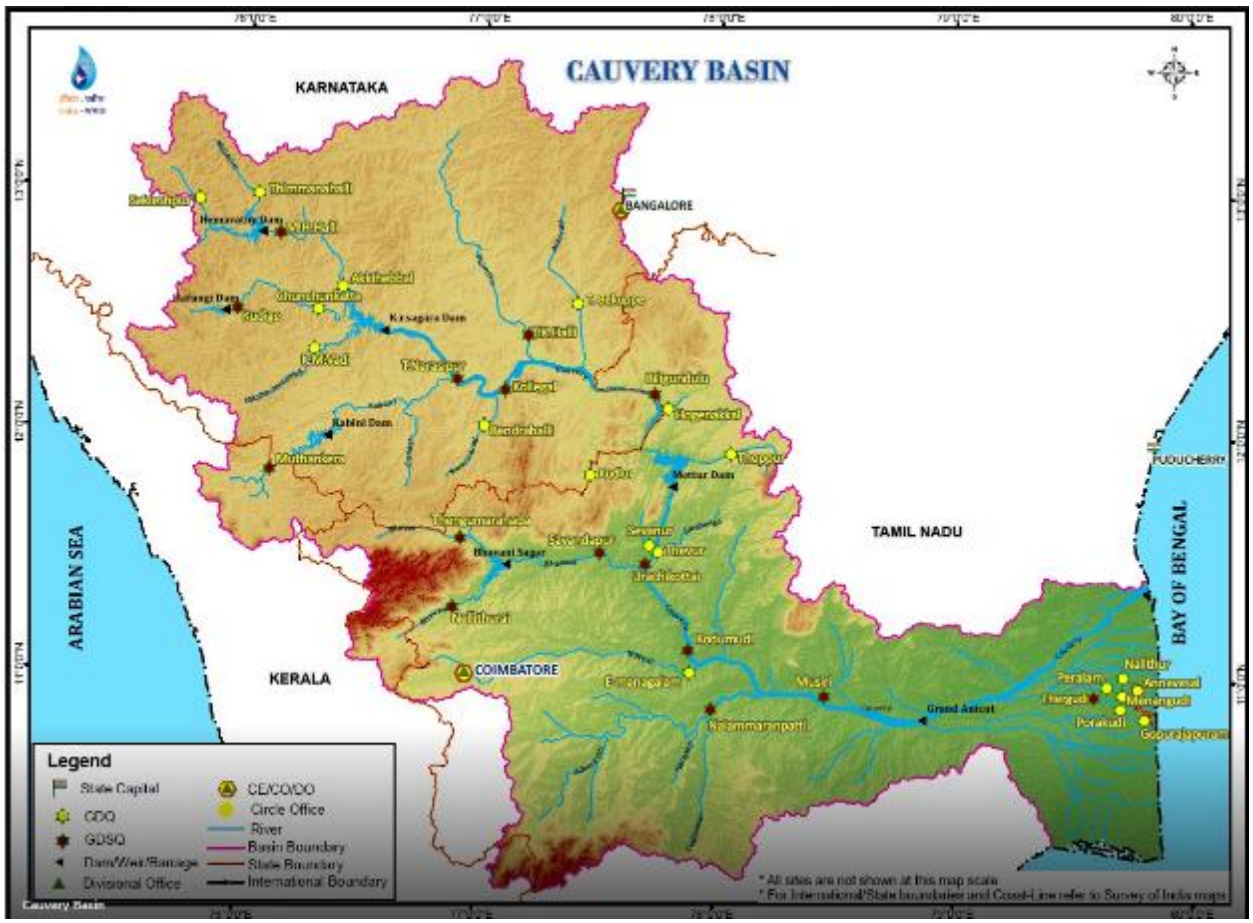
Accordingly National Mission for Clean Ganga formed team of the following officials to visit and review the progress of the Tamilnadu state as per the Action plans:

i. Dr. Sabita Madhvi Singh, Joint Director, NRCD

ii. Dr. M. Madhusudanan, CPCB, RD-Chennai (Representative from CPCB)

iii. Mr. Deepinder Singh in place of Mr. G. K. Murty, Project Management Consultancy, NMCG

The team visited Chennai, Tamilnadu from 01.03.2020 to 03.03.2020 and reviewed the Action plan and the status of its implementation with the officials of the Government of Tamilnadu. The team also visited the Priority I Polluted Stretches in River Vasista and Thirumanimuthar near Salem to inspect the condition of the River and to assess the progress of Action Plan approved by CPCB for this stretch.



STATUS OF IMPLEMENTATION OF ACTION PLAN

There are 6 Polluted River stretches as reported by CPCB in Tamilnadu, the details of the Rivers, polluted river stretch, length and BOD range are given in the table below:

S.no.	RIVER	RIVER STRETCH	LENGTH in Km	BOD RANGE (mg/L)	PRIORITY	Status of River
1	Cauvery	Mettur to Mayiladuthurai	200	3.3 – 32	I	Perennial
2	Sarabanga	Thathayampatti to T Konagapadi	15	78	I	Non Perennial
3	Thirumanimuthar	Salem to Papparapatti	15	190	I	Non Perennial
4	Vasista	Manivilundhan to Thiyaganur	10	675	I	Non Perennial
5	Bhavani	Sirumugain to Kalingarayan	60	3.3 – 6.6	IV	Perennial (e-flow maintained)
6	Thamirabarani	Pappankula to Arumuganeri	80	3.1- 4.0	V	Perennial

LIQUID WASTE MANAGEMENT

- There are four main Corporations – Salem, Trichy, Erode and Tirunveli in these polluted stretches, the status of Liquid waste management in these stretches is given below:

Corporation	Sewage Generation in MLD	Total STP capacity in MLD	Working STP capacity in MLD	STP capacity u/c in MLD	STP utilization in %	Discharging to River
Salem	100	98	19(13+6)	79(44+35)	19	Thirumanimuthar
Trichy	105	95	58	37	69	Cauvery
Erode	44.6	50.5	50.5		20	Cauvery
Tirunelveli	56.5	58.20	24.20	34	35	Thamirabarani

- Salem – STP 35 MLD capacity to be constructed by within next 3 months and rest 44 MLD to be completed by March, 2021.

- Trichy – STP of 37 MLD capacity to be constructed by June 2021.
- Tirunelveli – STP of 34 MLD capacity to be constructed by June 2022. Due to local agitation against the existing 24.20 MLD (based on WSP), it has been decided to construct a new 58.0 MLD treatment plant based on latest technology.
- Commissionerate Municipal Administration (CMA) officials informed that 100% treatment of sewage by 31.03.2020 at least to the extent of in-situ remediation will not be achieved as CMA is working on updated action plan for in situ treatment.
- For Rejuvenation, pollution abatement, augmentation of the water resources of Cauvery and its tributaries (Nadanthai Vaazhi Cauvery) a DPR estimated at a cost of Rs. 11,250.00 crore was presented in PPT.
- The status of other Municipalities is annexed as **Annexure II.**

SOLID WASTE MANAGEMENT

- The status of Solid waste management in four main corporations is given below:

Corporation	Solid waste Generation in TPD	Total Wet Waste generated in TPD	Total Dry Waste generated in TPD	Total Wet Waste treatment capacity created in TPD	Total Wet Waste treatment capacity u/c in TPD	Discharging to River
Salem	370	215	155	105	115	Thirumanimuthar
Trichy	390	222	168	222	13	Cauvery
Erode	170	85	85	85		Cauvery
Tirunelveli	170	97	73	104.5		Thamirabarani

- Collection efficiency – Salem – 100%, Trichy – 100%, Erode – 95% (100% to be achieved by June, 2020), Tirunelveli - 97%.
- Segregation efficiency – Salem – 94% (100% by May, 2020), Trichy – 92% (100% by May, 2020), Erode – 90% (100% by June, 2020), Tirunelveli - 80% (100% by May, 2020).
- Salem MSW – Remaining wet waste treatment facilities to be completed by June, 2020.
- It is reported that part of dry waste is sold to identified vendors, part of dry waste is stored at earmarked location and Inert & C& D waste is used to fill the low lying areas.

- The status of other Municipalities is annexed as **Annexure III.**

RIVER WATER QUALITY

- TNPCB officials presented that observed BOD values in 5 of the river stretches except for River Sarbanga are less than 3 mg/l and were meeting the standards.
- The water quality of 2 non perennial rivers has been reported based on the samples collected from Piezometric Well/bore well as per CPCB sampling protocol, when there is no flow in the Rivers.
- TNPCB informed that the rivers such as Vasista, Sarabanga and Thirumanimuthar are non perennial and occasional flow was observed only during the rainy seasons and only untreated sewage from the local bodies were let out in to the rivers which stagnates at the place of discharge due to low volume.

INDUSTRIAL POLLUTION ABATEMENT

- TNPCB informed that all the industries have Zero Liquid Discharge (ZLD) and no effluent discharges to the Rivers.
- Status of 7 CETP's to be setup to treat the effluent generated by 468 small scale industries in Erode District was discussed. It was informed that the report for these CETP's is yet to be finalized.
- TNPCB informed that Individual Treatment Plants have been setup to treat trade effluent generated by SAGO units in Salem district and now there is no impact on the River Vasista due to industrial waste.
- TNPCB informed that steps have been taken to avoid effluent discharge from Ash Dyke of Mettur Thermal Power Plan I & II as reported in Action plan.

AFFORESTATION

- Ground water and Irrigation department representative informed that 72 lakhs trees were planted in coordination with the forest department along the river stretches which in turn recharge the ground water.

WASTEWATER REUSE

CMA has shared the following details related to treated wastewater reuse:

- MoU between Tirunelveli Municipal Corporation and Swach Environment Private Limited dated 25-01-2018 to provide up to 32 MLD (9 MLD – 32 MLD) secondary treated effluent.
- MoA between Nagapattinam Municipality and M/s Nagai Power Pvt. Ltd. dated 10-03-2016 to provide up to 2.5 MLD secondary treated effluents.
- Supply of 10.4 MLD treated wastewater (dated 18-11-2019) from Pollachi Municipality to M/s Karpagasolai Farmer Producer Company Limited at the rate of

Rs 2/KL for initial period of 5 years, agreement can be extended for further period of 5 years at the new rate.

OBSERVATIONS AND RECOMMENDATIONS

- River Water Quality – It is observed that as the sewerage infrastructure interventions in the polluted stretches were not complete, so there is very little chance that BOD values in river stretches can be below 3 mg/l. TNPCB needs to recheck the water quality data along with CPCB on priority and report the same to the committee.
- River Water Quality - TNPCB was informed that the Piezometric Samples collected are not the representative samples and don't show the actual health of the River. Committee has requested TNPCB to differentiate and report the details of period in which river water was collected and well water was collected for the Polluted River stretches.
- River Water Quality - TNPCB was informed that the water quality data of polluted river stretch of P-I to P-V has to be prioritized based on the BOD values and any change in the priority need to be updated to the committee.
- River Water Quality - During Site Visit it was observed that only wastewater discharged by drains was flowing through River Vasista and Thirumanimuthar. No in-situ treatment of the drains was observed.
- Liquid Waste Management - CMA need to start in situ treatment of the drains as early as possible as reported in the Action Plan as the last date of the Action to be completed as per NGT order is 31-03-2020.
- Liquid Waste management - It is clear from the status of STP utilization of main corporations that majority of untreated wastewater is discharged into the Rivers. CMA needs to expedite work for completion of STP's, Sewerage Network and House Service Connections in Salem, Trichy, Erode and Tiruneveli.
- Liquid Waste management – it is observed that STP utilization is very low in Erode, Salem and Tirunelveli, CMA need to tap and divert local drains to STP's to increase the STP utilization, till the time Sewerage network and HSC's are completed. Industrial wastewater inflow was observed in STP at Salem during site visit.
- Solid Waste Management – As per data shared by TNPCB, it is observed that there is progress in Solid Waste management as majority of action plans are nearing completion. However, Salem MSW facility needs to be expedited.
- Septage Management – CMA need to expedite approval of DPR's and construction of FSTP's for small towns and Municipalities. In many Municipalities like Attur, Idappaddi, Komarapalayam, Gopichettipalayam, Vickramasingampuram, etc. The target date has not been met as per Action Plan.

- Industrial Pollution Abatement - It was observed that no member from Department of Industries participated in the meeting.
- Industrial Pollution Abatement – TNPCB reported that all the Industries are operating at ZLD, however during site visit industrial wastewater inflow was observed in STP at Salem, TNPCB need to take measures to stop discharge of industrial wastewater into drains.
- Industrial Pollution Abatement - TNPCB need to take steps to reduce the surface and ground water allocation given to industries as all the industries are now operating on ZLD.
- Industrial Pollution Abatement – State needs to expedite the construction of 7 CETP's in Erode district to treat the effluent generated by 468 small scale industries.
- E-flow and River demarcation - It is advised to take more emphasis to maintain E-flow in the Rivers, demarcation of the river and to remove encroachments from the River bed.
- Monthly Progress Report (MPR) – TNPCB to submit MPR for six polluted river stretches to Ministry of Jal Shakti, Delhi.
- Other Reports – TNPCB to submit STP performance report, number of non compliance Industries, details of water consumption in Industries, quality of ground water, performance of CETP's.

SITE VISIT REPORT

Detailed Site Visit report is annexed as **Annexure I.**

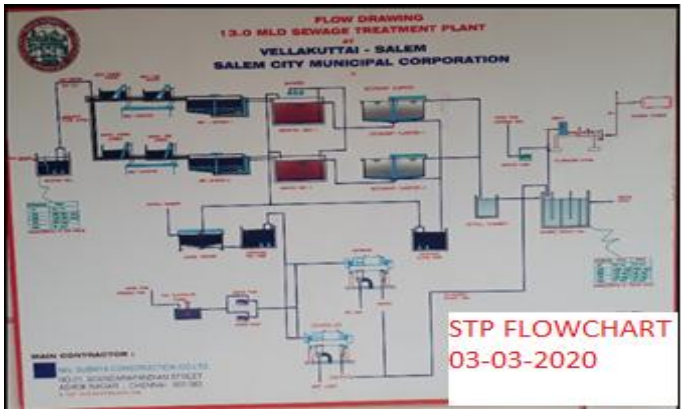
MINUTES OF MEETING

Minutes of meeting held on 02-03-2020 with Tamil Nadu officials is annexed as **Annexure IV.**

(Dr. M Madhusudanan)	(Dr. Sabita M Singh)	(Deepinder Singh)
Scientist 'E'	Joint Director	Deputy Team Leader, PMC
CPCB, RDC, Chennai	NRCD, New Delhi	NMCG, New Delhi

Annexure I - Detail of the site visit on 02nd and 03rd -03-2020

- **Site Visit to Salem – STP 1 – 13 MLD –**
  a. Treatment Process – Modified Activated Sludge Process

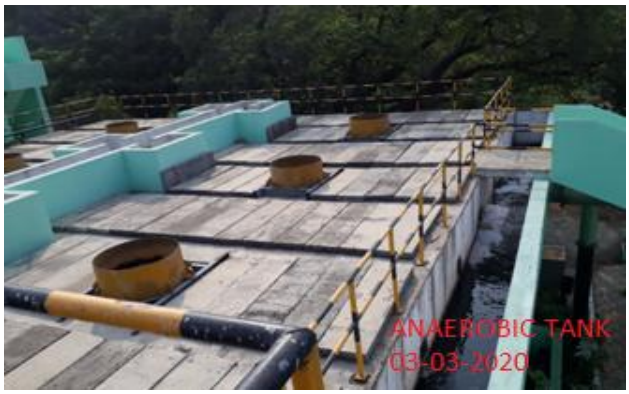


  b. Sewage received – 1.5 MLD, Utilization of STP to improve only after completion of Sewerage network
  c. Drain Tapping – 1 temporary drain tapping near STP
  d. EHS – Fence/Hand Rail were missing along the MPS and pathway along Aeration Tanks
  e. Other Observations –
    - Coloured wastewater being received at the drain due to mixing of Industrial effluent.
    - One tank of Secondary Sedimentation was not working.

    - No Sludge is being generated and Centrifuge was not in use as sludge was being reused in Aeration Tanks.

    - The plant was complying as per TNPCB report of September, 2019.
    - Commissioned in 2018, still not maintained properly.

- **Site Visit to Salem – STP 2 – 6 MLD –**



  a. Treatment Process – Anaerobic Treatment followed by MBBR
  b. Sewage received – 2 MLD, Utilization of STP to improve only after completion of Sewerage network
  c. Nala Tapping – 1 temporary nala tapping near STP
  d. EHS – Fence/Hand Rail were missing along the Anaerobic Tanks
  e. Observation –

    - The plant was complying as per the records shown by the operator.
    - No Sludge is being generated and Centrifuge was not in use.

- **Site Visit to Salem – River Thirumanimuthar**

  a. Flow – No water was flowing through the river but only sewage through drains was discharged into the river
  b. Lining – River was lined by concrete for 2.5 Km length through Salem City
  c. Nala Tapping – CMA was advised to tap the nearby nala to increase the STP utilization till the time sewerage network is not complete.

- **Site Visit to Narsingpura, Attur – River Vasista**
  a. Flow – No water was flowing through the river but only sewage through drains was discharged into the river and was stagnated in the River.

  b. Drain Tapping/In situ Treatment – Drains were discharging into River and no treatment of the drains is proposed as per Action Plan. CMA is now preparing a DPR to tap these drains and revising the Action Plan under Cauvery Rejuvenation Scheme.

- **Site Visit to Attur – Solid Waste management Facility (Micro Composting)**
  a. MSW – Wet Waste Treatment Facility – 2 TPD capacity – Visited the site.
  b. As informed by Municipal officials, 100 % MSW is collected from the town.
  c. Wet Waste is treated in decentralized Micro Waste Composting facilities to the tune of 8 TPD. Manure is given to farmers.
  d. Dry Waste of around 4 TPD is generated and 50 to 60% of the waste is recycled and sent to approved vendors and rest C & D and Inert waste is used to fill the low lying areas.

Annexure II - ACTION TAKEN STATUS

River Vasista – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Vasistanadhi:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Vasista nadhi	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	❖ **Salem District** ❖ **Narasingapuram Municipality** • No. of sewage outfall identified: 3 Location • Population: 26000 • Qty of Sewage generated: 1.28 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present Mode of Disposal: The black water is collected in septic tanks by individual households. • **Plan of Action:** • In order to treat the black water, it is proposed to **cluster with Attur FSTP** and co-treated. • To handle the **sullage water** discharged through **3 no. of major channels** which confluence with the river stretch, it is proposed to provide in-situ treatment	Municipal Administration	Oct-2019	➢ Now the Government has taken up holistic view in abatement of pollution to the river stretches in Tamilnadu and in the sameline Honourable minister for Municipal Administration & Water Supply department, Rural Development & Panchayat Raj Department and Special Initiatives has made announcement in the floor of assembly during the demand on Municipal Administration & Water Supply department on 08.07.2019. ➢ Accordingly Tamilnadu Water Investment Company (M/s. TWIC) has appointed as consultant for preparation of DPR.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Vasista nadhi	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		methodology by providing Screen, Grit followed by Horizontal planted gravel filter which will treat the sullage and discharge the treated water into the water course. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of Rs100.45lakh. This fund is proposed to be tied up with Capital grant fund 2019-20 and is expected to be completed by October 2019.			➢ The DPR will be expected to be ready by 30.08.2020 and the implementation will commence from October 2020 and probable completion is expected by December 2021.
		❖ **Attur Municipality** • No. of sewage outfall identified: 1 Location • Population: 65200 • Qty of Sewage generated: 4.45 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present Mode of Disposal: The black water is collected in septic tanks by individual households. • **Plan of Action:** • In order to treat the black water, construction of **40 KLD Fecal Sludge Treatment Plant** work is	Municipal Administration	Oct-2019	Fecal Sludge Treatment Plant completion plan • December 2019 - 20% • March 2020 - 50% • June 2020 - 80% • August 2020 – 100% ➢ Now the Government has taken up holistic view in abatement of pollution to the river stretches in Tamilnadu and in the sameline Honourable minister for

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Vasista nadhi	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		taken up and is in progress at an estimated cost of **Rs. 4.41 Crore** and it will be completed before **31.12.2019** under **IUDM 2018-19 fund**. • To handle the **sullage water** discharged through **3 no. of major channels** which confluence with the river stretch, it is proposed to provide **in-situ treatment** methodology by providing Screen, Grit followed by Horizontal planted gravel filter which will treat the sullage and discharge the treated water into the water course. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of Rs.165.70 lakh. This fund is proposed to tied up with Capital grant fund 2019-20 and is expected to be completed by October 2019.			Municipal Administration & Water Supply department, Rural Development & Panchayat Raj Department and Special Initiatives has made announcement in the floor of assembly during the demand on Municipal Administration & Water Supply department on 08.07.2019. ➢ Accordingly Tamilnadu Water Investment Company (M/s. TWIC) has appointed as consultant for preparation of DPR. ➢ The DPR will be expected to be ready by 30.08.2020 and the implementation will commence from October 2020 and probable completion is expected by December 2021.

River Thirumanimutharu – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Thirumanimutharu:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thirumanimutharu	Organisation / Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2	Sewage Treatment and Disposal plan	❖ **Salem Corporation** • No. of sewage outfall identified: 8 Nos. • Population: 913188 • Qty of Sewage generated: 100.03 MLD • Status of UGSS: Under Construction • Status of STP: Presently the Salem Corporation has provided 4 Nos of STPs. • **Plan of Action:** • To treat the waste water, the implementation of Under Ground Sewerage scheme work was	Municipal Administration		• 2 no. of STPs at Vellakuttai and Anaimedu are functioning and 4300 House service connections has given. • In package-III, Out of 184.85km length of collection system 165.48km length completed. After getting the permission from the NH Department, remaining length of collection system will be completed • In package-II, Out of 150.65km length of collection system, 72.78km has been completed. For the balance length of collection length work taken up under SMART City Mission and the ensured sewage flow into the Vandipettai STP. • Out of 40000 no. of House

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thirumanimutharu	Organisation / Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		taken up and is under implementation at an estimated cost of Rs.149.39 crore with 4 nos. of STPs with a total capacity of 98.00 MLD and it will be completed by December 2019(Except Package-2). • Package-2 work will be completed on December 2020. • As on date, out of 40000 connections, 2530 no. of Houses service connections were effected and the remaining connections will be effected before December 2019. • After the completion of this scheme work, Outfalls in the		Dec-2019 Dec-2020 Dec-2019	Service connections, In Phase-I Tender called for effecting 20000 no. of House service Connections, in which 4300 House service connections has given and it is connected to Vellakuttai and Anaimedu STPs and remaining connections 15,700 will be effected by December 2019. • In the meantime, temporarily measure carried out to treat the sewage generated in Mankuttai STP.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thirumanimutharu	Organisation / Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		River Thirumanimutharu will be stopped permanently.			

River Sarabanga – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Sarabanga:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Sarabanga	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	**Salem District** **Idappadi Municipality** • No. of sewage outfall identified: 22 Locations • Population: 56193 • Qty of Sewage generated: 5.20 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • **Plan of Action:** ➢ In order to treat the black water, construction of **30kld Fecal**	Municipal Administration	Dec-19	**Fecal sludge Treatment plant** ➢ Bio-mining work is under progress & it will be completed by April 2020. ➢ Construction of FSTP work will be commenced on May 2020 & it will be completed by December 2020.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Sarabanga	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Sludge Treatment Plant work is taken up and is in progress at an estimated cost of **Rs. 4.00 Crore** and it will be completed before **31.12.2019** under **IUDM 2018-19 fund**. ➢ To handle the **sullage water** discharged through **22 no. of major channels** which confluence with the river stretch, it is proposed to provide **in-situ treatment** methodology by providing Screen, Grit followed by Horizontal planted gravel filter which will treat the sullage and discharge the treated water into the water course. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of Rs.250.00 lakh. This fund is proposed to tied up with **Capital grant fund 2019-20** and is			➢ To handle the Sullage water, DPR prepared by TWAD Board at an estimated cost of Rs. 40.40 crore & submitted to TNPCB for fund tie-up.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Sarabanga	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		expected to be completed by **December 2019.**			

River Cauvery – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Salem District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	**Salem District** ❖ **Mettur Municipality** • No. of sewage outfall identified: 11 Locations • Population: 55200 • Qty of Sewage generated: 5.96 MLD • Status of UGSS: Provided • Status of STP: 3 Nos of STP Provided with capacity 7.20 MLD • Present mode of Disposal: **Under Ground Sewerage scheme work** is completed at an estimated cost of Rs.73.09 crore	Municipal Administration	Aug-2019	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		with 3 numbers of STPs of total capacity **7.20 MLD** and **is functioning.** • **Plan of Action:** • As on date, out of **15000 connections**, 7274 number of houses service connections were effected and the remaining connections will be effected before **August 2019**. • After the completion of this scheme work, Outfalls in the River Cauvery will be stopped permanently.			Under Ground Sewerage Scheme work is completed & put into public use. 7274 number of HSCs only give in the field. In which, internal plumbing connections given for 3673 no. of connections. March 2020 - 4500 Nos June 2020 - 6000 Nos September 2020 - 7274 Nos

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Erode District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	❖ **Erode Corporation:** • No. of sewage outfall identified: 4 Locations • Population: 547933 • Qty of Sewage generated: 44.59 MLD • Status of UGSS: Under Construction • Status of STP: 50.55 MLD - STP under construction • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • **Plan of Action:** • **Under Ground Sewerage**	Municipal Administration		• Out of 5 Packages, 3 Packages of Collection system and 1 Package of STP completed. • Under Package-II, out of 105.04km length of collection system, 73.55km length completed and due to poor performance the contract was terminated. • For the balance work in Package-II, tender received and the work will be completed on 30.03.2021 • As on date, 12000 no. of Internal Plumbing HSCs effected & the remaining HSCs will be completed with the following schedule. March 2020 – 20000 June 2020 – 30000 September 2020 – 40000

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		scheme work was taken up and is under implementation at an estimated cost of Rs.209.22 crore with a STP capacity of **50.55 MLD** and it will be completed by **December 2019.** • As on date, out of 72500 connections, 7274 number of house service connections were effected and the remaining connections will be effected before December 2019. • After the completion of this scheme work, Outfalls in the River Cauvery will be stopped permanently.		Dec-2019 Dec-2019	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		❖ **Bhavani Municipality** • No. of sewage outfall identified: Nil • Population: 40270 • Qty of Sewage generated: 3.36 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • **Plan of Action:** • In order to treat the black water, it is proposed to **cluster with Erode STP** and co-treated. • To handle the sullage water	Municipal Administration		➢ Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		discharged through **6 nos. of major channels** which confluence with the river stretch, it is proposed to provide **in-situ treatment** methodology by providing Screen, Grit followed by Horizontal planted gravel filter. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of **Rs. 37.00 lakhs**. This fund is proposed to be tied up with **Infrastructure gap filling fund 2019-20** and is expected to be completed by **October 2019.**		Oct-2019 Oct-2019	

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery in Namakkal District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	**Namakkal District:** • **Komarapalayam Municipality** • No. of sewage outfall identified: 5 Locations • Population: 76120 • Qty of Sewage generated: 5.60 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • **Plan of Action:** • It is proposed to establish **20KLD FSTP** at an estimated cost of Rs.2.50 Crores with the financial assistance of ensuing 2019-20	Municipal Administration	Dec-2019	➢ Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		IUDM funding and is expected to be completed before December 2019. • To handle the **sullage water** discharged through 7 nos. of major channels which confluence with the river stretch, it is proposed to provide **in-situ treatment** methodology by providing Screen, Grit followed by Horizontal planted gravel filter. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of **Rs.1054.00 lakh**. This fund is proposed to be tied up with Infrastructure gap filling fund 2019-20 and is expected to be		Oct-2019	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		completed by **October 2019**.			
		❖ **Palipalayam Municipality** • No. of sewage outfall identified: 8 Locations • Population: 44120 • Qty of Sewage generated: 2.95 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present mode of Disposal: The blackwater is collected in septic tanks by individual households. • **Plan of Action:** • It is proposed to **cluster with Erode STP** and **co-treated.** • To handle the **sullage water** discharged through **7 nos. of major channel** which confluence with the river stretch, it is	Municipal Administration		➢ Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		proposed to provide **in-situ treatment** methodology by providing Screen, Grit followed by Horizontal planted gravel filter. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of **Rs.413.00lakh.** The fund is proposed to be tied up with **Infrastructure gap filling fund 2019-20** and is expected to be completed by **October 2019.**		Oct-2019	

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery in Karur District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2	Sewage Treatment and Disposal plan	**Karur District:** ❖ **Kulithalai Municipality** • No. of sewage outfall identified: Nil • Population: 29580 • Qty of Sewage generated: 2.06 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present Mode of Disposal: • The black water is collected in septic tanks by individual households. **Plan of Action:** ➢ In order to treat the black water, construction of **20KLD Fecal Sludge Treatment**	Municipal Administration		➢ Construction of 20KLD Fecal Sludge Treatment Plant work is under progress and 50% of work was completed. March 2020- 70% June 2020 -100% ➢ In the meantime, Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Plant work is taken up and is in progress at an estimated cost of Rs.2.85Crore and it will be completed before**31.12.2019** under **IUDM 2018-19**fund. ➢ To handle the **sullage water** discharged through **3 no. of major channels** which confluencewith the river stretch, it is proposed to provide **in-situ treatment** methodology by providing Screen, Grit followed by Horizontal planted gravel filter which will treat the sullage and discharge the treated water into the water course. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of **Rs.13.00 lakh**. This fund is proposed to be tied up with		Dec-2019	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Capital Grant fund 2019-20and is expected to be completed by **October 2019.**		Oct-2019	

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Trichy District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	❖ **Trichy District:** ❖ **Trichy Corporation** • No. of sewage outfall identified: Nil • Population: 1054859 • Qty of Sewage generated: 105.24 MLD • Status of UGSS: Under Ground Sewerage scheme work is completed fully in 24 wards and partially in 25 wards. • Status of STP: **STP** capacity of **58MLD** and treated sewage water let out as per GOI norms. • Present mode of Disposal:	Municipal Administration		

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Treated through Sewage Treatment Plant. • **Plan of Action:** • To cover the remaining **41 wards** (16 wards fully &25 wards partially) under **AMRUT** scheme **Under Ground Sewerage scheme work**in **2 phases** were taken up for implementation. Of which one phase will have a **37MLD capacity STP** and it is expected to be completed by June 2021 and **Phase-II** will be completed by **June 2022.**		Phase-I June-2021 Phase-II June-2022	**Under Ground Sewerage scheme** **Phase-II:** 27% of work completed. **Phase-III:** Work to be Commenced.

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery in Thanjavur District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	**Thanjavur District:** ❖ **Kumbakonam Municipality** • No. of sewage outfall identified: Nil • Population: 142143 • Total households: 36105 • Qty of Sewage generated: 12.80 MLD • Status of UGSS: • Under Ground Sewerage scheme work is completed in 45 wards with 1 no. of 17.00 MLD capacity STP and the treated sewage water is let out as per GOI norms. • Status of STP: Provided • Present mode of Disposal:	Municipal Administration		➢ 70% of work completed and the remaining work will be completed before March 2020.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Treated through STP with capacity 17.0 MLD • **Plan of Action:** • To cover the left out portions of all 45 wards, under AMRUT scheme Under Ground Sewerage scheme work is in progress with rehabilitation of STP is also under progress and it will be completed before June 2020.		June-2020	

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Nagappattinam District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	**Nagappatinam District:** ❖ **Mayiladuthurai Municipality** • No. of sewage outfall identified: Nil • Population: 90112 • Total Households: 21867 • Qty of Sewage generated: 5.58 MLD • Status of UGSS: Under Ground Sewerage scheme work is completed fully in 22 wards and partially in 7 wardswith 1 no. of 5.80 MLD capacity STPand treated sewage water let out as per GOI norms. • Status of STP: 5.80 MLD capacity STP provided.	Municipal Administration		➢ Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• **Present mode of Sewage Disposal:** Treated through STP. • **Plan of Action:** ➢ To cover the **remaining 14 wards** (7 wards fully & 7 wards partially)the process of preparing Detailed project report is under progress. ➢ Once the DPR is ready by September 2019, after the fund tie-up under appropriate schemes, implementation will commence and expected to be **completed by May 2022.**		May-2022	

River Bhavani – Action Plan (Priority-IV)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Bhavani:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2.	Sewage Treatment and Disposal plan	**Coimbatore District** ❖ **Mettupalayam Municipality** • No. of sewage outfall identified: 3Locations • Population: 80217 • Qty of Sewage generated: 7.08 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided • Present Mode of Disposal: Let-out into River through drains. **Plan of Action:** • UGDSS work is under implementation at an estimated cost of Rs.91.70crore with a STP	Municipal Administration		**Under Ground Sewage Scheme:** ➢ Package 1 – 36% ➢ Package 2 – 60% ➢ STP -- 30% completed ➢ 100% will be completed on March 2021.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		capacity of 8.65MLD after completion of scheme only the treated sewage will be discharged. • 17000 number of house service connections will be effected parallel during the project itself • After the completion of this scheme work, Outfalls in the River Bhavani will be stopped permanently and only treated water will be discharged.		**June 2020**	
		Erode District: ❖ **Erode Corporation** • No. of sewage outfall identified: 1 location • Population: 547933 • Qty of Sewage generated: 44.59 MLD	Municipal Administration		• Out of 5 Packages, 3 Packages of Collection system and 1 Package of STP completed. • Under Package-II, out of 105.04km length of collection system, 73.55km

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Status of UGSS: Not Provided • Status of STP: Not Provided • Present Mode of Disposal: • Let-out into river through drains. • The black water is collected in septic tanks by individual households. **Plan of Action:** • Under Ground Sewerage scheme work was taken up and is under implementation at an estimated cost of Rs.209.22 crore with a STP capacity of 50.55 MLD. • As on date, out of 72500 connections, 7274 number of house service connections was effected and the remaining connections will be effected before		**Dec-2019** **Dec-2019**	length completed and due to poor performance the contract was terminated. • For the balance work in Package-II, tender received and the work will be completed on 30.03.2021 • As on date, 12000 no. of Internal Plumbing HSCs effected & the remaining HSCs will be completed with the following schedule. March 2020 – 20000 June 2020 – 30000 September 2020 – 40000

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		December 2019. • After the completion of this scheme work, Outfalls in the River Bhavani will be stopped permanently.			
		Erode District • **Gopichettipalayam Municipality** • No. of sewage outfall identified: Nil • Population: 63633 • Qty of Sewage generated: 4.90 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided **Present Mode of Disposal:** • Let-out into River through drains • The black water is collected in	Municipal Administration		➢ Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		septic tanks by individual households • Sullage water generated from the town is discharged to Keeripalamodai which belongs to PWD. • **Plan of Action:** • Proposed to establish 20KLD FSTP at an estimated cost of Rs.2.50crore with the financial assistance of ensuing 2019-20 IUDM funding. Expected to be completed by December 2019. • Sullage water generated from the town is discharged to Keeripalam odai. PWD has proposed to rejuvenate the odai at an estimated cost of Rs.55.20crore		**Dec-2019**	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		and to construct a STP of 5MLD capacity along the Thadapalli canal at an estimated cost of Rs.12.41 crore with the financial assistance from NABARD and the work is expected to complete by December 2020. • After implementation treated water will be discharged.		**Dec-2020**	
		Erode District ❖ **Sathyamanagalam Municipality** • No. of sewage outfall identified: 5 Locations • Population: 38194 • Qty of Sewage generated: 2.90 MLD • Status of UGSS: Not Provided • Status of STP: Not Provided	Municipal Administration		➢ Honourable Chief minister has made announcement for massive rejuvenation programme for cauvery and its tributaries on 20.07.2019. ➢ Accordingly the DPR is under preparation by PWD in Nadanthai Vaazhi Cauvery Scheme. **Under Ground Sewage Scheme:** ➢ 70% Completed. ➢ 100% will be completed on April 2020.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Present Mode of Disposal: • Let-out into River through drains • The black water is collected in septic tanks by individual households **Plan of Action:** • Under Ground Sewerage scheme work was taken up and is under implementation at an estimated cost of Rs.54.26 crore with 2 no. of STPs of 5.38MLD capacity and it will be completed by Dec-2019 and after completion of scheme work the sewage will be discharged into STP. • 7200 number of house service connections will be effected parallel during the project itself and it will be completed on December 2019. • After the completion of this scheme work, Outfalls in the River Bhavani will be stopped		**Dec-2019** **Dec-2019**	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		permanently.			

River Thamirabarani – Action Plan (Priority-V)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Thamirabarani:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
2	Sewage Treatment and Disposal plan.	❖ **Tirunelveli District** **Tirunelveli Corporation:** • No. of sewage outfall identified: 6 Nos. • Population: 513284 • Total No. of Households: 159628 • Qty of Sewage generated: 56.46 MLD • Status of UGSS: **Under Ground Sewerage scheme work** is completed and functional **in 10 wards (fully)** and **12 wards (partially)** with an **STP** capacity of **24.20MLD** and treated sewage water let out as per GOI norms.	Municipal Administration		**Under Ground Sewage Scheme:** **Phase-II** ➢ 37% Completed. ➢ 100% will be completed on December 2021. **Phase-III** ➢ 13% Completed. ➢ 100% will be completed on December 2021.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Status of STP: 24.20 MLD STP Provided. • Present mode of Disposal: Treated through Sewage Treatment Plant for 10 wards only. • **Plan of Action:** • To cover the remaining **wards** (33 wards fully & 12 wards partially) **Under Ground Sewerage scheme work** in **2 phases** were taken up for implementation at an estimated cost of Rs.729.20crore with financial assistance of AMRUT & ADB. Of which phase-II sewage generated will be treated in Phase-I STP and Phase-III will have a **34.00MLD capacity STP. The scheme is** expected to be		**Dec-2021**	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		completed by **December 2021**.			
		❖ **Ambasamudram Municipality** • No. of sewage outfall identified: 1- Sewage into Irrigation Channel out-fall (ICO) • Population: 38850 • Total No. of Households: 15176 • Qty of Sewage generated: 2.98 MLD • Status of UGSS: Not provided • Status of STP: Not Provided • **Present mode of Disposal:** The blackwater is collected in septic tanks by individual households. • **Plan of Action:** • In order to treat the black water, construction of **30KLD Faecal Sludge Treatment Plant** work is	Municipal Administration		**<u>Fecal Sludge Treatment Plant completion plan</u>** • January 2020 - 26% • March 2020 - 50% • June 2020 - 100% ➢ Now the Government has taken up holistic view in abatement of pollution to the river stretches in Tamilnadu and in the sameline Honourable minister for Municipal Administration & Water Supply department, Rural Development & Panchayat Raj Department and Special Initiatives has made announcement in the floor of assembly during the demand on Municipal Administration & Water Supply department on 08.07.2019. ➢ Accordingly Tamilnadu Water

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		taken up and is in progress at an estimated cost of Rs.3.15Crore and it will be completed before **31.12.2019** under **IUDM 2018-19** funds. • To handle the **sullage water** discharged through 7 nos. of major channel which confluence with the river stretch. It is proposed to provide in-situ treatment methodology by providing Screen, Grit followed by Horizontal planted gravel filter. • The ULB has prepared detailed estimate for establishing liquid waste treatment facility at a cost of **Rs.77.00 lakh**. This fund is proposed to be tied up with		**Dec-2019** **Oct-2019**	Investment Company (M/s. TWIC) has appointed as consultant for preparation of DPR. ➢ The DPR will be expected to be ready by 30.08.2020 and the implementation will commence from October 2020 and probable completion is expected by December 2021.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Infrastructure gap filling fund 2019-20 and is expected to be completed by **October 2019.**			
		❖ **Vickramasingampuram Municipality** • No. of sewage outfall identified: 2 - Sewage into Irrigation Channel out-fall (ICO) • Population: 47163 • Total No. of Households: 19370 • Qty of Sewage generated: 2.98 MLD • Status of UGSS: Not provided • Status of STP: Not provided • **Present mode of Disposal:** The **blackwater** is collected in septic tanks by individual households.	Municipal Administration		**<u>Fecal Sludge Treatment Plant completion plan</u>** • January 2020 - 57% • March 2020 - 75% • May 2020 - 100% ➢ Now the Government has taken up holistic view in abatement of pollution to the river stretches in Tamilnadu and in the sameline Honourable minister for Municipal Administration & Water Supply department, Rural Development & Panchayat Raj Department and Special Initiatives has made announcement in the floor of assembly during the demand on Municipal Administration & Water Supply department on

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• **Plan of Action:** • In order to treat the black water, construction of **30KLD Faecal Sludge Treatment Plant** work is taken up and is in progress at an estimated cost of Rs.3.00Crore and it will be completed before **31.12.2019** under **IUDM 2018-19** fund. • To handle the **sullage water** discharged through **12** nos. of major channel which confluence with the river stretch. It is proposed to provide in-situ treatment methodology by providing Screen, Grit followed by Horizontal planted gravel filter. • The ULB has prepared detailed		**Dec-2019**	08.07.2019. ➢ Accordingly Tamilnadu Water Investment Company (M/s. TWIC) has appointed as consultant for preparation of DPR. ➢ The DPR will be expected to be ready by 30.08.2020 and the implementation will commence from October 2020 and probable completion is expected by December 2021.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		estimate for establishing liquid waste treatment facility at a cost of **Rs.1.20crore**. This fund is proposed to be tied up with **Infrastructure gap filling fund 2019-20** and is expected to be completed by **October 2019.**		**Oct-2019**	

Annexure II - Liquid Waste Status - - Summary of Action Taken								
District	**Town**	**Population**	**Sewage Generation**	**STP capacity**	**STP capacity Working**	**STP capacity under construction/proposed**	**Gap in Treatment Capacity**	**Remarks**
			In MLD					
River - Vasista								
Salem	Narasingapuram	26000	1.28	0		0.04	1.28	Septage from the town to be treated in Attur FSTP DPR for treatment of Sullage water (in situ treatment of drains) is under preparation, work to be completed by Dec- 2021
Salem	Attur	65200	4.45				4.45	40 KLD FSTP under construction. DPR for treatment of Sullage water (in situ treatment of drains) is under preparation, work to be completed by Dec- 2021
River - Thirumanimutharu								
Salem	Salem	913188	100.03	98	19	79	2.03	2 stp's of 19 MLD capacity constructed, 1 STP of 35 MLD capacity to be constructed by June, 2020 and 1 STP of 44 MLD capacity to be constructed by March, 2021. STP utilization only 19% in 2 completed STP's. CMA to expedite the work of Sewerage network, HSC's
River - Sarbanga								
Salem	Idappadi	56193	5.2			0.03	5.20	22 outfalls. 30 KLD FSTP construction to start in May, 2020 and to be completed by December, 2020. DPR for treatment of Sullage water submitted.
River - Cauvery								
Salem	Mettur	55200	5.96	7.2	7.2	0	0	3 STP constructed. HSC to be completed by September, 2020.
Erode	Erode	547933	44.49	50.55	50.55		0	STP completed - 8-9 MLD received. HSC and Sewerage network to be completed by September, 2020

Annexure II - Liquid Waste Status - - Summary of Action Taken								
District	**Town**	**Population**	**Sewage Generation**	**STP capacity**	**STP capacity Working**	**STP capacity under construction/proposed**	**Gap in Treatment Capacity**	**Remarks**
			In MLD					
Erode	Bhavani	40270	3.36				3.36	6 outfalls. DPR for treatment of Sullage water under preparation under Cauvery Rejuvenation.
Namakkal	Komarapalayam	76120	5.6				5.6	7 outfalls. DPR for treatment of wastewater under preparation under Cauvery Rejuvenation.
Namakkal	Palipalayam	44120	2.95				2.95	7 outfalls. DPR for treatment of wastewater under preparation under Cauvery Rejuvenation.
Karur	Kaluthalai	29580	2.06			0.02	2.06	3 outfalls. 20 KLD FSTP to be completed by June, 2020. DPR for treatment of sullage wastewater under preparation under Cauvery Rejuvenation.
Trichy	Trichy	1054859	105.24	95	58	37	10.24	Around 40 MLD received at STP. 37 MLD STP to be completed by June 2021 and complete Sewerage network to be completed by June 2022.
Thanjavur	Kumbakonam	142143	12.8	17	17		0	Sewerage network and HSC's to be completed by 2020.
Nagappattinam	Mayiladuthurai	90112	5.58	5.8	5.8		0	DPR for unsewered area under preparation and work to be completed by May, 2022.
				River - Bhavani				
Coimbatore	Mettpalayam	80217	7.08	8.65		8.65	0	STP to be completed by March, 2021.
Erode	Erode	547933	44.49	50.55	50.55		0	STP completed - 8-9 MLD received. HSC and Sewerage network to be completed by September, 2020

Annexure II - Liquid Waste Status - - Summary of Action Taken								
District	**Town**	**Population**	**Sewage Generation**	**STP capacity**	**STP capacity Working**	**STP capacity under construction/proposed**	**Gap in Treatment Capacity**	**Remarks**
			In MLD					
Erode	Gopichettipalayam	63633	4.9	5		5	0	20 KLD FSTP for Septage treatment and 5 MLD to treat Sullage water proposed. However not started and now project to be taken under Cauvery River Rejuvenation Project.
Erode	Sathyamanagalam	38194	2.9	5		5	0	5 No.of outfalls. 5.0 MLD (2 no) u/c. 1 STP will be completed by April, 2020 and 2nd STP to be constructed by Dec, 2020.
River Thamirabarani								
Tirunelveli	Tirunelveli	513284	56.46	58.2	24.2	34	0	34 MLD STP capacity to be constructed by June 2022. Due to local agitation against the existing 24.20 MLD (based on WSP), it has been decided to construct a new 58.0 MLD treatment plant based on latest technology. Ex. STP is receiving around 8-9 MLD Sewage
Tirunelveli	Ambasamudram	38850	2.98	0.03		0.03	2.95	7 No. of outfalls. 30 KLD FSTP u/c, to be constructed by June 2020. Treatment of Sullage water through drains - DPR to be completed by September, 2020, and STP to be completed Dec - 2021
Tirunelveli	Vickramasingampuram	47163	2.98	0.03		0.03	2.95	12 No. of outfalls. 30 KLD FSTP u/c, to be constructed by June 2020. Treatment of Sullage water through drains - DPR to be completed by September, 2020, and STP to be completed Dec - 2021

Annexure II - Liquid Waste Status - - Summary of Action Taken								
District	**Town**	**Population**	**Sewage Generation**	**STP capacity**	**STP capacity Working**	**STP capacity under construction/proposed**	**Gap in Treatment Capacity**	**Remarks**
			In MLD					
River - Vasista								
Salem	Narasingapuram	26000	1.28	0		0.04	1.28	Septage from the town to be treated in Attur FSTP DPR for treatment of Sullage water (in situ treatment of drains) is under preparation, work to be completed by Dec- 2021
Salem	Attur	65200	4.45				4.45	40 KLD FSTP under construction. DPR for treatment of Sullage water (in situ treatment of drains) is under preparation, work to be completed by Dec- 2021
River - Thirumanimutharu								
Salem	Salem	913188	100.03	98	19	79	2.03	2 stp's of 19 MLD capacity constructed, 1 STP of 35 MLD capacity to be constructed by June, 2020 and 1 STP of 44 MLD capacity to be constructed by March, 2021. STP utilization only 19% in 2 completed STP's. CMA to expedite the work of Sewerage network, HSC's
River - Sarbanga								
Salem	Idappadi	56193	5.2			0.03	5.20	22 outfalls. 30 KLD FSTP construction to start in May, 2020 and to be completed by December, 2020. DPR for treatment of Sullage water submitted.
River - Cauvery								
Salem	Mettur	55200	5.96	7.2	7.2	0	0	3 STP constructed. HSC to be completed by September, 2020.
Erode	Erode	547933	44.49	50.55	50.55		0	STP completed - 8-9 MLD received. HSC and Sewerage network to be completed by September, 2020

Annexure II - Liquid Waste Status - - Summary of Action Taken								
District	**Town**	**Population**	**Sewage Generation**	**STP capacity**	**STP capacity Working**	**STP capacity under construction/proposed**	**Gap in Treatment Capacity**	**Remarks**
			In MLD					
Erode	Bhavani	40270	3.36				3.36	6 outfalls. DPR for treatment of Sullage water under preparation under Cauvery Rejuvenation.
Namakkal	Komarapalayam	76120	5.6				5.6	7 outfalls. DPR for treatment of wastewater under preparation under Cauvery Rejuvenation.
Namakkal	Palipalayam	44120	2.95				2.95	7 outfalls. DPR for treatment of wastewater under preparation under Cauvery Rejuvenation.
Karur	Kaluthalai	29580	2.06			0.02	2.06	3 outfalls. 20 KLD FSTP to be completed by June, 2020. DPR for treatment of sullage wastewater under preparation under Cauvery Rejuvenation.
Trichy	Trichy	1054859	105.24	95	58	37	10.24	Around 40 MLD received at STP. 37 MLD STP to be completed by June 2021 and complete Sewerage network to be completed by June 2022.
Thanjavur	Kumbakonam	142143	12.8	17	17		0	Sewerage network and HSC's to be completed by 2020.
Nagappattinam	Mayiladuthurai	90112	5.58	5.8	5.8		0	DPR for unsewered area under preparation and work to be completed by May, 2022.
				River - Bhavani				
Coimbatore	Mettpalayam	80217	7.08	8.65		8.65	0	STP to be completed by March, 2021.
Erode	Erode	547933	44.49	50.55	50.55		0	STP completed - 8-9 MLD received. HSC and Sewerage network to be completed by September, 2020

Annexure II - Liquid Waste Status - - Summary of Action Taken								
District	**Town**	**Population**	**Sewage Generation**	**STP capacity**	**STP capacity Working**	**STP capacity under construction/proposed**	**Gap in Treatment Capacity**	**Remarks**
			In MLD					
Erode	Gopichettipalayam	63633	4.9	5		5	0	20 KLD FSTP for Septage treatment and 5 MLD to treat Sullage water proposed. However not started and now project to be taken under Cauvery River Rejuvenation Project.
Erode	Sathyamanagalam	38194	2.9	5		5	0	5 No.of outfalls. 5.0 MLD (2 no) u/c. 1 STP will be completed by April, 2020 and 2nd STP to be constructed by Dec, 2020.
River Thamirabarani								
Tirunelveli	Tirunelveli	513284	56.46	58.2	24.2	34	0	34 MLD STP capacity to be constructed by June 2022. Due to local agitation against the existing 24.20 MLD (based on WSP), it has been decided to construct a new 58.0 MLD treatment plant based on latest technology. Ex. STP is receiving around 8-9 MLD Sewage
Tirunelveli	Ambasamudram	38850	2.98	0.03		0.03	2.95	7 No. of outfalls. 30 KLD FSTP u/c, to be constructed by June 2020. Treatment of Sullage water through drains - DPR to be completed by September, 2020, and STP to be completed Dec - 2021
Tirunelveli	Vickramasingampuram	47163	2.98	0.03		0.03	2.95	12 No. of outfalls. 30 KLD FSTP u/c, to be constructed by June 2020. Treatment of Sullage water through drains - DPR to be completed by September, 2020, and STP to be completed Dec - 2021

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
River - Vasista								
Salem	Narasingapuram	26000	Total 7 TPD Wet Waste - 4 TPD Dry Waste - 3 TPD	8	8		0	MSW facility for wet waste completed. 100% Collection and Segregation. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
Salem	Attur	65200	Total 18 TPD Wet Waste - 10 TPD Dry Waste - 8 TPD	10	10		0	MSW facility for wet waste completed. 100% Collection and Segregation. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
River - Thirumanimutharu								
Salem	Salem	913188	Total 370 TPD Wet Waste - 215 TPD Dry Waste - 155 TPD	220	105	115		115 TPD MSW facility for wet waste to be completed by June, 2020. 100% Collection and 94 % Segregation. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
River - Sarbanga								
Salem	Idappadi	56193	Total 16TPD Wet Waste - 9 TPD Dry Waste - 7 TPD	15.5	15.5			MSW facility for wet waste existing. 100% Collection. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
River - Cauvery								
Salem	Mettur	55200	Total 15TPD Wet Waste - 9 TPD Dry Waste - 6 TPD	14.5	14.5	0	0	MSW facility for wet waste complete. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no. 5 TPD completed and Gas used for internal Lighting in compost yard
Erode	Erode	547933	Total 170 TPD Wet Waste - 85 TPD Dry Waste - 85 TPD	85	85		0	MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no. 10 TPD completed. 95% Collection & 90% segregation
Erode	Bhavani	40270	Total 15 TPD Wet Waste - 9 TPD Dry Waste - 6 TPD	10	10			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection & 97% segregation
Namakkal	Komarapalaya	76120	Total 22 TPD Wet Waste - 14 TPD Dry Waste - 8 TPD	15.5	15.5			MSW facility for wet waste existing. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
Namakkal	Palipalayam	44120	Total 12 TPD Wet Waste - 7 TPD Dry Waste - 5 TPD	7	7			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no. 5 TPD completed and Gas used for internal Lighting.
Karur	Kaluthalai	29580	Total 7 TPD Wet Waste - 4 TPD Dry Waste - 3 TPD	9	9			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
Trichy	Trichy	1054859	Total 390 TPD Wet Waste - 222 TPD Dry Waste - 168 TPD	235	222	13		222 TPD MSW facility for wet waste completed, 13 TPD pending due to site issues . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 2 no. 7 TPD completed, Gas used in Community Kichen and Crematorium. 100% Collection & 92% segregation
Thanjavur	Kumbakona m	142143	Total 70 TPD Wet Waste - 41 TPD Dry Waste - 29 TPD	42	42			MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no 5 TPD working.

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
Nagappattinam	Mayiladuthurai	90112	Total 32 TPD Wet Waste - 18 TPD Dry Waste - 14 TPD	19.5	19.5			MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
River - Bhavani								
Coimbatore	Mettpalayam	80217	Total 24 TPD Wet Waste - 12 TPD Dry Waste - 12 TPD	12	12		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.Bio Methanation - 1 no 3 TPD working. 100% Collection and 87% Segregation
Erode	Gopichettipal	63633	Total 20 TPD Wet Waste - 11 TPD Dry Waste - 9 TPD	11	11		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.Bio Methanation - 1 no 1 TPD working. 100% Collection and 96% Segregation
Erode	Sathyamanagalam	38194	Total 12 TPD Wet Waste - 7 TPD Dry Waste - 5 TPD	7.5	7.5		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection and Segregation

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
River Thamirabarani								
Tirunelveli	Tirunelveli	513284	Total 170 TPD Wet Waste - 97 TPD Dry Waste - 73 TPD	109.5	109.5		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.Bio Methanation - 1 no 5 TPD working. 97% Collection and 80 % Segregation.
Tirunelveli	Ambasamudr am	38850	Total 15 TPD Wet Waste - 9 TPD Dry Waste - 6 TPD	10	7	3		7 TPD MSW facility for wet waste completed, 3 TPD U/C . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection & 95% segregation
Tirunelveli	Vickramasing ampuram	47163	Total 21 TPD Wet Waste - 12.60 TPD Dry Waste - 8.40 TPD	16	16			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection & 95% segregation

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
River - Vasista								
Salem	Narasingapuram	26000	Total 7 TPD Wet Waste - 4 TPD Dry Waste - 3 TPD	8	8		0	MSW facility for wet waste completed. 100% Collection and Segregation. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
Salem	Attur	65200	Total 18 TPD Wet Waste - 10 TPD Dry Waste - 8 TPD	10	10		0	MSW facility for wet waste completed. 100% Collection and Segregation. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
River - Thirumanimutharu								
Salem	Salem	913188	Total 370 TPD Wet Waste - 215 TPD Dry Waste - 155 TPD	220	105	115		115 TPD MSW facility for wet waste to be completed by June, 2020. 100% Collection and 94 % Segregation. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
River - Sarbanga								
Salem	Idappadi	56193	Total 16TPD Wet Waste - 9 TPD Dry Waste - 7 TPD	15.5	15.5			MSW facility for wet waste existing. 100% Collection. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
River - Cauvery								
Salem	Mettur	55200	Total 15TPD Wet Waste - 9 TPD Dry Waste - 6 TPD	14.5	14.5	0	0	MSW facility for wet waste complete. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no. 5 TPD completed and Gas used for internal Lighting in compost yard
Erode	Erode	547933	Total 170 TPD Wet Waste - 85 TPD Dry Waste - 85 TPD	85	85		0	MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no. 10 TPD completed. 95% Collection & 90% segregation
Erode	Bhavani	40270	Total 15 TPD Wet Waste - 9 TPD Dry Waste - 6 TPD	10	10			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection & 97% segregation
Namakkal	Komarapalaya	76120	Total 22 TPD Wet Waste - 14 TPD Dry Waste - 8 TPD	15.5	15.5			MSW facility for wet waste existing. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
Namakkal	Palipalayam	44120	Total 12 TPD Wet Waste - 7 TPD Dry Waste - 5 TPD	7	7			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no. 5 TPD completed and Gas used for internal Lighting.
Karur	Kaluthalai	29580	Total 7 TPD Wet Waste - 4 TPD Dry Waste - 3 TPD	9	9			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
Trichy	Trichy	1054859	Total 390 TPD Wet Waste - 222 TPD Dry Waste - 168 TPD	235	222	13		222 TPD MSW facility for wet waste completed, 13 TPD pending due to site issues . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 2 no. 7 TPD completed, Gas used in Community Kichen and Crematorium. 100% Collection & 92% segregation
Thanjavur	Kumbakona m	142143	Total 70 TPD Wet Waste - 41 TPD Dry Waste - 29 TPD	42	42			MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. Bio Methanation - 1 no 5 TPD working.

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
Nagappattinam	Mayiladuthurai	90112	Total 32 TPD Wet Waste - 18 TPD Dry Waste - 14 TPD	19.5	19.5			MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.
River - Bhavani								
Coimbatore	Mettpalayam	80217	Total 24 TPD Wet Waste - 12 TPD Dry Waste - 12 TPD	12	12		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.Bio Methanation - 1 no 3 TPD working. 100% Collection and 87% Segregation
Erode	Gopichettipal	63633	Total 20 TPD Wet Waste - 11 TPD Dry Waste - 9 TPD	11	11		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.Bio Methanation - 1 no 1 TPD working. 100% Collection and 96% Segregation
Erode	Sathyamanagalam	38194	Total 12 TPD Wet Waste - 7 TPD Dry Waste - 5 TPD	7.5	7.5		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection and Segregation

Annexure III - Solid Waste - Summary of Action Taken								
District	**Town**	**Population**	**MSW Generation**	**MSW capacity (Wet Waste)**	**MSW capacity Working(Wet Waste)**	**MSW capacity u/c/propose d (Wet Waste)**	**Gap in Treat. Capacity**	**Remarks**
			In TPD					
River Thamirabarani								
Tirunelveli	Tirunelveli	513284	Total 170 TPD Wet Waste - 97 TPD Dry Waste - 73 TPD	109.5	109.5		0	MSW facility for wet waste completed . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas.Bio Methanation - 1 no 5 TPD working. 97% Collection and 80 % Segregation.
Tirunelveli	Ambasamudr am	38850	Total 15 TPD Wet Waste - 9 TPD Dry Waste - 6 TPD	10	7	3		7 TPD MSW facility for wet waste completed, 3 TPD U/C . Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection & 95% segregation
Tirunelveli	Vickramasing ampuram	47163	Total 21 TPD Wet Waste - 12.60 TPD Dry Waste - 8.40 TPD	16	16			MSW facility for wet waste completed. Part of Dry Waste Sold Out to vendor. Non biogradable is stored at earmarked location and Inert & C& D waste is used for filling low lying areas. 100% Collection & 95% segregation

Annexure III - ACTION TAKEN STATUS
River Vasista – Action Plan (Priority-I)
Proposed Short Term and Long Term Action Plan for Rejuvenation of River Vasista nadhi:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Vasista nadhi	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3	Solid Waste Management and Disposal Plan	❖ **Salem District** ❖ **Narasingapuram Municipality** • No. of MSW dumping points identified: 1 • Population: 26000 • Qty of MSW Generated: Wet waste: 4 TPD Dry waste: 3 TPD Total: 7 TPD MSW Collection – 94% MSW Segregation – 87% Present Treatment Method: Wet waste: Nil Dry waste: 3 TPD • Other saleable waste (Plastic, Rubber, Metal etc.,) of 1.8 Tonne sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 0.9 TPD is stored in the earmarked location at MCC, Appamasamudhram. • Inert and Silt 0.3 TPD stored along with C&D waste. Used for Filling Low Lying Areas	Municipal Administration		100% Collection & Segregation achieved.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Vasista nadhi	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Proposed Plan of Action: • Wet Waste of 4 TPD are proposed as below: Micro Composting Plant – 3Nos. of 8 TPD (Will be completed before April 2019-SBM Funds) ❖**Attur Municipality** • No. of MSW dumping points identified: Nil • Population: 65200 • Qty of MSW Generated: Wet waste: 10 TPD Dry waste: 8 TPD Total: 18 TPD MSW Collection – 90% MSW Segregation – 84% Present Treatment Method: Wet waste: Nil Dry waste: 8 TPD • Other saleable waste (Plastic, Rubber, Metal etc.,) of 4.8 Tonne sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 2.4 TPD is stored in the earmarked location at Thennakudipalayam.	Municipal Administration	Apr-2019	Completed

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Vasista nadhi	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Inert and Silt 0.8 TPD stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action:** • Wet Waste of 10 TPD are proposed as below: Micro Composting Plant – 5Nos. of 15TPD (Will be completed before April 2019-SBM Funds)		Apr-2019	Completed

River Thirumanimutharu – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Thirumanimutharu:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thirumanimutharu	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3	Solid Waste Management and Disposal Plan	❖ **Salem Corporation** • No. of MSW dumping points identified: 7 • Population: 913188 • Qty of MSW Generated: Wet waste: 215 TPD Dry waste: 155 TPD Total: 370 TPD MSW Collection – 100% MSW Segregation – 74% Present Treatment Method: Wet waste: Bio-methanation-2Nos – 8 TPD Dry waste: • Saleable waste - 93 TPD • The Non-Biodegradable waste - 47 TPD - stored in the RRC at all MCCs. • Inert &Silt - 15 TPD stored with C&D waste for land filling. **Proposed Plan of Action:**	Municipal Administration	100% Segregation will be achieved before 30.06.2019.	94% Segregation achieved. 100% target will be achieved before May 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thirumanimutharu	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		1. Micro Composting Plant – 30 Nos. of 150 TPD (Will be completed before April 2019 SBM Funds and 2. Additional 10 Nos MCC of 50 TPD will be established before October 2019 utilizing Corporation Revenue fund 3. On – Site Composting – 86 locations – 20 TPD (Will be completed before April 2019)		April - 2019 Oct- 2019 April 2019	17 Nos Micro Composting Plant with capacity of 85 TPD completed and remaining 13 nos will be completed before June 2020 Onsite Site Composting - Completed

River Sarabanga – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Sarabanga:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Sarabanga	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	**Salem District** ❖ **Idappadi Municipality** • No. of MSW dumping points identified: Nil • Population: 56193 • Qty of MSW Generated: Wet waste: 9 TPD Dry waste: 7 TPD Total: 16 TPD MSW Collection – 100% MSW Segregation – 86% Present Treatment Method: Wet waste: Micro composting-5Nos – 15 TPD On-site composting facility – 2Nos – 0.5 TPD. Dry waste: • Saleable waste - 4 TPD • The Non saleable /Non-Biodegradable waste – 2.3 TPD - stored in the RRC at all MCCs.	Municipal Administration	Dec-2019	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Sarabanga	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Inert &Silt – 0.7 TPD stored with C&D waste for land filling. **Proposed Plan of Action: Nil** MSW Treatment Facility provided.			

River Cauvery – Action Plan (Priority-I)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Salem District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3	Solid Waste Management and Disposal Plan	❖ **Salem District** • **Mettur Municipality** • No. of MSW dumping points identified: 1 location • Population: 55200 • Households: 12501 • Qty of MSW Generated: Wet waste: 9 TPD Dry waste: 6 TPD Total: 15 TPD MSW Collection – 87% MSW Segregation – 52% Present Treatment Method: **Wet waste:** • On – Site Composting – 3 locations – 0.5 TPD (Completed and put to use). • Bio Methanation– 1 no. of 5TPD (Completed and put to Use)- Gas Used for Internal Lighting in compost yard. **Dry waste:**	Municipal Administration		

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Saleable waste of 4 TPD sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 1.50 TPD is stored in the RRC at KombaranKaadu. • Inert &Silt -0.50TPD Stored along with C&D waste. Used for Filling Low Lying Areas. **Proposed Plan of Action:** • **Wet Waste:** ✓ Micro Composting Plant – 3Nos. of 9TPD (Will be completed before June 2019).		June-2019	Completed

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Erode District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	❖ **Erode Corporation** • No. of MSW dumping points identified: 2 Locations • Population: 547933 • Qty of MSW Generated: Wet waste: 85 TPD Dry waste: 85 TPD Total: 170 TPD MSW Collection – 87% MSW Segregation – 49% Present Treatment Method: **Wet waste: - 85 TPD** • On – Site Composting – 25 locations – 5 TPD (Completed and put to use) • Bio Methanation– 1 nos. of 10 TPD (functioning) **Dry waste: - 85 TPD** • Saleable waste (Plastic, Metal & Rubber) of 35 TPD sold out to the identified vendors & registers are being maintained. • The Non saleable Non	Municipal Administration	100% will be achieved before 30.06.19	Collection 95% achieved & 90% segregation achieved. 100% Target will be achieved before June 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Biodegradable waste of 20 TPD is stored in the earmarked location at Vendipalayam. • Inert & Silt - 20 TPD Stored along with C&D waste. Used in Filling Low Lying Areas. **Proposed Plan of Action:** **Wet-waste:** 1. Micro Composting Plant – 19 Nos. of 50 TPD (Will be completed before Aug 2019 and 5 Nos of 20 TPD will be completed by Oct 2019.) **Dry waste:** • It is proposed to supply 30 TPD of dry waste to Incinerator for Combustible. All ready Available Incinerator - 1nos -5 TPD. • Bio-mining of Vairapalayam Dump yard on the banks of River Cauvery-work will be commenced in May 2019 & completed in March 2020- Funding under SMART CITY.		Oct-2019 March-2020	Completed Completed and put in use Biomining work is in progress and will be completed by 29.2.2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Inert & Silt- 1TPD Stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action:Nil** • MSW Treatment Facility provided.			
		❖ **Bhavani Municipality** • No. of MSW dumping points identified: Nil • Population: 40270 • Qty of MSW Generated: Wet waste: 9 TPD Dry waste: 6 TPD Total: 15 TPD MSW Collection – 95% MSW Segregation – 80% Present Treatment Method: **Wet waste: - 9 TPD** • Micro Composting Plant – 2 Nos. of 10 TPD (Completed and functioning) **Dry waste: - 6 TPD** • Saleable waste of 3.5TPD sold out to the identified vendors & registers are being maintained.	Municipal Administration	100% will be achieved before 30.06.19	MSW Collection 100% achieved &Segregation 97% achieved. 100% Target will be achieved before March 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• The Non saleable Non Biodegradable waste of 1.50 TPD is stored in the RRC at Varnapuram & Periodically disposed to Ultra Tech cement.			

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery in Namakkal District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	❖ **Namakkal District** • **Komarapalayam Municipality** • No. of MSW dumping points identified: Nil • Population: 76120 • Qty of MSW Generated: Wet waste: 14 TPD Dry waste: 8 TPD Total: 22 TPD MSW Collection – 100% MSW Segregation – 100% Present Treatment Method: Wet waste: 14 TPD 1. Micro Composting Plant – 2 Nos. of 6 TPD (Completed and put to use) 2. On – Site Composting – 3 locations – 0.5 TPD (Completed and put to use) 3. Barrel Composting– 1800 nos. of 9 TPD - Functioning Dry waste: 8 TPD	Municipal Administration		

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Saleable waste of 4.50 TPD sold out to the identified vendors & registers are being maintained. • The Non saleable, Non Biodegradable waste of 3.5 TPD is stored in the RRC at C.N Palayam Weekly Market and periodically disposed to Ponni Sugar mills • Inert & Silt -0.50TPD Stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action: Nil** MSW Treatment Facility provided.		-	

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		❖ **Palipalayam Municipality** • No. of MSW dumping points identified: 1 location • Population: 44120 • Households: 12471 • Qty of MSW Generated: Wet waste: 7 TPD Dry waste: 5 TPD Total: 12 TPD MSW Collection – 100% MSW Segregation – 100% Present Treatment Method: Wet waste: 7 TPD • Bio Methanation– 1 no. of 5TPD (Completed and functioning)- Gas used for street lighting Dry waste: 5 TPD • Saleable waste of 3TPD sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 1.40 TPD is stored in the RRC at Avathipalayam	Municipal Administration		

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Inert & Silt -0.60TPD Stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action:** **Wet Waste:** • Micro Composting Plant – 1 Nos. of 2 TPD (Will be completed before June 2019- SBM funds).		June-2019	Completed

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery in Karur District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3	Solid Waste Management and Disposal Plan	**Karur District:** ❖ **Kulithalai Municipality** • No. of MSW dumping points identified: Nil • Population: 29580 • Total Households: 8412 • Qty of MSW Generated: Wet waste: 4 TPD Dry waste: 3 TPD Total: 7 TPD MSW Collection – 100% MSW Segregation – 100% Present Treatment Method: **Wet waste: 4TPD** • Vermi composting – 1 nos. of 4TPD (Completed and functioning) • On – Site Composting – 5 nos. of 1.0 TPD (Completed and functioning) **Dry waste: 3 TPD** • Saleable waste of 1.5TPD sold	Municipal Administration		

		out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 1 TPD is stored in the RRC at Thanneerpalli • Inert & Silt -0.5TPD Stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action:** • **Wet Waste:** Micro Composting Plant – 2 Nos. of 4 TPD (Will be completed before April 2019-SBM Funds).		Apr-2019	Completed

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Trichy District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	❖ **Trichy Corporation** • No. of MSW dumping points identified: Nil • Population: 1054859 • Total households: 235576 • Qty of MSW Generated: Wet waste: 222 TPD Dry waste: 168 TPD Total: 390 TPD MSW Collection – 100% MSW Segregation – 92% Present Treatment Method: **Wet waste: - 222 TPD** • Bio Methanation Plant – 2Nos. Of 7 TPD - Functioning Gas used in Community kitchen & Crematorium • On – Site Composting – 28 Nos of 10 TPD (Completed and put to use) • Windrow Composting – 50 TPD - Functioning **Dry waste: - 168 TPD**	Municipal Administration	100% will be achieved before 30.06.19	Segregation 92% achieved. 100% Target will be achieved before March 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		• Other saleable waste (Plastic, Rubber, Metal etc.,) of 101 Tonne sold out to the identified vendors & registers are being maintained. • The Non saleable, Non Biodegradable waste of 50 TPD is stored in the RRC at all MCCs in 31Locations & Periodically disposed to Ultra Tech Ariyalur. • Inert and Silt 17 TPD Stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action:** **Wet-waste:** • Micro Composting Plant – 34 Nos. of 168TPD (29 MCCs put to use and 5 MCCs will be completed before April 2019-SBM funds) **Dry waste:** • Bio mining of Ariyamangalam Dump yard –SMART City funds-will be completed in June 2021.		April-2019 June-2021	Out of 34 MCCs, 31 Nos are completed and put it use and remaining 3 MCCs are pending due to Court Case & Site issue. Biomining Work is in progress

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery in Thanjavur District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	❖ **Kumbakonam Municipality** • No. of MSW dumping points identified: Nil • Population: 142143 • Total households: 36105 • Qty of MSW Generated: Wet waste: 41 TPD Dry waste: 29 TPD Total: 70 TPD MSW Collection – 95% MSW Segregation – 80% **Present Treatment Method:** **Wet waste:** Bio Methanation Plant -1No of 5TPD - Functioning **Dry waste:** • Saleable waste of 17TPD sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 9 TPD is stored in the RRC at Karikulam and periodically disposed to M/s Ultra tech	Municipal Administration	100% will be achieved before 30.06.19	Collection 100% achieved &Segregation 85% achieved,100% target will be achieved before May 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Cement • Inert & Silt-3TPD Stored along with C&D waste. Used for Filling Low Lying Areas • **Biomining** – Completed - Total garbage removed 2,00,000 Cum and Land reclaimed 12 Acres at Karikulam **Proposed Plan of Action:** **Wet Waste of 41 TPD** are processed as below: • Micro Composting Plant – 5 Nos. of 20 TPD (Will be completed before April 2019-SBM Funds). • On – Site Composting – 41 nos. of 17 TPD (Will be completed before April 2019).		Apr-2019	Completed

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Cauvery – Nagappattinam District:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	**Nagappatinam District:** ❖ **Mayiladuthurai Municipality** • No. of MSW dumping points identified: 2 locations • Population: 90112 • Households: 21867 • Qty of MSW Generated: Wet waste: 18 TPD Dry waste: 14 TPD Total: 32 TPD MSW Collection – 100% MSW Segregation – 60% Present Treatment Method: Wet waste: 18 TPD - Nil Dry waste: 14 TPD • Saleable waste of 7TPD sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 4.0 TPD is stored in the RRC at Ananthadhandavapuram Road & periodically disposed to Ultra tech	Municipal Administration	100% will be achieved before 30.06.19	Segregation 60% achieved,100% target will be achieved before June 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Cauvery	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Cement • Inert & Silt-3 TPD Stored along with C&D waste. Used for Filling Low Lying Areas **Proposed Plan of Action:** **Wet Waste: 18 TPD** • Micro Composting Plant – 3 Nos. of 15 TPD (Will be completed before April 2019-SBM Funds) • On – Site Composting – 8 nos. of 4.5 TPD (Will be completed before April 2019-ULB General funds)		Apr-2019 Apr-2019	Completed

River Bhavani – Action Plan (Priority-IV)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Bhavani:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3.	Solid Waste Management and Disposal Plan	**Coimbatore District** ❖ **Mettupalayam Municipality** • No. of MSW dumping points identified: Nil • Population:80217 • Qty of MSW Generated: Wet waste: 12 TPD Dry waste: 12 TPD Total: 24 TPD MSW Collection – 95% MSW Segregation – 70% Present Treatment Method: **Wet waste:** Bio-methanation -1 No.-3TPD On-site Composting- 3 locations -1.0 TPD. **Dry waste:** • Saleable waste –7.0 TPD • The Non-Biodegradable waste – 4.0 TPD - stored in the RRC at Old Municipal office and periodically	Municipal Administration	**100% Collection & Segregation will be achieved before 30.06.2019.**	100% collection achieved. Segregation 87% achieved,100% target will be achieved before June 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		disposed to M/s ACC, Cements. • Inert &Silt - 1.0 TPD stored with C&D waste and used for land filling. **Present mode of disposal :** Collection, segregation, Composting & Bio-methanation **Proposed Plan of Action:** • Wet Waste of 12 TPD are proposed as below: • Micro Composting Plant – 2 Nos. of 8 TPD (SBM Funds).		**May 2019**	Completed
		Erode District ❖ **Gopichettipalayam (Municipality)** • No. of MSW dumping points identified: Nil • Population: 63633 • Qty of MSW Generated: Wet waste: 11 TPD Dry waste: 09 TPD Total: 20 TPD MSW Collection –100%	Municipal Administration	**100% Collection**	Segregation 96% achieved,100% will be achieved before April 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		MSW Segregation – 83% Present Treatment Method: **Wet-waste:** Bio-methanation-1No. – 1TPD – gas used for internal lighting. On – Site Composting – 7 locations – 1 TPD. Windrow Composting – 2 TPD **Dry Waste:** ✓ Saleable waste –5.0 TPD ✓ The Non-Biodegradable waste – 3.0 TPD - stored in the RRC. ✓ Inert &Silt - 1.0 TPD stored with C&D waste for land filling. **Present mode of disposal :** Collection, segregation, onsite Composting & Bio Methanation– **Proposed Plan of Action:** **Wet Waste:** ✓Micro Composting Plant – 2 Nos. of 7 TPD (SBM funds)		**& Segregation will be achieved before 30.06.2019.** **May 2019**	Completed
		Erode District ❖ **Sathyamangalam**			

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		(Municipality) • No. of MSW dumping points identified: Nil • Population:38194 • Qty of MSW Generated: Wet waste: 7 TPD Dry waste: 5 TPD Total: 12 TPD MSW Collection –92% MSW Segregation – 86% Present Treatment Method: **Wet-Waste:** On – Site Composting – 1 location – 0.5 TPD Windrow Composting – 1 TPD (Functioning) **Dry Waste:** Saleable waste –3.0 TPD The Non-Biodegradable waste – 1.50 TPD - stored in the RRC at the compost yard (Athaani road) and periodically disposed to M/s Ultratech cements, Ariyalur. Inert &Silt – 0.5 TPD stored with C&D		**100% Collection & Segregation will be achieved before 30.06.2019.**	100% target achieved.

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Bhavani	Organization/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		waste and used for land filling. **Present mode of disposal :** Collection, segregation, onsite Composting &Windrow composting **Proposed Plan of Action:** **Wet Waste:** ✓Micro Composting Plant – 2 Nos. of 6 TPD (SBM funds).		**May 2019**	Completed

River Thamirabarani – Action Plan (Priority-V)

Proposed Short Term and Long Term Action Plan for Rejuvenation of River Thamirabarani:

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
3	Solid Waste Management and Disposal Plan	❖ **Tirunelveli District** ❖ **Tirunelveli Corporation:** • No. of MSW dumping points identified: Nil • Population: 513284 • Total households: 159628 • Qty of MSW Generated: Wet waste: 97 TPD Dry waste: 73 TPD Total: 170 TPD MSW Collection – 95% MSW Segregation – 80% Present Treatment Method: **Wet waste: - 97 TPD** • Micro Composting Plant – 41 Nos. of 97 TPD (Completed and put in use) • On – Site Composting – 4 locations – 7.5 TPD (Completed and put in use) • Bio-Methanation Plant -1No of 5TPD	Municipal Administration	**100% will be achieved before 31.05.19**	Collection 97% achieved &Segregation 80% achieved. 100% Target will be achieved before May 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		– Functioning **Dry waste: - 73 TPD** • Other saleable waste (Plastic, Rubber, Metal etc.,) of 43 Tonne sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 21 TPD is stored in the RRC at all MCCs in 41 Locations & Periodically disposed to India cements, Tirunelveli. • Inert & Silt – 9 TPD Stored along with C&D waste. Used in Filling Low Lying Areas **Proposed Plan of Action:** Nil			
		❖ **Ambasamudram Municipality** • No. of MSW dumping points identified: Nil • Population: 38850 • Total households: 15176 • Qty of MSW Generated: Wet waste: 9 TPD Dry waste: 6 TPD	Municipal Administration	**100% will be**	Segregation 95% achieved,100% target will be achieved before May 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		Total: 15 TPD MSW Collection – 100% MSW Segregation – 80% Present Treatment Method: **Wet waste: - 9 TPD** • On – Site Composting – 5 locations – 1 TPD (Completed and put in use) **Dry waste: - 6 TPD** • Other saleable waste (Plastic, Rubber, Metal etc.,) of 3.6 Tonne sold out to the identified vendors & registers are being maintained. • The Non saleable Non Biodegradable waste of 1.8 TPD is stored in the RRC at Vagaikulam & Periodically disposed to Ultra tech cement, Ariyalur • Inert & Silt – 0.6 TPD Stored along with C&D waste. Used in Filling Low Lying Areas. **Proposed Plan of Action:** **Wet-waste:** • Micro Composting Plant – 3 Nos. of 9 TPD (Will be completed before		**achieved before 31.05.19**	Out of 3 MCCs, 2 Nos Completed and remaining 1 no will be

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		April 2019) **Dry waste:** Nil		**April-2019**	completed by Feb End
		❖ **Vickramasingampuram Municipality** • No. of MSW dumping points identified: Nil • Population: 47163 • Total households: 19370 • Qty of MSW Generated: Wet waste: 12.60 TPD Dry waste: 8.40 TPD Total: 21 TPD MSW Collection – 100% MSW Segregation – 80% Present Treatment Method: **Wet waste: - 12.60 TPD** • Windrow Composting Plant – 1No. Of 3 TPD (Completed and put in use). **Dry waste: - 8.40 TPD** • Other saleable waste (Plastic, Rubber, Metal etc.,) of 5 Tonne sold out to the identified vendors &	Municipal Administration	**100% will be achieved before 31.05.19**	Segregation 95% achieved,100% Target will be achieved before May 2020

Sl. No.	Description of Source	Action Plan for Rejuvenation of River Thamirabarani	Organisation/ Agency Responsible for Execution of the Action Plan	Time Target	Action Taken
		registers are being maintained. • The Non saleable Non Biodegradable waste of 2.5 TPD is stored in the RRC at Dhobi Colony & Periodically disposed to India cements, Tirunelveli. • Inert & Silt – 0.9 TPD Stored along with C&D waste. Used in Filling Low Lying Areas. **Proposed Plan of Action:** **Wet-waste:** • Micro Composting Plant – 4 Nos. of 13 TPD (Will be completed before April 2019) **Dry waste:** Nil		**April-2019**	Completed

TAMILNADU POLLUTION CONTROL BOARD

Minutes of the Assessment of Polluted River Stretches in Tamil Nadu based on the Hon'ble NGT (PB) matter O.A. No.673/2018 by the Central Monitoring Team from NMCG, Ministry of Jal Shakti, DoWR, RD&GR held on 02.03.2020 at 9.00 A.M. at Tamil Nadu Pollution Control Board, Corporate Office Conference Hall, 6th Floor, 76, Mount Salai, Guindy, Chennai – 600 032.

Present

1. Thiru. A.V. Venkatachalam, IFS, Chairman, TNPCB
2. Thiru. D. Sekar, Member Secretary, TNPCB
3. Thiru. S. Palanisamy, IAS, Director of Town Panchayat, Chennai
4. Tmt, Kalaiselvi Mohan, IAS, Joint Commissioner, MA and WS.
5. Dr. Sabita Madhivi Singh, Joint Director, MOJS, Delhi
6. Thiru. Deepinder Singh, NMCG, GOI.Delhi
7. Dr. M. Madhusudhanan, RD, CPCB, Chennai
8. Dr. S. Selvan, Chief Environemntal Engineer, TNPCB
9. Thiru. S. Raja, Executive Engineer, Ground Water Division, Chennai
10. Thiru. D. Anbalagan, Superintending Engineer, O/o. DTP, Chennai
11. Dr. M. Vaitheeswaran, EEC, O/o. CMA, Chennai
12. Thiru. A. Kuttalingam, SE RD &PR Dept. Chennai
13. Thiru. N. Rajarathinam, AEE, Rural Development Dept., Tirunelveli
14. Thiru. S. Nehru Pandian, (AEE), Rural Development Dept., Thoothukudi
15. Thiru. K. Ramesh Kumar, Assistant Engineer,Bhavani
16. Tmt. R. Syamala, AEE, Rural Development, Erode
17. Thiru. K. S. Dhanasekaran, Assistant works Engineer
18. Thiru. D. Kannayiram, AEE (RD),Atthur
19. Thiru. R. John Manoharan, Assistant Executive Engineer, Dept. of Environment
20. Thiru. R. Ananda Kumar, AEE DRD and PR Office, Chennai
21. Thiru. T. Logu, Dy. BDO, DRD &PR, Chennai
22. Tmt. M.K. Manimegalai, Deputy Hydro geologist, TWAD Board, Chennai
23. Thiru. S. Suresh Kumar, Joint Chief Engineer WRD, Ground Water and Irrigation,Chennai
24. Thiru. V. Thiagarajan, Deputy Director (Lab), TNPCB
25. Tmt. V.N. Gayathri, Assistant Director, TNPCB
26. Tmt. K. Uma, Deputy Chief Scientific Officer, TNPCB
27. Thiru. K. Raghukumar, Assistant Engineer, TNPCB

No. 76, MOUNT SALAI, GUINDY, CHENNAI - 600 032.
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The Chairman, Tamil Nadu Pollution Control Board, welcomed the officials and discussed the agenda points of the meeting and requested the Chief Environmental Engineer, Tamil Nadu Pollution Control Board to present the status of quality of Polluted River Stretches.

During the presentation, the Chief Environmental Engineer, TNPCB informed that the BOD value of all the rivers was very low and TNPCB was the first to implement on Zero Liquid Discharge (ZLD) for industries and informed that the Government order on setting up of industries near the water bodies are strictly followed by TNPCB. A detailed presentation was made on the actions taken by various departments such as Municipal Administration, Town Panchayats and Village Panchayats.

The following discussions were held among the various stake holders.

- BOD values were found to be less than 2, while STP's in the river stretches were under construction. The CEE, TNPCB explained that the rivers such as Vasista, Sarabanga and Tirumanimutharu are not perennials and rare flow only observed. It was also informed that as per CPCB advice water samples are now being collected from nearby wells and reported.
- Dr. M. Madhusudanan, Regional Director, CPCB requested TNPCB to differentiate the report of sampling from river and well water in the Polluted river stretches (Action: TNPCB).
- PWD-Ground water and Irrigation department representative informed that 72 lakhs trees were planted in coordination with the Forest department along the river stretches which in turn recharge the ground water.
- Details of the working capacities of STPs in the polluted river stretches and solid waste management are to be submitted regularly (Action: CMA, DTP, RD&PR).
- The Chairman, TNPCB informed that system along the river basin has been well developed with green belt, and dams constructed for irrigation and drinking purpose. The Green belt is been developed continuously in the State by various departments under afforestation programmes. Further developments are also proposed under the "Nadanthai Vaazhi Cauvery Scheme" (Action: PWD)
- PWD to furnish the details regarding Flood plain zone, E-flow, Plantation, Ground water sampling and its present status report, Removal of encroachments, Ground water extraction etc., for the six polluted river stretches (Action: PWD).

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- The line departments has to furnish the updated Plan of action with time line and regular monthly progress report for six polluted river stretches to TNPCB for onward submission to the Ministry of Jal Shakti, Delhi (Action: CMA, DTP, RD&PR, PWD-WRD).

With the above discussions the meeting concluded.

****

Sd/-(09.03.2020)
CHAIRMAN, TNPCB

/Forwarded by Order/

For Chairman
CEE/TNPCB/Chennai-32
11/03/2020

Copy To

1.	The Commissioner of Municipal Administration, Commissionerate of Municipal Administration, MRC Nagar, Chennai – 600 028.	For kind information & necessary action
2.	The Director, Directorate of Town Panchayats, MRC Nagar, Chennai – 600028.	
3.	The Commissioner, Commissionerate of Rural Development and Panchayat Raj, Panagal Building, 4th & 5th Floor, Jeenis Road, Saidapet, Chennai – 600015.	
4.	The Engineer in Chief (Water Resources Organisation), Public Works Department, P.W.D Building, Kamaraj Salai, Chepauk, Chennai – 600 005.	
5.	The Engineer in Chief (irrigation), Public Works Department, P.W.D Building, Kamaraj Salai, Chepauk, Chennai – 600 005.	
6.	The Chief Engineer, State Ground and Surface Water Resource Data Centre, Tharamani, Chennai – 600 113.	
7.	The Managing Director, Tamil Nadu Water Supply and Drainage Board, TWAD House, 31, Kamarajar Salai, Chepauk, Chennai – 600 005.	
8.	The Principal Chief Conservator of Forests, Department of Forest, Panagal Maligai, Saidapet, Chennai – 600 015.	
9.	The Director, Department of Geology and Mining, Thiru. Vi. Ka. Industrial Estate, Alandur Road, Guindy, Chennai – 600 032.	

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Copy Submitted to

1.	The Chief Secretary, Government of Tamil Nadu, Secretariat, Chennai-600 009.	Submitted for kind information
2.	The Additional Chief Secretary to Government, Municipal Administration & Water Supply Department, Secretariat, Chennai-600 009.	
3.	The Additional Chief Secretary to Government, Rural Development and Panchayat Raj, Secretariat, Chennai-600009.	
4.	The Principal Secretary to Government, Environment & Forest Department, Secretariat, Chennai-600009.	
5.	The Principal Secretary to Government, Public Works Department, Secretariat, Chennai-600009.	
6.	The Director of Environment, Department of Environment, No. 1, Jennis Road, Panagal Building, Ground Floor, Saidapet, Chennai – 600 015.	
7.	The Commissioner of Industries and Commerce, Department of Industries & Commerce, SIDCO Corporate office building, Guindy Industrial Estate, Chennai – 600 032.	
8.	The Member Secretary, Tamil Nadu Pollution Control Board, No.76, Mount Salai, Guindy, Chennai – 600 032.	

ANNEXURE-XV

STATUS OF GROUND WATER AUGMENTATION, AFFORESTATION, FLOOD PLAIN AND E-FLOW MANAGEMENT AS PROVIDED BY THE STATES

1. ANDHRA PRADESH

Details not provided in the Action Plan and MPR not received from the State.

2. ASSAM

Ground water regulation & water conservation:

Provision for rain water harvesting has already been incorporated in a building by laws for Guwahati.

Protection and management of Flood Plain Zones (FPZ):

The Guwahati Metropolitan Development Authority has constructed guard/flood wall from Bhangagarh upto ASEB Colony. The river Bharalu passes through a congested urban habitation in most of its run till its outfall at Bharalumukh. The river bed is not directly approachable in most of the areas due to private patta land except in some locations wherein footpaths in patches were constructed time to time by the State PWD Department. Identification of locations where path ways can be provided by the PWD Department will be done. Further ASDMA have already prepared the flood hazard map of Assam. Flood hazard map, the flood prone area of Bharalu and Bahini basin of Guwahati city will be proposed by the Department for vetting by the Government.

Maintaining minimum environmental flow of river:

As per the MPR, it is contemplated to establish a Gauge discharge Station of Bahini/ Bharalu River. Namely one at Hengerabari RCC bridge, one at Jonali RRC bridge and one at Shantipur Sluice Gate from 01.04.2020 to monitor the flows.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, State Forest Departmnet has been directed to take up plantation activities along the river stretches. Further, works of removal of illegal encroachments is in process.

3. BIHAR

Ground water regulation & water conservation:

- As per the MPR, State Government has initiated drives for recharging of ground water by providing roof top hair water harvesting structures and soak pits/ recharge pits near public well, hand pump and other water bodies under Jal Jeevan Haryali Abhiyan

- State Government of Bihar has notified The Bihar Ground Water (Regulation & Control of Development & Management) Act, 2006 for regulating and management of ground water.
- Conditions for providing roof top rain water harvesting structures in the building plan in an area of the 1000 Sqm or more while according approval for construction has been imposed.
- In order to enhance water use efficiency in water intensive crop, assistance is given for promotion of water saving tools/ technologies like sprinkler and drip irrigation, creation of farm ponds, efficient delivery and distribution system and adoption of agronomic practices like alternate row/ furrow irrigation, mulching, etc.
- Pradhan Mantri Krishi Sinchai Yojana also focuses on creating protective irrigation by harnessing rain water at micro level through 'Jal Sanchay' and 'Jal Sinchan' to insure 'Per Drop More Crop'.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, the issue of demarcation of flood plain zone/buffer zone is not applicable in case of Bihar due to densely populated northern plain terrain and mostly embanked river.

Maintaining minimum environmental flow of river:

As per the MPR, no control structure existing on the river stretches, therefore maintenance of e-flow not applicable.

Plantation activities and Setting up biodiversity parks on flood plains:

- As per the MPR, Plantation is being done under Namami Gange Scheme and Krishi Road Map wherein the polluted river stretches will be prioritized.
- The Bihar state has successfully achieved the total tree cover target of 15% for the Phase-I of Bihar Agriculture Road Map. For the Phase-II of Bihar Agriculture Road Map for the period 2017-18 to 2021-22 a target of 17% total tree cover has to be achieved by 2022.
- A team from the State Government had visited Yamuna Biodiversity Park in Delhi and at present are exploring possibilities of developing the replication of the same in the State.

4. CHHATISGARH

Ground water regulation & water conservation:

- As per the MPR, State Water Resource Department has proposed various structures on small and big nallahs of all the 146 blocks of the state for recharging ground water.
- Installation of rain water harvesting structure is under progress by industries and other establishments in the State and is expected to be completed by June 2020. Till now 573 industries have installed 950 rain water harvesting systems whereas 85 are under installation.

- Drip irrigation / sprinkler irrigation under micro irrigation scheme have been increased in the past 3 years. Presently, 1606 hectare area is covered by drip and 257.21 hectare area is covered by sprinkler system for different crops.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, Identification of flood prone zones has been done by urban local bodies and plantation has also been done in co-ordination with forest department as per the direction of district administration.

Maintaining minimum environmental flow of river:

As per the MPR, Water Resource Department had prepared standard operating procedures (SOP) for the five rivers Seonath, Mahanadi, Kharun, Kelo and Hasdeo for maintaining e-flow in the rivers and the same is being followed.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, total 286440 plants have been planted along the river stretches. Process of identification and removal of encroachment from the floodplain is under-progress. The process of complete removal of complete encroachment shall be completed before 31.03.2021.

5. DADRA NAGAR HAVELI &DAMAN DIU

Ground water regulation & water conservation:

- As per the MPR, in industrial area, for extraction of groundwater all the industries were directed to obtain No Objection Certificate (NOC) from Central Ground Water Authority (CGWA).
- 7 Conventional rain water harvesting structures were built in Gram Panchayat. Rain water harvesting was implemented with 67 number of rooftop recharge of bore well and 33 Nos. of open wells in 14 Panchayats of Daman district. Rain water harvesting for 8 nos. of Borewell, 16 nos. of open well recharge and 02 nos. of rooftop through injection well system at Mandoni and Sindoni Panchayat installed under Jal Shakti Abhiyan
- 2 Ponds have been successfully recharged during Jal Shakti Abhiyan in 2019.
- All the upcoming industrial and construction projects shall be issued strict instruction for providing a suitable rainwater harvesting system to reduce dependency over ground water resource or to recharge the ground water table.
- Farm pond of 30 x 15 m has been implemented in Kachigam as a part of Jal Shakti Abhiyan for ground water rejuvenation.
- Training programme for awareness on Jal Shakti Abhiyan and micro irrigation projects for farmers was conducted on 15th October, 2019.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, Forest department had constructed 29 check dams in the catchment area of Damanganga River for flood plain zone protection

Maintaining minimum environmental flow of river:

As per the MPR, minimum environmental flow for the river is maintained at various locations.

Plantation activities and Setting up biodiversity parks on flood plains:

- As per the MPR, in Daman, around 5500 plants have been planted in panchayats under Jal Shakti Abhiyan.
- In Dadra Nagar Haveli, around 7500 plants have been planted under Jal Shakti Abhiyan**.**
- 3 bio-diversity parks – Nakshatra Van, City Park and Butterfly Garden had been setup in the Damanganga River catchment area.

6. DELHI

Ground water regulation & water conservation:

- As per the MPR, for extraction of groundwater, all the industries were directed to obtain No Objection Certificate from Central Ground Water Authority.
- As per the MPR, Ground water extraction and management in NCT of Delhi is regulated as per the provisions of the Notification Dated 12.07.2010 issued by Environment Department, Govt. of NCT of Delhi.
- If the plot size of the building is more than 200 sq. meters, the permission to draw groundwater through bore / tube well is subject to the condition that the occupier or owner of the said plot or building shall install rain water harvesting system in such building. 5424 RWH system have been installed.
- For conservation of water, farmers are advised to adopt inter-cropping and multiple-cropping to get maximum returns per unit of area and per unit of time with optimum use of water, to grow crop which require less water, to adopt sprinkler and drip irrigation system to irrigate their crops, to use water, as per crop-wise prevailing package of practices and to conserve rain water, by adopting deep ploughing and bunding etc. of their fields.

Protection and management of Flood Plain Zones (FPZ):

- DDA has demolished 550 Nos. Jhuggis/chappers and an area of 5500 sqm has been freed from encroachment recently.
- In, all out of 1026 Jhuggis/structures existing on nearly 11.0 Acres of land in Okhla, Khijrabad and Jogabai 600 Jhuggis have been removed and 5.00 acres of land has been reclaimed, nearly 2.0 acres of land with 150 Jhuggis could not be removed due to stay by Courts. Balanced Jhuggis are proposed to be removed in due course.

- For monitoring of encroachments on vacant land using satellite imageries, MOU has been signed between ISRO and DDA.
- Demarcation of 1:25 years flood plain of river Yamuna from Wazirabad to Jaitpur on both banks is in progress.
- Work for reinstallation of bollards along with Geo –reference was initiated / awarded to M/s M & G Associates on 29.08.2019.
- The flood plains from Wazirabad to ISBT (50 Nos bollards) and from Sun Dial to Dhobighat (56 Nos bollards) was marked and 106 Bollards were installed.
- The ring road from Yamuna Bazaar to Sun Dial and the road number 13 /A from Dhobighat to Jaitpur Ghat and further embankment upto Delhi Haryana Border acts / mark the flood plain boundary on western bank.
- Similarly, the Pustha road on the eastern Bank marks the entire flood plain boundary. 90 % work for demarcation of flood plains completed and the balance was held up due to construction ban.

Maintaining minimum environmental flow of river:

As per the MPR, to assess the minimum required environmental flow of river Yamuna for stretch between Hathinikund to Okhla, a comprehensive study has been assigned to National Institute of Hydrology (NIH), Roorkee by NMCG.

Plantation activities and Setting up biodiversity parks on flood plains:

- As per the MPR, Department of Forests & Wildlife, GNCT of Delhi has taken over total 571.47 hectares of land in Yamuna Flood plains under various schemes and carried out plantation over 492.09 hectares of land. Plantation on remaining 79.38 hectares of land in shall be done.
- Yamuna Biodiversity Park is existing and located in Jagatpur Khadar Yamuna Flood Plains in 9770 Hectares (upstream of Wazirabad).
- DDA is implementing the project Restoration and Rejuvenation of the floodplains of River Yamuna. The complete stretch of Zone – O falling under the jurisdiction of DDA, has been subdivided into 10 projects for the proper planning and execution.
- South Biodiversity Park is being developed in 115 hectares area in Yamuna Flood Plains near Kalindi Colony. The project has been awarded to CEMDE on 13.12.2019. Water hyacinth and *Alternanthera* have been removed from wetlands covering an area of 25 Hectare.
- A small stretch of 500 m long and 10 m wide stripe along the Ashram Road has been planted with 300 plants.
- Two nature trails - one trail from Ashram Road to DND Flyover has been made; both sides of this nature trail would be developed into a greenway.
- About 20 Hectare of elevated portion beneath the DND flyover has been processed for planting 15000 saplings of native trees.

7. GOA

Ground water regulation & water conservation:

As per the Action Plan, the ground water table in the river stretches is high/ moderate and no further action is proposed in the action plan on this issue.

Protection and management of Flood Plain Zones (FPZ):

MPR from the State not received.

Maintaining minimum environmental flow of river:

Status as per the Action Plan:

- Sal River: The stretch between Khareband to Navelim (8.00 Km) is under non-tidal effects and the river becomes dry in the month of January every year. It is proposed to rejuvenate this stretch by discharging the treated water from the STP at Navelim, to ensure the E-Flow and frequent flushing this stretch of the river.
- The Mhadei Water Dispute Tribunal has passed an award on 14th August 2018 in which the State of Maharashtra have been directed to insure sufficient flows in order to maintain the E-flow in the River Bicholim, River Khandepar and River Valvanti basin in Goa State.
- The Polluted stretch of the Talpona River along the Canacona (from Talpona to Gokarna Math) is source for water supply for Canacona, Talpona and nearby area. The state WRD is maintaining the E-flow during summer season by discharging the water & maintaining the water levels in the Bandhara's along the polluted stretch.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the Action Plan, during the Physical survey it was observed that there are extensive coconut, orchards, cashew, mango, mangroves and other local species along both the bank of the rivers. MPR from the State not received.

8. GUJARAT

Ground water regulation & water conservation:

As per the MPR, draft bill titled "Conservation, Protection, Regulation and Management of Ground Water in Gujarat State" is in process.

Maintaining minimum environmental flow of river:

- As per the MPR, Tapi River – Approximately 1700 Cusecs water inflow in Tapi river from Kakrapur weir to Surat from small tributaries (Khadi) and during Dec to May additional average 339 Cusecs water flows from Kakrapur weir to maintain potable water.
- There is no existing storage dam on Mindhola river. But during winter and summer season water from command area of Uka-Karapar project flows during irrigation rotation period.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, 6.10 lakhs of plants are proposed to be planted on both sides of the polluted river stretches in the FY 2020-21. It is proposed to develop a Biodiversity park at Khari.

9. HARYANA

Ground water regulation & water conservation:

- As per the MPR, for extraction of groundwater all the industries were directed to obtain No Objection Certificate from Central Ground Water Authority.
- On 31.10.2001, a notification regarding making roof rain water harvesting, conversation & Artificial recharge of ground water is compulsory in Govt. buildings/HSVP Buildings, including all the private houses/buildings to be constructed in Urban Estates, in future having roof top surface area in excess of 100 Sqm.
- Following schemes are being implemented by the State for reduce the fresh water demand in agriculture:
  a. Promotion of Crop Diversification in Haryana
  b. Climate resilience building in rural areas through crop residue management- for Haryana state for promotion of maize crop
  c. Installation of solar/ grid powered micro irrigation infrastructure on sewage treatment plants for utilizing treated water for Irrigation.
  d. Drip/Sprinkler irrigation sets through subsidies to farmers from the State Horticulture/Agriculture Departments
  e. Project of Recycle and Reuse of treated wastewater for irrigation purpose in Fatehabad, Hisar, Sirsa & Jind Districts of Haryana.

Protection and management of Flood Plain Zones (FPZ):

All construction activities on floodplain zone of both the rivers banned. Illegal encroachment of floodplain not allowed and is immediately removed.

Maintaining minimum environmental flow of river:

As per State, River Ghaggar is non-perennial, therefore maintaining e-flow not possible.

For River Yamuna, as per the MOU signed in 1994 between States of UP, Haryana, Rajasthan, Himachal Pradesh & NCT of Delhi, a minimum discharge of 352 cusec of water is released in River Yamuna from Hathnikund barrage.

Plantation activities and Setting up biodiversity parks on flood plains:

- As per the MPR, during the year 2018-2019, in 3 towns (Panchkula, Sirsa, Fatehabad) along River Ghaggar, 2853000 plants were planted over 3499 hectare of land. For the year 2019-20, 1728000 plants were proposed to be planted in 1883 hectare of land. 7 biodiversity parks of total 12611 acre are existing.

- During the year 2018-2019, in 6 towns (Yamuna Nagar, Karnal, Panipat, Sonipat, Faridabad, Palwal) along River Yamuna 3189000 plants were planted over 3556 hectare of land. For the year 2019-20, 3555000 plants were proposed to be planted in 4220 hectare of land. In 5 towns, 8 biodiversity parks of total 253 acre are existing.

10. HIMACHAL PRADESH

Ground water regulation & water conservation:

- As per the MPR, Drilling of new bore wells for extraction of ground water in Himachal Pradesh has been stopped as per order of the Hon'ble High Court of Himachal Pradesh.
- The Himachal Pradesh Ground Water Regulation & Control of Development & Management Act is under formulation will be notified after approval from the Government.
- As per Town & Country Planning Act, 1977 (Act No. 12 of 1977), it is mandatory for all the commercial buildings to have roof top rain water harvesting system and recharging pit.
- The IPH department has prepared a proposal for C/O Rain Water Harvesting Structure at 10 sites identified in Nalagarh area. In Shimla region, 2 small rain water harvesting structures at Jharech Nallah and Ashwani Khad near shooting range in GP Beolia have already been constructed on the tributaries of River Ashwani. For Solan region of Ashwani khad, Rain water harvesting structures has been constructed at feasible sites in the catchment of Ashwani under AIBP schemes. There are 13 nos. of rain water harvesting structure/water bodies constructed along the catchment of Ashwani River at Kanewala, Powash, Chhaura, Karon, Banjani, Bg (Shallai), Chhari, Kurgal, Dochi, Ser Banera, Suro, Shungal & Bisha. 3 small RWH structures have been constructed at Noti Khad in GP Balghar, Halai village in GP Ghorna & Bagri village in GP Bagri. 3 more are proposed at Kharki Nalla in GP Balag, Chilla Khad in GP Deothi & Bashali Khad in GP Kuthar.
- The use of irrigation water in the fields is optimized by extension services offered by Horticulture and Agriculture Department by micro irrigation methods.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, No flood plain zones have been identified in the State till date.

Maintaining minimum environmental flow of river:

The RTWQMS along with Radar system for water quality monitoring and flow measurement, respectively, have been installed in river Markanda near village Ogli, Kala Amb town and river Kaushalya near village Kamli.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, total 2200 plants have been planted at Sukhna Nala at Parwanoo and 800 plants have been planted at Kala Amb in river Markanda. Total 8800 plants have been planted along river Sirsa. Total 13200 plants have been planted in river Ashwani. Total 3300 plants have been

planted in Theog region in river Giri. Bio-diversity Park is proposed at Kala Amb and the work is in progress.

11. JAMMU & KASHMIR

Ground water regulation & water conservation:

As per the Action Plan, Udhampur Municipality has been advised for having rain water harvesting provision to be adopted by the major establishment/ colonies while granting housing colony map.

Protection and management of Flood Plain Zones (FPZ):

Details not provided in the Action Plan and MPR.

Maintaining minimum environmental flow of river:

Details not provided in the Action Plan and MPR.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, Catchment Area Treatment and afforestation in the catchment area of the rivers proposed to be developed by Forest Deptt. J&K under CAMPA. Forest Deptt. J&K under CAMPA have planted 23,000 plants in Tawi River, 3200 plants in Banthar River and 21000 plants in Chenab River.

12. JHARKHAND

Ground water regulation & water conservation:

As per the Action Plan following activities were proposed:

- All the industry to obtain NOC from the CGWB and action is taken against the Units in Operation without obtaining of NOC from CGWA
- To ensure rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water is encouraged by CGWB/CGWA with a time target of March 2020.
- Adoption of good irrigation practices by the farmers by organizing mass awareness programmes and through media in vernacular language.

Protection and management of Flood Plain Zones (FPZ):

As per the Action Plan, it was proposed to regularly check floodplain encroachments and execution of plan for protection and management of flood plain zone by March 2020.

Maintaining minimum environmental flow of river:

As per the Action Plan, State has proposed completion for activities related to e-flow by March 2020.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the Action Plan, State has proposed to carry plantation works in the floodplain areas of the river by June -2020.

13. KARNATAKA

Ground water regulation & water conservation:

As per the Action Plan, following activities are carried out regularly by the State:

- Installation of rain water harvesting by the industrial, commercial and other institutions and groundwater recharging with only clean water will be encouraged by CGWB/CGWA
- Carrying assessment of ground water survey for quality and to identify over exploited and critical blocks in the districts
- All the industry have been directed to obtain NOC from the CGWB and action is taken against the Units in Operation without obtaining of NOC from CGWA
- Periodic surprise inspection of the industry conducted to rule out any forceful injection of industrial effluents into ground water resources

Protection and management of Flood Plain Zones (FPZ):

As per the Action Plan, removal of encroachment and notification of floodplain zone is proposed to be carried out within 6 months. MPR from the State not received.

Maintaining minimum environmental flow of river:

Maximum and minimum flows are being monitored during the period 2015-16 of all the rivers.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the Action Plan, Plantation along the river stretches is proposed to be carried out within 6 months. MPR from the State not received.

14. KERALA

Ground water regulation & water conservation:

As per the Action Plan, Provisions of roof top rain water harvesting in Government buildings, commercial buildings, hotels and Houses will be emphasized.

Protection and management of Flood Plain Zones (FPZ) and Maintaining minimum environmental flow of river:

No information provided by the State in the MPR and Action Plan.

Plantation activities and Setting up biodiversity parks on flood plains:

No information provided by the State in the MPR and Action Plan.

15. MADHYA PRADESH

Ground water regulation & water conservation:

As per the MPR, State claims to be regulating ground water, installing Rain water Harvesting systems and has adopted good irrigation practices. However, details of the same have not been provided.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, the work is under process at the level of Water Resource Department.

Maintaining minimum environmental flow of river:

As per the MPR, the State has informed that all the rivers are non- perennial hence maintaining of minimum environmental flow of river is difficult in present scenario.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, during the period, around 1.9 lakhs plants were planted along the 6 polluted river stretches. Establishment of Biodiversity Park is proposed.

16. MAHARASTRA

Ground water regulation & water conservation:

- As per the Action Plan, State Ground Water is regulated under Maharashtra Groundwater (Development and Management) Act, 2009. The EC has mandated rainwater harvesting for projects above 20,000 Sq.m.
- As per the action plan and MPR submitted by the State, State Water Resource department has been directed by the RRC to adopt good irrigation practices, maintain e-flows, implement water shed management and rain water harvesting, develop green cover and biodiversity parks along the banks.

Protection and management of Flood Plain Zones (FPZ):

As per the Action Plan, States proposed to implement River Regulation Zone policy strictly to restrict activities in the river bank. Encroachments, depositions, construction or any kind of developmental activities on the bank of rivers is be banned. However, action taken status not reported in the MPR.

Maintaining minimum environmental flow of river:

As per the Action Plan, most of the rivers are non-perennial in nature and the flow in non-monsoon is attributed to the release of water from various dams. Most of the river basin remains dry in lean season.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the Action Plan, Government of Maharashtra has been instrumental in increasing tree and forest cover all over the State through its Forest Department. The details of Plantation Program launched across the State are as follows:

Year	Plants proposed	Plants planted
2016	2 Crore	2.82 Crore
2017	4Crore	5.43Crore
2018	13Crore	15.88Crore

17. MEGHALAYA

Ground water regulation & water conservation:

As per the MPR, provisions of roof top rain water harvesting have been incorporated in the bye laws and are being implemented. Rain water harvesting implemented for Schools and government buildings.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, there is no declared Floodplain zone. However, as per the Action Plan, notification with regard to floodplain zone is proposed to be notified within one year for Umkhrah and Umshypri Rivers.

Maintaining minimum environmental flow of river:

As per the MPR, all the rivers are perennial.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, a proposal for plantation on both sides of the river at 9 identified locations has been prepared and sent for approval. A botanical garden under the Forest and Environment Department is present within the catchment area of the river Umkhrah. A Park under the Forest and Environment Department is present within the catchment area of the river Umshyrpi.

18. MANIPUR

Ground water regulation, water conservation and maintaining minimum environmental flow of river:

As per the Action Plan, Forest Department of Manipur has been taking up various interventional measures to rejuvenate the watershed areas by planting trees, installing various soil and moisture conservation units by adopting other integrated watershed management strategies. These activities, in turn, are expected to improve the quantity as well as quality of water flows required

to sustain freshwater river ecosystem i.e. the e-flow (ecological and environmental flow) of river water.

The interventional measures for Nambul, Imphal and Thoubal River have been initiated through the German sponsored Kfw project to be implemented by Forest Department of Manipur. This project identifies riparian area management in the streams/rivulets of the above three Rivers as a very important component and aims to cover 1,200 km stream length in five preselected watersheds of the three above mentioned rivers.

Protection and management of Flood Plain Zones (FPZ):

As per the Action Plan, Water Resources Department, Government of Manipur has taken up certain activities both structural and non-structural for protection and improvement of flood plain zones of Nambul river like eviction of encroachments, anti-erosion and flood control works, river bund improvement, river front development, re-sectioning / dredging of river, etc.

Plantation activities and Setting up biodiversity parks on flood plains:

- As per the Action Plan, A KfW funded project to rejuvenate Singda river catchment is under implementation to carry out plantation activity for over 2500 Hectare forest land.
- In addition to the two Centrally Sponsored Schemes (KfW & Green India Mission), other schemes such as the National Afforestation Program (NAP), National Bamboo Mission (NBM) and other plan scheme of the State Government are also implemented in the catchment areas of the other rivers including the Manipur river and the Khujairok river which have not been covered by the kfw and the National Mission for a Green India project.

19. MIZORAM

Ground water regulation & water conservation:

- In Mizoram, surface water serves as the main sources of water for drinking, domestic and industrial purposes. Ground water extraction is insignificant.
- Provisions are made by the concerned department, i.e Irrigation & Water resources Department to adopt good irrigation practices in the State. However, irrigation is not practiced in the polluted location of the Rivers.
- As per the Action Plan of the polluted rivers, Rainwater harvesting has been initiated. Survey for setting up of Rainwater harvesting System is underway by PHE Department, Govt. of Mizoram.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, there is no Flood Plain Zones in Mizoram as it is a hilly region.

Maintaining minimum environmental flow of river:

As per the MPR, E-flow assessment is proposed to be taken up by Irrigation and Water Resources Department, Govt. of Mizoram.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, some of the rivers already have Riverine Reserved Forests of about 800 metres on either side of the river banks which are well protected. However, for enhancing tree and vegetation coverage, afforestation activities in suitable catchment areas have been proposed and plantation drives initiated and about 10% of the proposed works has been completed so far.

20. NAGALAND

Ground water regulation & water conservation:

- As per the MPR, Water Resources department under the State Plan carry out activity wherein wells are dug for ground water extraction. Sensitization programme for ground water is also under implementation.
- Water Resources Department has been carrying out activities under the Minor Irrigation Schemes wherein diversion, protection wall and line & unlined canals have been constructed under the Ministry of Water Resources.
- District Administration will notify for provisions of roof top rain water harvesting in Govt. building, commercial buildings and hotels.

Protection and management of Flood Plain Zones (FPZ)

As per the MPR, Dimapur Municipal Council will be implementing for the protection and management of Flood Plain Zones.

Maintaining minimum environmental flow of river

As per the MPR, Environment flow is being assessed by the Water Resources Department and is expected to be completed by June 2021.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, State proposes to develop green coverage/ parks adjacent to the banks of river Dhansiri, wherever feasible. The work is proposed to be completed by July 2020. Further, 10 community reserved forests existing (privately/community owned protected area) in Dimapur district, which falls in the catchment area of the River Dhansiri with a total area of 23.025 Sq. km has been declared and notified.

21. ODISHA

Ground water regulation & water conservation:

- As per the MPR, Rotational water supply is maintained in Khariff & Rabi crops.
- Status of Rooftop Rainwater Harvesting Structure (RRHS) installed as below:

River	RRHS in Govt Buildings	RRHS in Private Buildings	Check dams
Gangua & Daya River	131	4942	513
Brahamani & Guradih Nallah River	7	76	720
Mangala River	34	529	115
Nagavalli River	-	-	801
Kathajodi & Serua River	7	123	659
Ratnachira River	34	529	513

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, the proposal for construction of cross regulator at the off taking point Gangua Nalla to divert the entire flood discharge of Chandaka catchment to Kuakhia river has been approved.

Maintaining minimum environmental flow of river:

As per the MPR, minimum environmental flow for the river is maintained at various locations.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, 10,94,699 nos. of sapling and seedling have been planted during monsoon 2018 along the bank of the rivers, dam sites, barrage sites and canal sites, out of which 3,29,962 nos. of plants are alive.

22. PUNJAB

Ground water regulation & water conservation:

- As per the MPR, State has set up Directorate of Ground Water Management with the prime objective of conserving and managing water resources.
- Govt. of Punjab signed an agreement to formulate Water Conservation and Management Master Plan (WCMMP) for the State of Punjab by October, 2020.
- Good irrigation practice such as drip irrigation, sprinkler irrigation, laser leveling, etc are being adopted and promoted in the State by Department of Agriculture and Department of Soil and Water Conservation.
- Rain water harvesting is being carried out by Department of Soil and Water Conservation in Kandi area of Punjab by constructing check dams, rain water harvesting structures, silt detention structures, stream bank protection, contour bunding, runoff check and drop structures etc.
- The State Government has made rainwater harvesting mandatory for all public and commercial establishments and all properties in plots covering more than 500 sq. m in urban areas.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, rivers are already channelized, therefore flood plain zoning is not technically feasible.

Maintaining minimum environmental flow of river:

As per the MPR, Minimum 15% of average lean season flow is being maintained in river Sutlej (640 cusecs) & Beas (370 cusec). There is no regulation point in the State for Ghaggar, which is not a perennial river.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, Plantation is regularly being carried by Department of Forest on the side slopes of embankments and berms of rivers which help in checking erosion of embankments and river berms/edges. Further, Department of Forest, Punjab shall explore the feasibility of using CAMPA funds for setting up of Biodiversity parks.

23. PUDUCHERRY

Ground water regulation & water conservation:

- As per the MPR, U.T of Puducherry prepared a Water Policy in 2016 to develop, conserve and manage the water resources in the region in a sustainable manner guided by the national perspective.
- The Puducherry Building By-laws and Zoning Regulations mandates the building owners to take effective measures for rain water harvesting and necessary conditions are incorporated in the Building permits. Rain water harvesting structures have been provided in all Government buildings.
- The Puducherry Ground Water Authority has been constituted under the Pondicherry Ground Water (Control & Regulatipn) Act, 2002 to effectively and efficiently control and regulate the extraction of groundwater in the Union Territory.
- In the present budget, a subsidy of Rs. 5000/- has been proposed for cultivation of Millets / Minor Millets which would help in reducing water usage. It is proposed to cover more area under precision farming.
- Attractive subsidy assistance is being extended to farmers for installation of Drip/ Sprinkler irrigation devices and laying underground pipelines for conveyance of irrigation water.

Protection and management of Flood Plain Zones (FPZ):

As per MPR, Flood protection scheme works has been included under Flood Management and Border Area Program for an amount of Rs.50 Crore in the proposal for the period from 2020-2025 for getting approval from Government.

Maintaining minimum environmental flow of river:

As per MPR, Prohibitory order imposed on lorries, vans, two wheelers, bullock carts and any similar load carrying vehicles in the floodplain in order to prevent illegal sand mining, which affects the e-flow in the rivers. Check dams have been constructed to regulate the flow.

Plantation activities and Setting up biodiversity parks on flood plains:

As per MPR, along the bank of river Arasalar, Forest Department has planted 7362 plants in the year 2019. Further, 4000 mangroves have been planted on the bank of Chunnambar river. DPR for developing 25 acre of Biodiversity Park (Mangrove plantation) at Karaikal will be prepared within 6 months.

24. RAJASTHAN

Ground water regulation & water conservation:

- As per the Action Plan, 171.53 Hectare area is covered by drip and 1949 Hectare area is covered by sprinkler system in Kota Area. 246.75 Hectare area is covered by drip and 112 Hectare area is covered by sprinkler system in Keshoraipatan, Area.
- 1172 water harvesting structures have been built in Jaipur district.

Protection and management of Flood Plain Zones (FPZ):

There is no flood prone zone in the area and therefore zoning has not been carried out. Construction activities close to river is being regulated.

Maintaining minimum environmental flow of river:

E-flow release system is in place at the Chambal Barrage. E-flow of 5000 cusec is released for 35 minutes from Kota Barrage every Monday during non-e-flow period only, i.e. all Mondays during January to onset of Monsoon.

Plantation activities and Setting up biodiversity parks on flood plains:

Information not provided in the Action Plan and MPR not received from the State.

25. SIKKIM

Ground water regulation & water conservation:

Few industries are extracting ground water in Rangit, Ranichu & Teesta river stretches. These units are required to obtain necessary permission from CGWA.

Protection and management of Flood Plain Zones (FPZ):

All areas fall in hilly terrain and no flood plain zone has been identified.

Maintaining minimum environmental flow of river:

As per the MPR, all Hydro Electric projects (HEPs) have been directed to install environmental flow meter. Accordingly, 4 HEPs have installed e-flow meter to maintain 15-20% flow of river.

Plantation activities and Setting up biodiversity parks on flood plains:

Information not provided in the Action Plan and MPR.

26. TAMIL NADU

Ground water regulation & water conservation:

- A comprehensive Ground Water (Management and Development) Act, to regulate and manage the extraction of Ground Water is under active consideration of the Government.
- Individual households & commercial buildings are being insisted to put up rain water harvesting structures within their premises.
- Tamil Nadu has 34 River Basins consisting of 127 Sub Basins. Under World Bank assisted Tamil Nadu Irrigated Agriculture Management Project (TNIAMP), Basin Management activities are under progress in River stretches of Thirumanimutharu and Thamirabarani. For other rivers stretches the same will be taken up in phased manner under TNIAMP.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, identification of FPZ areas has been completed in coordination with Revenue Department in River Sarabanga, River Thirumanimutharu, River Vasista and River Thamirabarani. For other rivers work is in progress.

Under the Tamil Nadu Protection of Tanks and Eviction of Encroachment Act., 2007, identified encroachments are being evicted in coordination with Revenue Department. Moreover evictions of encroachment and resettlement have been proposed in Nadanthai Vaazhi Cauvery Scheme also.

Maintaining minimum environmental flow of river:

As per the MPR, in Tamil Nadu, Cauvery is the major river and as per Cauvery Water Disputes Tribunal's Order, 2.5.TMC ft of water is released in the river to maintain E Flow. Flow is only in the rainy season in River Sarabanga, River Thirumanimutharu and River Vasista.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, Green belt is being developed continuously in the State by various departments under afforestation programmes. Further developments are also proposed under the "Nadanthai Vaazhi Cauvery Scheme" also. Tree planting on the banks of the river stretches along with the Forest Department will be completed before March 2021.

27. TELANGANA

Ground water regulation & water conservation:

Status provided in the MPR:

a. The WALTA Act has been adopted by the State of Telangana. As per rule 13 every individual or institution has to take a permission to dig a new bore well from Mandal WALTA Authority for Agriculture, Industries and Drinkingwater purposes
b. For industries, Groundwater Department will give the approvals for extraction of Groundwater by recommending new bore wells sites abiding WALTA rules.
c. Ground Water Department has identified (1358) Villages as Over exploited, considering Ground Water Estimation Resources assessment for the base year 2012-13
d. As per TSWALTA ACT, no extraction of Groundwater is permitted in Over Exploited villages for agriculture and Industrial except for drinking purpose.
e. Rain water harvesting theme park is developed at Road No.51, Jubilee Hills, Hyderabad.
f. The technical specifications for the RWH systems and recharge purposes and indicative list of available service provider information is placed in the website: "Hyderabadwater.gov.in"
g. The ground water department while issuing approval to industries for withdrawal of ground water is recommending to construct a suitable rain water harvest structure as one of the terms and conditions which has to be complied by the industry mandatorily.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, it is proposed to form a Committee for notification of flood plain zone to collect data of past history of flooding and mitigating measures taken and for identification of new areas for flood mitigation.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the MPR, encroachments removed under Muslim jung Bridge & Salarjung bridge, and Nayapool bridge. Galvalume sheets erected to prevent further encroachments.

28. TRIPURA

Ground water regulation & water conservation:

- As per the MPR, directions have been issued to obtain the NOC from Central Ground Water Authority to all the Industrial units located in the catchment areas of the rivers. Many of the units have also submitted the declarations along with the NOC from Central Ground Water Authority.
- Generation of mass awareness to conserve water and also for good irrigation practices is being carried out by the farmers in the catchment areas of rivers.

- All the industries located in the catchment areas using ground water for industrial purpose have been directed to construct rain water harvesting plant and the compliance has been ensured.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, check dam has been installed to maintain the E-flow of the rivers. Regular monitoring is going on to check illegal encroachment.

Maintaining minimum environmental flow of river:

Tender has been invited for installation of digital e-flow meter to monitor the minimum discharge during lean period and records to be maintained monthly basis after installation.

Plantation activities and Setting up biodiversity parks on flood plains:

Extensive river side plantation has been carried out on both sides of the rivers.

29. UTTARAKHAND

Ground water regulation & water conservation:

As per the Action Plan following activities are proposed to be undertaken:

a. CGWA to identify over exploited and critical blocks in the area with respect to the ground water extraction and industries be directed to comply with CGWA conditions.
b. UEPPCB should be vigilant and conduct surprise inspection of the industry to rule out any forceful injection of industrial effluents into groundwater resources or disposal of effluent in rain water recharge pits.
c. Provisions of roof top rain water harvesting in Govt. building and construction of artificial lakes /ponds, wherever feasible.

Protection and management of Flood Plain Zones (FPZ):

As per the Action Plan, action proposed for floodplain management is as below:

a. Encroachments along the banks of rivers if any will be removed. Illegal dumping of waste etc. will be removed from flood plain areas
b. River Bhela and Dhela is non-perennial water body and flash floods are occurring only during monsoon, therefore flood plain zoning is not required for river Bhela.
c. The Uttarakhand Irrigation Department carried out an assessment of flood plain zoning of river Suswa and river Kichha. The proposal has been submitted to the State Government for approval. Flood plain zoning shall be carried out within 18 months of approval for the same
d. River Kalyani is spring fed water body and flash floods are occurring only during monsoon months, therefore flood plain zoning is not required for river Kalyani.
e. The Department of Irrigation has prepared for flood plain zoning of rivers Gola (along Kichha town) and Kosi (from Sultanpur Patti to Patti Kalan) in the year 2017. Approximate

cost of proposal is Rs. 72.89 Lacs and which would be completed within 18 months after approval of the same.

f. Nandhor/ Kailash - River Nandhor/Kailash is non-perennial water body and flash floods are occurring only during monsoon months, therefore flood plain zoning is not required for river Nandhor/Kailash.
g. The Department of Irrigation to identify and demarcate floodplain zone of River Ganga within 6 months.

Maintaining minimum environmental flow of river:

As per the Action Plan, action proposed for e-flow management is as below:

a. River Bhela and Dhela carries no natural water during non-monsoon months. Therefore, it would be difficult to maintain natural flow in the river.
b. River Suswa gets significant dilution from the River Song at downstream of Doiwala, which increase natural flow of the river almost the year. Effort would be made to maintain environmental flow in River Suswa/Song.
c. River Kichha carries no natural water during non-monsoon period as river water is diverted to drinking and irrigation uses from Kathgodam-Haldwani. Therefore, it is not difficult to maintain E- flow in the river Kichha.
d. River Kalyani carrying very less natural water during non-monsoon months. Therefore, it would be difficult to maintain natural environmental flow in the river.
e. E flows have been notified for River Ganga and are being monitored by CWC.
f. Forestry intervention would support water retention and flow of river.
g. River Kosi carrying restricted flow during non-monsoon period as barrage is constructed at Ramnagar from where river water is diverted irrigation uses. It would be difficult to maintain natural flow in the river.
h. River Nandhor Kailash carries no natural water during non-monsoon period. Therefore, it is not feasible to maintain E- flow in the river.
i. River Pilakhar carries very less natural water during non-monsoon period. Wastewater discharge from industries may increase the flow of river.

However, provision for additional water storage in the form of artificial ponds and lakes wherever feasible will be taken care and same will be allowed to discharge in the Rivers. Artificial lakes and ponds also help in ground water recharge. All the government will be directed to create a provision of roof top rain water harvesting provision for ensuring ground water recharge in the catchment of rivers.

Plantation activities and Setting up biodiversity parks on flood plains:

As per the Action Plan, adjacent to the banks of rivers, green coverage /parks wherever feasible will be developed by the Forest Department, Uttarakhand.

30. UTTAR PRADESH

Ground water regulation & water conservation:

- As per the MPR, State Government has notified The Uttar Pradesh Ground Water (Management and Regulation) Act, 2019 (UP Act No.-13 of 2019) dated 9th August 2019 for protecting, conserving, controlling and regulating ground water to ensure its sustainable management in the State, both quantitatively and qualitatively, especially in stressed rural and urban areas.
- As per Ground Water Resource Estimation 2017, out of 820 blocks of Uttar Pradesh, 82 blocks have been categorized as 'Over Exploitation', 47 as critical, 151 as semi critical, 540 safe. Out of 10 Urban Agglomerates, 9 have been categorized as 'Over Exploited' and 1 as 'Critical'.
- The 'Rajya Bhoojal Sanrakshan Mission' started from year 2017-18 to cover the works of different departments in problematic areas so as to get significant effect on Ground Water. It also proposes Roof Top Rain Water Harvesting.
- As per the Action Plan, following measures are proposed to be adopted by State as good irrigation practices:

a. Massive awareness programme is required in the State to make people aware about importance of precious resources and to prevent misuse of Ground Water.
b. Micro Irrigation Systems should be introduced in place of flood irrigation to save Ground Water and increase the productivity.
c. The crop pattern/ type should also change in problematic areas.
d. The whole state should be demarcated w.r.t Poor Ground Water Quality Zone.
e. A regulation is required for protecting, conserving and regulating ground water.
f. State Water Resource department has been directed by the RRC to adopt good irrigation practices, maintain e-flows, implement water shed management and rain water harvesting, develop green cover and biodiversity parks along the banks.

Protection and management of Flood Plain Zones (FPZ)

As per the MPR River stretch wise steps under taken by State Government is mentioned in below table:

Name of River	**Introduce pillars at suitable locations in the river flood plain for demarcation of the flood plain boundary for effective enforcement on eliminating incidences/ practices of waste disposal encroachment in the river bed**	
	Activity	**Timeline**
Hindon	50m from both banks will be declared as no construction/ no development zones	3 months
	Detail survey is being conducted by IIT Delhi	6 months
	Demarcation of flood plain will be made at suitable location by planting a row of suitable plants through Forest Department	9 months

Kali East/ Varuna/ Gomti/ Ramganga/ Sai	50m from both banks will be declared as no construction/ no development zone	3 months
	For detailed survey	6 months
	Demarcation of flood plain will be made at suitable location by planting a row of suitable plants through Forest Department	9 months
Yamuna	100m from both banks will be declared as no construction/ no development zones till the notification of the above purpose is issued based on studies	6 months
	Demarcation of flood plain will be made at suitable location by planting a row of suitable plants through Forest Department	9 months
Ganga	Detailed report of flood plain zone has been presented by Special Committee in O.A. 200/2014 to Hon'ble NGT	3 months
	Demarcation of flood plain zone will be made at suitable location as per Central Water Commission (CWC) report, will be made by fixing pillars at suitable locations	9 months
Betwa/ Ghaghra/ Rapti/ Saryu	100m from both banks will be declared as no construction/ no development zone	3 months
	For detailed survey	6 months
	Demarcation of flood plain will be made at suitable location by planting a row of suitable plants through Forest Department	9 months

Maintaining minimum environmental flow of river:

Details provided in the MPR are as below:

Name of River	**River Stretch**	**Possibility of maintaining E-flow**	**Timeline**
Perennial River Flow			
Hindon	Saharanpur to Ghaziabad	E-flow study will be carried by IIT Delhi	9 months
Yamuna	Azgarpur to Etawah, Shahpur to Prayagraj	E-flow will be studied and decided by Central Water Commission	12 months
Ganga	Kannauj to Varanasi	E-flow from Kannauj to Unnao is maintained from Narora Barrage and Kanpur Barrage as per directions of Central Water Commission 24 cumec- Nov to May 48 cumec- June to Oct	-
		E-flow from Unnao to Varanasi will be studied and decided by Central Water	

Name of River	River Stretch	Possibility of maintaining E-flow	Timeline
		Commission	
Ramganga	Moradabad to Kannauj	E-flow study will be carried out by IIT Delhi or other agency	9 months
Betwa	Hamirpur to Wagpura		
Ghaghra	Barhalganj to Deoria		
Rapti	Domingarh to Rajghat		
Saryu	Ayodhya to Elafatganj		
Non- perennial River Flow			
Kali Nadi East	Muzaffarnagar to Gulaothi	As these are non-perennial river, e-flow cannot be maintained	
Varuna	Rameshwar to Varanasi		
Gomti	Sitapur to Varanasi		
Sai	Unnao to Jaunpur		

Plantation activities and setting up of Bio-diversity parks:

As per the MPR, status of plantation activities undertaken and proposed:

River Stretch	No. of Sampling Planted Plants planted	
	Year 2019-20	**Proposed for 2020-21**
Hindon	55.34	55.64
Kali	65.93	69.35
Varuna	25.62	14.79
Yamuna	175.68	252.00
Gomti	180.26	151.99
Ganga	183.24	226.39
Ramganga	77.28	68.97
Betwa	24.61	49.78
Ghaghara	39.72	26.22
Sai	77.20	71.36
Rapti	57.25	29.08
Saryu	35.29	34.13
Total	**997.42**	**1049.70**

As per the MPR, Uttar Pradesh has identified the sites for the development of Bio-diversity parks in 25 districts in the main stem of Ganga and 2 districts in Yamuna covering a total area of 3591.984 ha. The project proposals for development of Bio-diversity parks are prepared under the supervision of Prof. C R Babu, former Pro Vice Chancellor, University of Delhi/ Emeritus Professor, CEMDE/ Incharge, Yamuna Bio Diversity park and his scientific team.

31. WEST BENGAL

Ground water regulation & water conservation:

- As per the MPR, groundwater in the area is regulated by SWID, GoWB.
- The installation of Water Meter with telemetry system at Industrial Tube Wells for monitoring of real-time GW withdrawal is in progress.
- Micro Irrigation with supplementary water management activities is under progress. Further, activities such as increasing water use efficiency through good irrigation practices, soil and water conservation, cultivation of low water demanding crops and propagation of eco-friendly agriculture is being undertaken.
- For installing RWH system, a project has been undertaken jointly by WBPCB and P& RD Dept. under MGNREGA.

Protection and management of Flood Plain Zones (FPZ):

As per the MPR, work for protection to the eroding right bank of the river Churni is in progress. Further, Protection to the left bank of River Ganga from Mangal Pandey ghat to Malancha Tourist lodge for a length of 135 metre including renovation of sluice under Barrackpore Municipality is in progress.

Maintaining minimum environmental flow of river:

River	Priority Level	Remarks
Mahananda	**II**	The stretch of the river is perennial and has flow round the year. Water in this stretch is used forfishing and abstraction for city supply after treatment and disinfection.
Churni	**III**	Hanskhali, Krishnaganj and Ranaghat - 0.5 KM bank protection work to prevent erosion of the right bank at Bapujinagar GP, Hanskhali Nadia which will help to maintain e-flow. Proposed timeline : 31-3-2021 (estimation stage)
Dwarka	**III**	The river Dwarka has no freshwater up-stream flow. It receives runoff during monsoon and base flow is maintained from ground water pool during lean months.
Ganga	**III**	The river is a perennial river. The environmental flow is maintained through the release from Farakka barrage throughout the year.

River	Priority Level	Remarks
Jalangi	**IV**	The river Kansi has freshwater supply from the Kangsabari Dam at Mukutmanipur as up-stream flow. It receives runoff during monsoon and base flow is maintained from ground water pool during lean months including the up-stream flow. The Kangsabati dam authority may be instructed to release sufficient water so that the ecological flow in this river is maintained even in the lean season of the year.
Kansi	**IV**	
Barakar	**V**	The river system Barakar-Damodar has freshwater up-stream flow from the reservoirs Maithon and Panchet respectively. Both rivers receive huge runoff during monsoon and base flow is maintained primarily from the reservoir discharge.
Dwarakeshwar	**V**	During the lean season, not much freshwater supply from upstream source. It receives runoff during monsoon and base flow is maintained from ground water pool during lean months including the up-stream flow
Kaljani	**V**	
Karola	**V**	
Mayurakshi	**V**	
Rupnarayan	**V**	The river Rupnarayan has sufficient freshwater supply from upstream source as well as tidal event. It receives runoff during monsoon and base flow is maintained from ground water pool and tidal flow during lean months including the up-stream flow.
Silabati	**V**	The river Silabati has no freshwater supply from upstream source. It receives runoff during monsoon and base flow is maintained from ground water pool during lean months including the up-stream flow
Teesta	**V**	The river Teesta has freshwater supply from upstream source. It receives runoff during monsoon and base flow is maintained from ground water pool during lean months including the up-stream flow.

Plantation activities and setting up of Bio-diversity parks:

- As per the MPR, Plantation has been done in a massive way on both sides of the river of River Churni and Dwarka. Work in progress or proposed in other river stretches.
- One biodiversity park called Eco-Park has already been developed in New Town, Kolkata area. Government of West Bengal is going to set up Biodiversity Park at every block from the next financial year.

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